Government of Western Australia
Department of Mines, Industry Regulation and Safety

Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	6216/3
Permit type:	Purpose Permit
Applicant name:	Wonmunna Iron Ore Pty Ltd
Application received:	30 June 2022
Application area:	850 hectares
Purpose of clearing:	Mineral production and associated activities
Method of clearing:	Mechanical Removal
Tenure:	Mining Lease 47/1423
	Mining Lease 47/1424
	Mining Lease 47/1425
Location (LGA area/s):	Shire of East Pilbara
Colloquial name:	Wonmunna Iron Ore Project (WIOP)

1.2. Description of clearing activities

Wonmunna Iron Ore Pty Ltd proposes to clear up to 850 hectares of native vegetation within a boundary of approximately 2,462.9 hectares, for the purpose of mineral production and associated activities. The project is located approximately 70 kilometres west-north-west of Newman, within the Shire of East Pilbara.

Clearing permit CPS 6216/1 was granted by the Department of Mines and Petroleum (now the Department of Mines, Industry Regulation and Safety) on 25 September 2014 and was valid from 18 October 2014 to 31 January 2020. The permit authorised the clearing of up to 555 hectares of native vegetation within a boundary of approximately 2,462.9 hectares, for the purpose of mineral production.

CPS 6216/2 was granted on 17 October 2019, extending the permit duration by 12 years, to 31 January 2032. The area of clearing authorised to clear remained and the permit boundary remain unchanged.

On 30 June 2022, the Permit Holder applied to amend CPS 6216/2 to increase the area of clearing authorised from 555 hectares to 850 hectares. The permit boundary is to remain unchanged (2,462.9 hectares).

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	11 October 2022
Decision area:	850 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51K of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 30 June 2022. DMIRS advertised the application for a public comment for a period of 7 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix D), the clearing principles set out in Schedule 5 of the EP Act (Appendix B), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment has not significantly changed since the assessment for CPS 6216/2. The Delegated Officer determined that the proposed additional clearing of 295 hectares is not likely to lead to an unacceptable risk to environmental values.

1.5. Site map

A site map of proposed amended clearing area is provided in Figure 1 below (Phoenix, 2022).

Figure 1. Map of the amendment application area. The grey areas indicates the additional clearing area, the purple areas indicates the previously approved clearing areas and the yellow border indicate the unchanged permit boundary.

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)
- *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 2013)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

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 by (Phoenix, 2022):

- Buffering zones between disturbance areas and natural drainage lines that are to be retained as well as prescribe management of surface water across the project site;
- The collection, treatment and disposal of stormwater of different quality will be undertaken. Stormwater, such as roof runoff, runoff from roads, parking areas, ROM pads etc., are to be discharged directly to the environment via sedimentation basins;

- Where stormwater runoff that has been degraded due to contact with soil, oils etc. from mechanical workshops, fuel storage areas, wash down areas or contaminated water that has been in contact with processing wastes of some description will be treated at source using separators and interceptors;
- Clearing within drainage channels will occur only during the dry season; and
- Bed and bank disturbance will be minimised to decrease the risk of water erosion and sedimentation within drainage lines.

3.2. Assessment of impacts on environmental values

A review of current environmental information (Appendix A, Appendix DAppendix B) reveals that the assessment against the clearing principles has not changed significantly from the Clearing Permit Decision Report CPS 6216/2.

3.2.1. Biological values (flora, fauna) - Clearing Principles (a, b, c)

Assessment

The amended clearing area is within the original permit boundary area. The permit area is located within the Pilbara bioregion and Hamersley subregion. The vegetation within the revised disturbed footprint is mapped as Beard associations 18, 29 and 82 (Government of Western Australia 2019). These vegetation associates have more than 99% of their pre-European extent remaining at a bioregional and state level (see section A.2).

The revised disturbed footprint is within the area surveyed by G&G Environmental (2011). As such, the vegetation types recorded remain the same. Updated desktop searches identified no Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) within the permit area (Phoenix, 2022; GIS Database). None of the vegetation types mapped for the survey area match any known TECs.

Recent targeted flora searches conducted by Phoenix (2021) identified additional flora taxa within the permit area. A total of 274 flora taxa (270 previously) are now known within the permit area (G&G, 2011; Phoenix, 2021). Based on these results, the floristic diversity within the application area is considered to be within the range of floristic diversity recorded by other surveys conducted in the surrounding region (Phoenix, 2022).

The flora survey (Phoenix, 2021) identified four Priority flora and one Threatened flora species within the permit area; *Seringia exastia* (Critically Endangered), *Oxalis sp. Pilbara* (Priority 2), *Acacia subtiliformis* (Priority 3), *Aristida lazaridis* (Priority 2) and *Eremophila pusilliflora* (Priority 2). Vegetation types AW1, C1, M4 and SS1 are considered significant as they provide habitat for these conservation significant flora species. However, neither vegetation type is restricted to the application area, with over 50% of the vegetation types occurring outside of the permit area (G&G, 2011; Phoenix, 2022). Florabase records provide regional context for each of the conservation significant species, which outlined that these species occur beyond the boundary of the application area (Phoenix, 2022; Western Australian Herbarium, 1998-).

The Threatened species *Seringia exastia* was recorded during the targeted flora survey (Phoenix, 2021). A total of 2,234 individuals were recorded in the application area within the M4 vegetation unit, and 691 individuals are estimated to be impacted from the proposed clearing (Phoenix, 2022). This species was previously only found in the Kimberley region however, a taxonomic study concluded that *Seringia exastia* is the same species as *Seringia elliptica* (Binks et al., 2020). *Seringia elliptica* is common species and has a range that extends throughout the Pilbara region, central Western Australia, the Northern Territory and into South Australia (Australasian Virtual Herbarium, 2021; Western Australian Herbarium, 1998-). The taxonomy of the genus has been revised to synonymise *Seringia elliptica* under *Seringia exastia* as it is the oldest effectively published name (Binks et al., 2020). This has resulted in *Seringia exastia* now being a common and widespread species with no significant threats. Given that this species is not considered Threatened and that *Seringia exastia is* widely distributed throughout Western Australia and neighbouring states (Australasian Virtual Herbarium, 2021), the proposed clearing is not likely to impact this species on a local or regional level.

Of the four Priority flora species identified within the application area, one *Eremophila pusilliflora* individual and 15 *Acacia subtiliformis* individuals may be impacted from the proposed clearing. Florabase records provide regional context for each of the significant species found during the Phoenix (2021) flora survey (Western Australian Herbarium, 1998-). While exact regional population and plant numbers are not available, there are known individual and population records ranging from 4,000 to 50 individuals for *Acacia Subtiliformis* and populations ranging from 100 to 1 for *Eremophila pusilliflora* (see flora analysis table in appendix A.3). Based on these records, the number of individual plants within the revised clearing area is low, and each species is well represented outside of the application area. As such, the proposed clearing is not likely to significantly impact the conservation status of these species on a local or regional scale. No individuals of *Oxalis sp. Pilbara* (Priority 2) and *Aristida lazaridis* (Priority 2) occur within the amended clearing footprint and are not likely to be impacted from the proposed clearing (Phoenix, 2022).

No additional weeds have been identified within the permit area (Phoenix, 2021). No declared weeds were recorded within the permit area. A total of eight introduced flora species are known to occur within the permit area (G&G, 2011). Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Of the five significant fauna species recorded during the 2011 and 2014 field surveys (Phoenix, 2014), four of these no longer hold a conservation status (DBCA, 2019):

- Australian Bustard (*Ardeotis australis*);

- Bush Stone-curlew (*Burhinus grallarius*);
- Star Finch (*Neochmia ruficauda subclarescens*); and
- Rainbow Bee-eater (*Merops ornatus*).

Therefore, only one Priority fauna species occurs within the permit area, the Western Pebble-mound Mouse (*Pseudomys chapmani*; Priority 4). As with the original disturbed footprint, the additional disturbance will remove areas of Western Pebble-mound Mouse habitat (Mallee woodland and spinifex steppe), which may impact species abundance on a local scale. A combined total of 468.8 hectares of Mallee woodland and spinifex steppe occur within the revised disturbance footprint, representing 13.5% of the total area mapped for these habitats for the WIOP. However, the Western Pebble-mound Mouse has a wide distribution across the Pilbara region (Phoenix, 2014), with an additional 2,932.4 hectares of suitable habitat mapped outside of the revised disturbance footprint. As such, the proposed disturbance is not likely to impact the conservation of this species on a local or regional scale.

There is suitable habitat for the Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*), Ghost Bat (*Macroderma* gigas), and Pilbara Olive Python (*Liasis olivaceous barroni*) within the existing exclusion boundary placed around the Weeli Wolli creek by the proponent (GIS Database). Limited suitable habitat for these species exists within the application boundary, however they may use the application area for foraging and dispersal activities.

Conclusion

Based on the above assessment, the proposed clearing is unlikely to significantly impact on biodiversity, fauna habitats and threatened flora values of the application area.

For the reasons set out above, it is considered that the impacts of the proposed clearing on biodiversity can be managed by taking steps to minimise the risk of the introduction and spread of weeds.

Conditions

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

- clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- ensure that no known weed-affected soil, mulch, fill or other material is brought into the area to be cleared; and
- restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

3.3. Relevant planning instruments and other matters

The clearing amendment application was advertised on 29 July 2022 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There are two native title claims over the area under application (DPLH, 2022). These claims have been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2022). 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 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.

Other relevant authorisations required for the proposed land use include:

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

End

Appendix A Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is part of an expansive tract of native vegetation in the intensive land use zone of Western Australia (GIS Database). It is surrounded by land that is predominantly used for mining operations (GIS Database).
Ecological linkage	According to available databases, there are no formal ecological linkages within the application area (GIS Database).
Conservation areas	No conservation areas were identified within the permit area (Phoenix 2022; GIS Database). The nearest conservation area is the Karijini National Park, which is an A Class Nature Reserve, located approximately 39 kilometres west of the permit area.
Vegetation description	The vegetation of the application area is broadly mapped as the following Beard vegetation associations: 18: Low woodland; mulga (*Acacia aneura*); 29: Sparse low woodland; mulga, discontinuous in scattered groups; and 82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database). A Level 2 flora and vegetation assessment was conducted over the application area in 2011 by G&G Environmental Pty Ltd (G&G, 2011). A total of 15 vegetation associations were recorded within the application area, including: **C1 -** Isolated mid *Eucalyptus camaldulensis* trees to mid *E. camaldulensis* woodland over isolated low trees to low *Acacia citrinoviridis* and *E. xerothermica* woodland over isolated mixed tall shrubs to tall shrubland frequently with *Gossypium sturtianum* and *Petalostylis labicheoides* shrubs over a mixed low to mid grassland of *Eulalia aurea, Themeda triandra* and *Triodia* spp. **C3 -** A low *Eucalyptus xerothermica* and *E. socialis* woodland, occasionally with *E. repullulans* mallee over a mid to tall *Gossypium sturtianum*, *Petalostylis labicheoides* and *Acacia* spp. shrubland over a low to mid mixed grassland of *Themeda triandra* and *Triodia* spp. **C4 -** A low *Eucalyptus socialis* and *E. gamophylla* mallee woodland over *Acacia maitlandii* and *Petalostylis labicheoides* mid to tall shrubland over a *Triodia longiceps* and *T. brizoides* low to mid hummock grassland. **C5 -** Isolated low *Acacia aptaneura* and *A. pruinocarpa* trees over a low *Eucalyptus repullulans* and *E. leucophloia* woodland over isolated mixed low to mid *Acacia* spp. shrubs over isolated clumps of *Triodia brizoides* and *Themeda triandra* grassland. **C6 -** Isolated low *Acacia distans*, *A. pruinocarpa* and *Corymbia hamersleyana* trees in a low open *Eucalyptus gamophylla* and *E. repullulans* mallee woodland over a tall *Petalostylis labicheoides* scrubland over isolated low mixed shrubs with *Gompholobium polyzygum* and *Keraudrenia nephrosperma* prominent over isolated clumps of low *Triodia pungens* hummocks. **M1 -** Isolated clumps of *Eucalyptus repullulans* mallee to low mallee woodland over isolated low to mid *Acacia bivenosa*, *A. synchronicia* and *Melaleuca eleuterostachya* shrubs in a *Triodia brizoides* low hummock grassland with a low *Eucalyptus repullulans* low mallee woodland over a mid *Acacia bivenosa* shrubland over a *Triodia brizoides*, *T. longiceps* and *Themeda triandra* low to mid grassland in drainage foci. **M2 -** Isolated low *Acacia* spp., *Corymbia hamersleyana* and *Eucalyptus leucophloia* trees over isolated low *E. repullulans* mallee to low mallee woodland over isolated mixed low shrubs to low open shrubland with *Corchorus lasiocarpus* subsp. *lasiocarpus*, *Indigofera monophylla*, *Ptilotus* spp. and *Goodenia* spp. prominent in a low open *Triodia brizoides* hummock grassland with a low *Eucalyptus repullulans* woodland over a mid-open *Acacia bivenosa* shrubland over a *Triodia longiceps* and *T. pungens* hummock grassland in drainage lines. Vegetation recovering from fire. **M3 -** Isolated low *Acacia aptaneura*, *A. pruinocarpa* and *A. synchronicia* trees or tall shrubs over isolated low mixed *Eucalyptus gamophylla*, *E. repullulans* and *E. socialis* mallee to low open mallee woodland over a low to mid *Triodia brizoides* and *T. wiseana* hummock grassland. **M4 -** Isolated low *Eucalyptus leucophloia* trees and *E. gamophylla* mallee to low open woodland over isolated tall mixed *Acacia* spp. and *Petalostylis labicheoides* shrubs to open shrubland over isolated low mixed shrubs to low open shrubland with *Gompholobium polyzygum*, *Dampiera candicans* and *Goodenia scaevolina* common over a *Triodia pungens* and *T. wiseana* hummock grassland with pockets of a low *Acacia distans* and *Eucalyptus leucophloia* woodland over

Characteristic	Details
	isolated tall mixed shrubs and isolated clumps of *Triodia pungens* hummocks on steep rocky slopes near the crest of plateaus and isolated mid *Eucalyptus leucophloia* trees over a low *E. repullulans* mallee and tall *Petalostylis labicheoides* shrubland over *Triodia longiceps* and *T. pungens* mid hummock grassland in drainage lines. **AW1 -** A low to mid *Acacia aptaneura*, *A. distans* and *A. pruinocarpa* woodland over isolated mid to tall *Eremophila forrestii* subsp. *forrestii*, *E. fraseri* and *Anthobolus leptomerioides* shrubs to open shrubland over a low mixed *Triodia melvillei*, *T. pungens* and *T. wiseana* open grassland to grassland with *T. melvillei* frequently dominant. **AW2 -** A low *Acacia rhodophloia* and *A. distans* woodland with isolated *Grevillea berryana* trees over mid to tall isolated *Anthobolus leptomerioides*, *Sarcostemma viminale* and *Eremophila latrobei* subsp. *latrobei* shrubs over an open *Triodia pungens* and *T. wiseana* hummock grassland. **EW1 -** Isolated low to mid *Eucalyptus leucophloia* and *Acacia aptaneura* trees to low open woodland over isolated low *Eucalyptus repullulans* mallee to open mallee woodland frequently with *E. socialis* low mallee woodland in drainage foci over a variable low to mid shrub layer with *Acacia* spp. and *Melaleuca eleuterostachya* common over a low to mid *Triodia brizoides* grassland often with patches of *T. angusta* and *T. pungens.* **S1 -** Isolated low *Acacia aptaneura* trees over isolated mid to tall *Acacia tetragonophylla* shrubs to open shrubland over isolated low to mid *Eremophila lachnocalyx* shrubs to mid shrubland over a low to mid mixed tussock grassland, frequently with *Aristida latifolia*, *Eragrostis xerophila* and *Astrebla pectinata*. **SS1 -** Isolated low trees, frequently *Corymbia hamersleyana* and *Acacia inaequilatera* over isolated low to tall mixed shrubs with *Acacia* spp., *Grevillea wickhamii* and *Hakea chordophylla* common over isolated low *Indigofera rugosa* shrubs in a low *Triodia brizoides* hummock grassland with isolated clumps of *Themeda triandra* in drainage foci. **SS2 -** Isolated low *Eucalyptus leucophloia* trees over isolated mid *Senna artemisioides* subsp. *oligophylla*, *S. glutinosa* and *S. glutinosa* subsp. *pruinosa* shrubs over isolated low *Hibiscus haynaldii*, *Sida cardiophylla* and *S. fibulifera* shrubs in a low open *Triodia brizoides* and *Triodia pungens* hummock grassland.
Vegetation condition	The vegetation survey (G&G, 2011) indicate the vegetation within the proposed clearing area is in Pristine to Excellent (Keighery, 1994) condition, described as: Pristine: No obvious signs of disturbance; and Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994). The full Keighery (1994) condition rating scale is provided in Appendix C.
Climate	The climate has been described by Beard (1990) as arid tropical with 9-11 dry months a year and summer rainfall influenced by the local topography. A major influence on the flora and vegetation are heavy rains associated with cyclones. Cyclones often cross the coastline and travel over the Fortescue Valley system toward Newman (G&G, 2011). The application area elevation ranges between 700-750 metres AHD (GIS Database). The average yearly rainfall is approximately 324.4 millimetres and the average annual evaporation rate is approximately 3200 millimetres (BoM, 2022). The Wonmunna project is located within the hot summer (October to April) - mild winter (May to September) bioclimatic region.
Soil description	The soil is mapped as 285Eg (Egerton system), 285Ne (Newman system) and 285Rk (Rocklea system) soil landscape systems. They are described as (DPIRD, 2022): **285Eg** - Highly dissected plains and slopes with sparse mulga shrublands or shrubby hard spinifex grasslands. **285Ne** - Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands. **285Rk** - Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex and occasionally soft spinifex grasslands with scattered shrubs.
Land degradation risk	The three land systems (Egerton, Newman and Rocklea) that intersect the application area are not generally susceptible to erosion; however, with the removal of vegetation and topsoil, water and wind erosion risk is increased, particularly following rainfall events (GIS Database).

Characteristic	Details
Waterbodies	No permanent waterbodies or wetlands intersect the application area. Several minor, non-perennial watercourses transect the area proposed to be cleared (GIS Database).
Hydrogeography	The application area falls within the Pilbara groundwater area as per the *Rights in Water and Irrigation Act* 1914 (RIWI Act) (GIS Database). The application area does not occur within any public drinking water source areas (GIS Database). The application area is located within the Fortescue River Upper catchment area (GIS Database). Salinity within the area ranges from 500 – 1000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database).
Flora	There are records of 28 priority flora within 20 kilometres of the application area. There are no records of Priority or Threatened Flora within the application area (GIS Database). Five conservation significant flora species were recorded within the application area during a targeted flora survey conducted by Phoenix Environmental Services Pty Ltd (Phoenix, 2021). The 5 species are outlined in section A.3.
Ecological communities	There are no Threatened or Priority Ecological Communities (TEC/PECs) within the application area. The nearest ecological community is the Weeli Wolli ecological community (Priority 1), which is approximately 10 kilometres north-east of the application area (GIS Database).
Fauna	A Level 2 Fauna assessment was conducted over the Wonmunna area in 2011 and 2012 by Phoenix Environmental, and updated in 2014 (Phoenix, 2014). A further desktop review was conducted in 2021 Phoenix (2022). From the surveys, 275 vertebrate fauna species were identified as potentially occur within the application area and a total of 169 fauna species were recorded during a field survey. One fauna species of conservation significance was recorded within the application area (Western Pebble-mouse - *Pseudomys chapmani*; Priority 4) (Phoenix, 2014). There are records of the Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia;* Vu), Ghost Bat (*Macroderma* gigas; Priority 4), and Pilbara Olive Python (*Liasis olivaceous barroni*; Vu) within 20 kilometres of the application area (GIS Database).

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 - Pilbara	17,808,657.04	17,731,764.88	99.57	1,801,714.98	10.12
IBRA Subregion - Hamersley	5,634,726.83	5,608,386.04	99.53	917,121.34	16.28
Beard vegetation associations - State					
Veg Assoc No.					
18	19,892,306.46	19,843,148.07	99.75	1,317,179.00	6.62
29	7,903,991.45	7,898,973.24	99.94	496,367.56	6.28
82	2,565,901.28	2,553,206.19	99.51	295,377.96	11.51
Beard vegetation associations - Bioregion					
Veg Assoc No.					
18	676,556.72	671,843.35	99.30	25.17	25.35
29	1,133,219.76	1,131,712.01	99.87	9.38	9.39
82	2,563,583.23	2,550,888.14	99.50	11.52	11.58

Government of Western Australia (2019)

A.3. Flora analysis table

Species	Habitat	Phoenix survey records		Florabase records		No. of plants to be disturbed
		No. plants	Veg. types	No. records	Population records	
Seringia exastia (CR)[1]	Plains in open woodlands and shrublands over hummock grasses.	2,234	M4 366.4 ha	289	2,000 1,000 6-20 Abundant Common	691 plants
Aristida lazaridis (P2)	Plains and floodplains in sand to loam soils in *Acacia* woodlands and hummock grasslands.	2	C1 14.6 ha	22	500 25 6 1-5 Occasional Common	none
Eremophila pusilliflora (P2)	Plains in sandy loam to loamy clay soils in *Acacia* woodlands and hummock grasslands.	1	AW1 47.5 ha	20	100's 50+ 50 10 3 1 Infrequent Common	1
Oxalis sp. Pilbara (P2)	Rocky hillslopes, gorges and drainage lines in woodlands and hummock grasslands.	35	C1 12.0 ha	15	5 2-5 Common	none
Acacia subtiliformis (P3)	Rocky hills, plains frequently associated with calcrete in woodlands and shrublands over hummock grasslands.	108	SS1 82.7 ha	23	4,000 1,000 1,000 50	15

Phoenix (2022)

A.4. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
Western Pebble-mound Mouse (*Pseudomys chapmani*)	Priority 4	Y	Y	Within the application area (Phoenix, 2014)	Y
Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*)	Vu	Y	Y	18 (GIS Database)	Y
Ghost Bat (*Macroderma* gigas)	Vu	Y	Y	15 (GIS Database)	Y
Pilbara Olive Python (*Liasis olivaceous barroni*)	Vu	Y	Y	20 (GIS Database)	Y

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: The flora survey (Phoenix, 2021) within the proposed clearing area identified four Priority flora species, with two species likely to be impacted by the proposed clearing. The previous assessment identified that five conservation significant fauna species occur within the application area, however, four of these species have since been delisted from a conservation status. As such, one Priority fauna species (Western Pebble-mound Mouse – P4) is known to occur within the application area.	Not likely to be at variance *as per CPS 6216/2*	Yes *Refer to Section 3.2.1, above.*
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The area proposed to be cleared contains habitat for the Western Pebble-mound Mouse. The Mallee woodland and spinifex steppe vegetation types are inhabited by the Western Pebble-mound Mouse (Phoenix, 2014). A total of 37 pebble mounds were recorded during the fauna survey, 17 of which were active, suggesting a moderate abundance of this species (Phoenix, 2014). The proposed clearing will remove areas of Western Pebble-mound Mouse habitat, which may impact species abundance on a local scale. However, this species, and its preferred habitat, has a wide distribution across the Pilbara region (Phoenix, 2014). As such, the proposed clearing area is unlikely to be, or form part of, a significant habitat for fauna.	Not likely to be at variance *as per CPS 6216/2*	Yes *Refer to Section 3.2.1, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: One threatened flora species (*Serginia exastia*) was recorded within the application area during the targeted flora survey (Phoenix, 2021), however, this species is undergoing taxonomic changes and is no longer considered threatened due to its wide distribution throughout the Pilbara, Kimberley, Northern Territory and into South Australia. As such, the proposed clearing area is considered to not contain Threatened flora or is necessary for the continued existence of threatened flora.	Not likely to be at variance *as per CPS 6216/2*	Yes *Refer to Section 3.2.1, above.*
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: According to available databases, there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). Similarly, the vegetation survey conducted by G&G (2011) did not identify any of the vegetation recorded as being a TEC.	Not likely to be at variance *as per CPS 6216/2*	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The application area falls within the Pilbara Interim Biogeographic Regionalisation of Australia bioregion, in which approximately 99.6% of the pre-European vegetation remains (see A.2) (Government of Western Australia, 2019; GIS Database). The vegetation within the application area has been mapped as Beard vegetation associations 18, 29 and 82 (GIS Database). Over 90% of these Beard vegetation associations remain at both a state and bioregional level (Government of Western Australia, 2019). Based on aerial imagery, the vegetation within the application area is neither a remnant itself nor does it form part of any remnants within the local area (GIS Database).	Not likely to be at variance *as per CPS 6216/2*	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Based on the above, the additional area proposed to be cleared is not considered significant as a remnant of native vegetation that has been extensively cleared.		
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: According to available databases, the application area does not lie within a conservation area (GIS Database). The nearest conservation area is the Karijini National Park, which is an A Class Nature Reserve (GIS Database). It is located approximately 39 kilometres west of the application area (GIS Database). From this distance, the proposed clearing is not likely to impact the environmental values of the Karijini National Park. Based on the above, the proposed clearing is not likely to impact on environmental values of conservation areas.	Not likely to be at variance *as per CPS 6216/2*	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: A total of five vegetation communities within the application area were recorded in association with drainage lines and are considered to be riparian in nature, including vegetation types C1, C3, C4, C5 and C6. However, the proposed clearing is not likely to impact the conservation of this vegetation community, as the majority of the mapped vegetation types occur outside the application boundary (G&G, 2011). The application area occurs upstream of Weeli Wolli Creek, which may be susceptible to offsite run off. To minimise impacts to the Weeli Wolli Creek system and associated vegetation and to reflect the commitments made by the proponent (section 3.1), a watercourse management condition is recommended. Conditions To address the above impacts, the following management measures will be required as conditions on the clearing permit: • Avoid clearing riparian vegetation (vegetation types C1, C3, C4, C5 and C6) where practicable and maintain existing surface water flow.	At variance *as per CPS 6216/2*	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 lies over three land systems, including the Egerton land system, Newman land system and Rocklea land system (GIS Database). Although the land systems that occur within the application area are not naturally susceptible to erosion, the removal of vegetation on a large scale leads to an increased potential for topsoil erosion and water erosion following heavy rainfall. Land degradation as a result of wind or water erosion may be minimised by the implementation of a staged clearing condition. Condition: To address the above impacts, the following management measures will be required as conditions on the clearing permit: • No clearing of native vegetation unless the purpose for which the clearing is authorised is enacted within 6 months of the authorised clearing being undertaken.	Not likely to be at variance *as per CPS 6216/2*	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:	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
The application area does not occur within a Public Drinking Water Source Area. The application area covers numerous minor, non-perennial watercourses, which are tributaries of the Weeli Wolli spring (Phoenix, 2022; GIS Database). The clearing of native vegetation has the potential to destabilise soils and cause temporary sedimentation to watercourses. To minimise these impacts on the Weeli Wolli Spring system, the clearing permit boundary was originally designed in a way to create an exclusion zone around the tributaries that flow from the application area to Weeli Wolli spring, this exclusion zone is still in place. The surface water management measures proposed (section 3.1) are considered adequate to minimise impacts to surface water within and adjacent to the application area. Groundwater salinity in the local area is slightly alkaline, reaching a maximum 600 milligrams/Litre Total Dissolved Solids (TDS) towards Weeli Wolli Springs (Ascot Resources, 2014), which is considered marginal (GIS Database). On average, groundwater levels are 32 metres below surface water (Ascot Resources, 2014). Given the depth to groundwater, the proposed clearing activity is not likely to cause deterioration of groundwater within the project area. Based on the above, the proposed clearing is not likely to cause deterioration in the quality of surface or groundwater.	*as per CPS 6216/2*	
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: The mean annual rainfall in Newman is approximately 324.4 millimetres (BoM, 2022). The Pilbara region represents a transitional zone between semi-arid and tropical climates, and receives a majority of its rainfall during the summer months (CALM, 2002). It is likely that during times of intense rainfall there may be some localised flooding. The proposed clearing is unlikely to significantly alter the intensity of flooding within the application area or surrounding areas. The application area is located within the Fortescue River Upper catchment area (GIS Database). However, given the size of the area to be cleared (850 hectares) in relation to the size of the catchment area (2,975,192 hectares), the proposed clearing is not likely to increase the potential for flooding in this region (GIS Database).	Not likely to be at variance *as per CPS 6216/2*	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:

Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.

Condition	Description
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Sources of information

D.1. GIS databases

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

- Aboriginal Heritage Places (DPLH-001)
- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- RIWI Act, Groundwater Areas (DWER-034)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- 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

Ascot Resources (2014) Supporting Information for the Native Vegetation Clearing Permit Application 6216/1 - Purpose Permit: Wonmunna Iron Ore Project, Ascot Resources Limited.

Australasian Virtual Herbarium (2019) The Australasian Virtual Herbarium, Council of Heads of Australasian Herbaria. http://avh.chah.org.au/ (Accessed 22 March 2021).

Beard, J.S (1990) Plant Life of Western Australia. Kangaroo Press, Kenthurst, NSW

Binks, R.M., Wilkins, C.F., Markey, A.S., Lyons, M.N. and Byrne, M. (2020) Genomic data and morphological re-assessment reveals synonymy and hybridisation among *Seringia* taxa (Lasiopetaleae, Malvaceae) in remote north-western Australia, TAXON, 69: 307-320 https://doi.org/10.1002/tax.12233

BoM (2022) Climate Statistics for Australian Locations. Climate Statistics for Australian Locations. A Search for Climate Statistics for Newman, Australian Government Bureau of Meteorology.

CALM (2002) Bioregional Summary of the 2002 Biodiversity Audit for Western Australia. Department of Conservation and Land Management, Western Australia.

Department of Biodiversity, Conservation and Attractions (DBCA) (2019) Threatened and Priority Fauna List, updated 14/05/2019. DBCA, Kensington, WA. Available at: https://www.dpaw.wa.gov.au/plants-andanimals/threatened-species-and-communities/threatened-animals

Department of Environment Regulation (DER) (2013) *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf

Department of Planning, Lands and Heritage (DPLH) (2022) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS (Accessed 31 August 2022).

Department of Primary Industries and Regional Development (DPIRD) (2022) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: https://maps.agric.wa.gov.au/nrm-info/ (Accessed 05 September 2022).

Environmental Protection Authority (EPA) (2016) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment. Available from: http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf

Environmental Protection Authority (EPA) (2016) Technical Guidance – Terrestrial Fauna Surveys. Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.pdf

G&G (2011) Flora and Vegetation Survey of the Wonmunna Area - Level 2. Report prepared for Ascot Resources Limited, by G&G Environmental.

Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions. https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Phoenix (2014) Level 2 Vertebrate Fauna Survey for the Wonmunna Iron Ore Project. Report prepared for Ascot Resources Limited, by Phoenix Environmental Sciences Pty Ltd.

Phoenix (2021) Targeted survey for significant flora in proposed additional disturbance footprint of the Wonmunna Iron Ore Project. Prepared for Mineral Resources Limited, by Phoenix Environmental Sciences Pty Ltd, 2021.

Phoenix (2022) Determination of potential impacts to flora, vegetation and fauna to support a Native Vegetation Clearing Permit amendment application. Prepared for Mineral Resources Limited, by Phoenix Environmental Services Pty Ltd, June 2022.

Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. https://florabase.dpaw.wa.gov.au/ (Accessed 07 September 2022).

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)
DAWE	Department of Agriculture, Water and the Environment, 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 DAWE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	*Environmental Protection Act 1986*, Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	*Rights in Water and Irrigation Act 1914*, Western Australia
TEC	Threatened Ecological Community

Definitions:

{DBCA (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.