



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

| | |
|------------------------|-------------------------------------------------------------------------|
| Permit number: | 10133/1 |
| Permit type: | Purpose Permit |
| Applicant name: | Edna May Operations Pty Ltd |
| Application received: | 27 March 2023 |
| Application area: | 3.8 hectares |
| Purpose of clearing: | Mineral production and associated activities |
| Method of clearing: | Mechanical Removal |
| Tenure: | Miscellaneous Licence 77/358, Mining Lease 77/1111, 77/1287, 77/1303 |
| Location (LGA area/s): | Shire of Yilgarn |
| Colloquial name: | Symes Find Gold Project |

1.2. Description of clearing activities

Edna May Operations Pty Ltd (EMO) proposes to clear up to 3.8 hectares of native vegetation within a boundary of approximately 4 hectares, for the purpose of mineral production and associated activities. The project is located approximately 65 kilometres south of Southern Cross, within the Shire of Yilgarn.

The application is to allow for an expansion of an existing open pit historically mined and widening of existing access roads.

1.3. Decision on application and key considerations

| | |
|----------------|-----------------------------------|
| Decision: | Grant |
| Decision date: | 20 July 2023 |
| Decision area: | 3.8 hectares of native vegetation |

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 27 March 2023. DMIRS advertised the application for a public comment for a period of 21 days, and no submissions were received.

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

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values; and
- the loss of a remnant native vegetation and ecological linkage in an area that has been extensively cleared

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

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

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback; and
- revegetation of local provenance native flora species to restore the loss of the remnant vegetation and to re-establish the ecological linkage.

1.5. Site map

A site map of proposed clearing is provided in Figure 1, 2, 3 and 4 below.

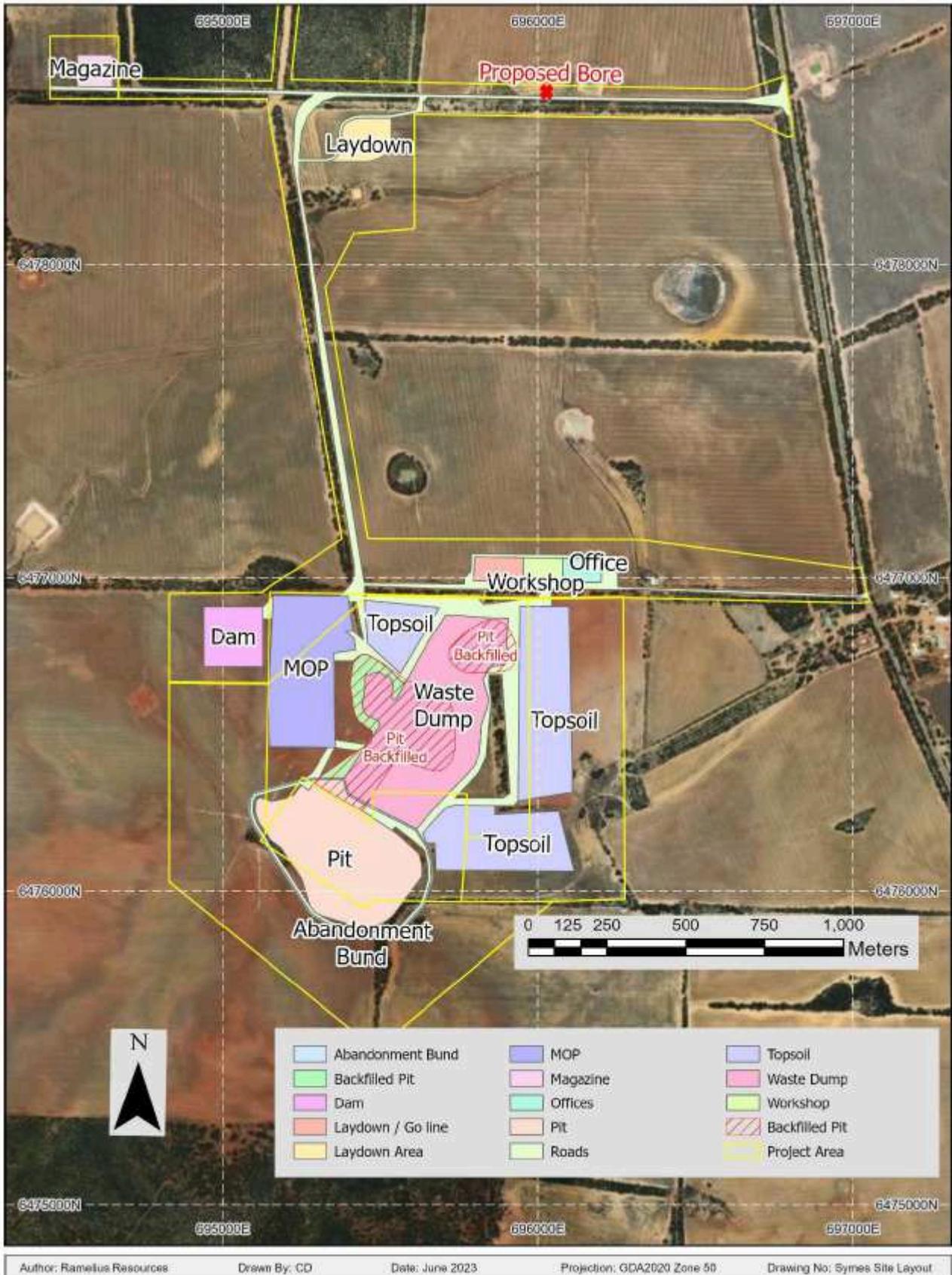


Figure 1. Map of the proposed site layout plan (EMO, 2023c).

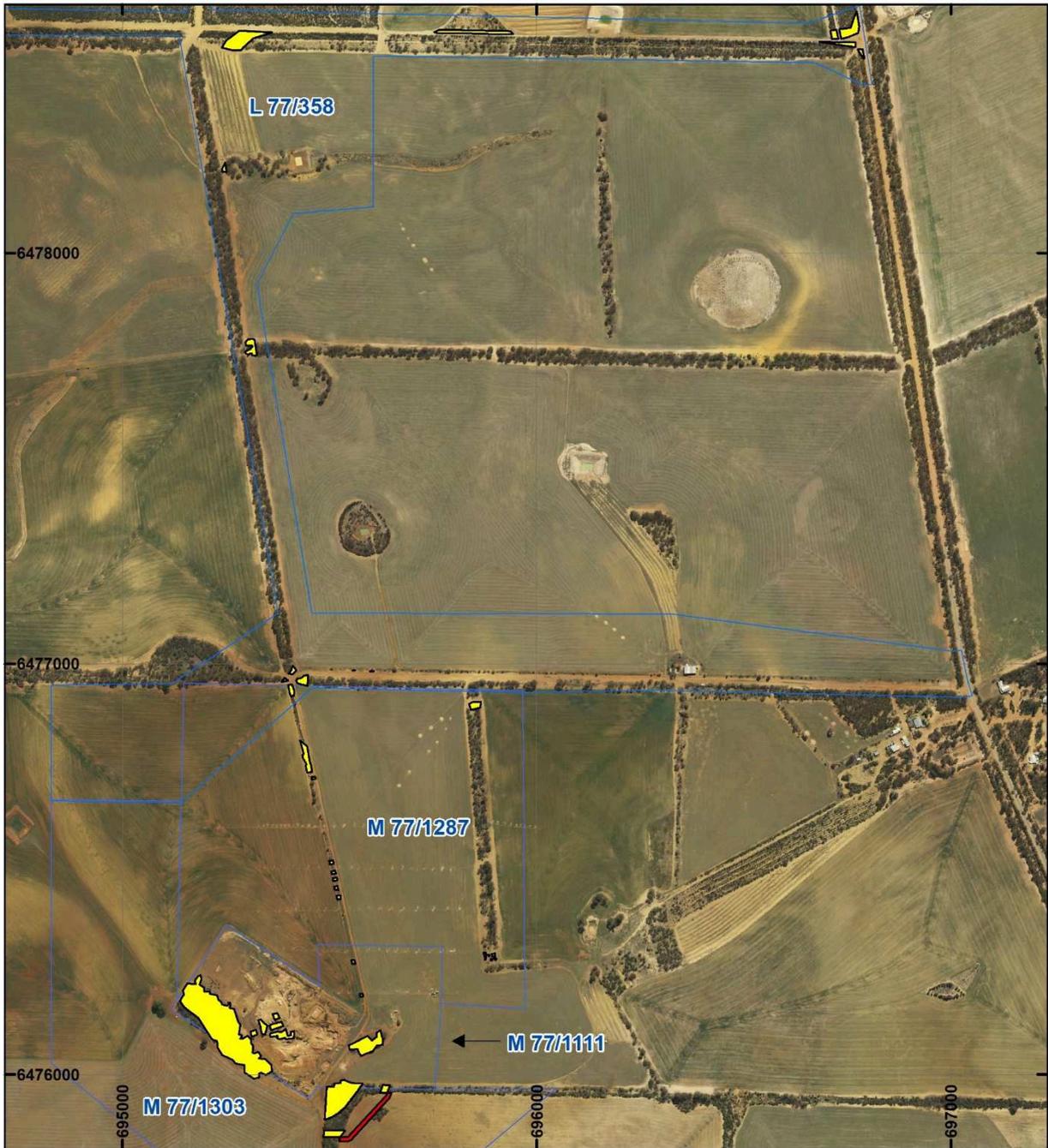


Figure 2. Map of the application area (full extent). The yellow areas indicate where clearing is authorised, and the red area indicates the proposed revegetation activities.



Figure 3. Map of the southern section of the application area and its surroundings. The yellow areas indicate where clearing is authorised, and the red area indicates the proposed revegetation activities to re-establish the ecological linkage to the larger vegetation remnant located south of the application area.



Figure 4. Map of the southern section of the application area indicating the areas approved to clear, proposed revegetation and 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)
- *Country Areas Water Supply Act 1947* (WA) (CAWS 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)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

During the assessment, and following discussions with DMIRS, the applicant has advised the following avoidance and mitigation measures to support this clearing permit application (EMO, 2023a; 2023b):

- Reduced the total amount of clearing proposed and the permit boundary from 7.7 hectares to 3.8 hectares;
- Removed two large trees (diameter \leq 500 millimetres) that are considered potential nesting trees for Black Cockatoo species from the application area;
- Most of the access/haulage road will utilise existing farm roads mitigating the need to clear further vegetation;
- Revegetation of 0.17 hectares of native flora species to re-establish ecological linkage and the loss of remnant native vegetation.

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

3.2. Assessment of impacts on environmental values

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

The assessment against the clearing principles (see Appendix B) identified the impacts of the proposed clearing present a risk to biological values (flora) and significant remnant vegetation (native vegetation in an area that have been extensively cleared). The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (flora) - Clearing Principles (a) and (c)

Assessment

A reconnaissance flora and vegetation survey over the application area and its surroundings was conducted by Botanica Consulting on 27 August 2023, with an additional survey undertaken on 15 May 2023 (Botanica Consulting, 2023a). A total of 92 flora species, from 25 families and 41 genera were recorded within the survey area (Botanica Consulting, 2023a). The most diverse families were Myrtaceae (20 species), Fabaceae (15 species) and Chenopodiaceae (10 species), and the most dominant genera include *Acacia* (13 species), *Melaleuca* (nine species) and *Eucalyptus* (seven species) (Botanica Consulting, 2023b).

During the assessment, and following discussions with DMIRS, the proponent prepared a Memorandum regarding data reconciliation (EMO, 2023b), rectifying the vegetation condition, flora likelihood assessment table, survey effort, and also included further information regarding the habitat characteristics within the application area and their unsuitability to support certain conservation significant flora species. Furthermore, EMO decreased the total amount of clearing since the original application (7.7 hectares to 3.8 hectares), removed potential habitat trees for Black Cockatoo species, and committed to revegetate 0.17 hectares of native vegetation on the southern section of the application area.

The reconnaissance survey and memorandum did not record any conservation significant flora species nor their suitability to be present within the application area (Botanica Consulting, 2022; 2023a; EMO, 2023b). Moreover, drone images provided by the proponent revealed that the majority of the vegetation within the application area is in degraded condition and does not present understorey; therefore, the vegetation is unlikely to support a variety of conservation significant flora species (EMO, 2023b). Further details in relation to pertinent conservation significant flora species are presented in Appendix A.3 Flora Analysis Table.

Four weeds were recorded during the flora and vegetation assessment of the application area, comprised of *Arctotheca calendula* (Cape Weed), *Hypochaeris glabra* (Smooth Cats-ear), *Brassica tournefortii* (Mediterranean Turnip), and *Briza maxima* (Blowfly Grass) (Botanica Consulting, 2023). None of these species are listed as a Declared Pest on the Western Australian Organism List (WAOL) under the Biosecurity and Agriculture Management (BAM) Act 2007 or as a Weed of National Significance (Botanica Consulting, 2023a). Weeds have the potential to out-compete native flora and reduce the biodiversity of an area.

Conclusion

For the reasons set out above, it is considered that the proposed clearing is not likely to have impacts to conservation significant flora species or their habitats. There is potential for weeds being present within the application area and the proposed clearing has the potential to exacerbate the spread of weeds.

Conditions

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

- avoid, minimise to reduce the impacts and extent of clearing; and
- take hygiene steps to minimise the risk of the introduction and spread of weeds.

3.2.2. Significant remnant vegetation (extensively cleared) - Clearing Principles (e)

Assessment

The application area falls within the Avon Wheatbelt Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). This region has been extensively cleared as only approximately 18.51% of the pre-European vegetation still exists in the IBRA Avon Wheatbelt Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as the 1055 Beard vegetation association, generally comprised of shrublands, York gum & *Eucalyptus sheathiana* mallee scrub (GIS Database). Approximately 13.34% of the pre-European extent of this vegetation association remains uncleared at the state and bioregional level, respectively (see Appendix A.2. Vegetation Extent; Government of Western Australia, 2019). Therefore, the proposed project is located below the 30 percent threshold level recommended in the National Objectives and Targets for Biodiversity Conservation, below which, species loss appears to accelerate exponentially at an ecosystem level (EPA, 2000).

Spatial data indicates that the local area (10 kilometre radius) retains approximately of 47% vegetation (GIS Database). Furthermore, given the scale and extent of the proposed activities (3.8 hectares) consisted of small blocks of sparse vegetation, generally in degraded condition and lacking understorey, the application area does not represent a significant remnant vegetation itself but it can be considered part of a larger remnant in the local area (GIS Database).

The southern section of the application area is part of a vegetation corridor that connects to a large remnant of native vegetation located further south, see map in section 1.5 (GIS Database). The proposed clearing will sever vegetation linkage to this southern vegetation, which could reduce connectivity for fauna, especially avifauna, and increase edge effects. This fragmentation would reduce the ecological linkage and value of part of the remnant vegetation in a region already highly fragmented and extensively cleared for agricultural purposes. Fragmentation and isolating populations of flora and vegetation from each other can impact the survival of populations, species and even ecosystems (EPA, 2016). In order to minimise the loss of connectivity, EMO (2023b; 2023c) proposed to revegetate a narrow section on Mining Lease 77/1303 located south of the application area, which is currently cleared for farmland. Rehabilitation of this section will mitigate impacts of the vegetation fragmentation, and aims to re-establish the ecological linkage disrupted by the proposed activities (EMO, 2023b; 2023c).

The native vegetation within the application area and its surroundings were historically cleared for farmland, and the dryland salinity was one of the main issues impacting farmlands (EMO, 2023c). Consequently, one of the management measures to combat salinity was to revegetate some areas (EMO, 2023c). Although the flora and vegetation surveys did not record species consistent with the broad-scale mapping of the beard vegetation association, the flora species within the application area are still native endemics.

Conclusion

Based on the above assessment, the proposed clearing will impact an ecological linkage to a significant remnant of vegetation in a highly cleared area. Impacts from the clearing of remnant vegetation can be minimised by ensuring that a corridor of vegetation is re-established following the completion of mining activities.

Conditions

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

- Revegetation of connecting corridor of the remnant vegetation.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 23 June 2023 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (WC2017/007) over the area under application (DPLH, 2023). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the 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, 2023). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:

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

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

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Appendix A. Site characteristics

A.1. Site characteristics

| Characteristic | Details |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Local context | The project is located approximately 65 kilometres southwest of Southern Cross, within the Shire of Yilgarn in the intensive land use zone (GIS Database). It is surrounded by farmland and part of the application area contributes to an important linkage to remnant vegetation in a highly cleared landscape (GIS Database). |
| Ecological linkage | The southern section of the proposed clearing was deemed part of an important linkage to a larger vegetation remnant to the south of the application area within an extensively cleared vegetation (refer to section 1.5 for site map) (GIS Database). The proposed clearing is likely to sever the linkage functionality. |
| Conservation areas | The application area is approximately 2.5 kilometres south of the Mount Hampton Nature Reserve (GIS Database). |
| Vegetation description | <p>The vegetation of the application area is broadly mapped as the 1055 Beard vegetation association, generally comprised of, but not limited to shrublands, York gum & <i>Eucalyptus sheathiana</i> mallee scrub (GIS Database).</p> <p>A reconnaissance flora and vegetation survey was conducted over the application area by Botanica Consulting (2023a). Based on vegetation mapping undertaken by Botanica Consulting (2023a), the following vegetation communities occur within the application area:</p> <p>CLP-EW1 – <i>Eucalyptus</i> low woodland: <i>Eucalyptus salubris</i>, <i>E. longicornis</i> and <i>E. celastroides</i> subsp. <i>virella</i> low woodland over <i>Acacia hemiteles</i>, <i>Melaleuca pauperiflora</i> subsp. <i>fastigiata</i> and <i>M. sheathiana</i> tall shrubland over <i>Exocarpos aphyllus</i>, <i>Eremophila decipiens</i> subsp. <i>decipiens</i> and <i>Lycium australe</i> open shrubland over <i>Austrostipa elegantissima</i> open hummock grassland;</p> <p>CLP-EW2 – <i>Eucalyptus</i> open woodland: <i>Acacia salubris</i>, <i>E. longicornis</i> and <i>E. salmonophloia</i> open woodland over <i>Acacia acuminata</i>, <i>A. colletioides</i> and <i>A. erinacea</i> tall shrubland over <i>Eremophila drummondii</i>, <i>E. ionantha</i> and <i>Lycium australe</i> open shrubland over <i>Austrostipa elegantissima</i> open hummock grassland;</p> <p>CLP-MWS1 – <i>Eucalyptus</i> low mallee woodland: <i>Eucalyptus longicornis</i> and <i>Allocasuarina campestris</i> low mallee woodland over <i>Acacia hemiteles</i>, <i>A. acuminata</i> and <i>A. erinacea</i> shrubland over <i>Olearia muelleri</i>, <i>O. pimeleoides</i> and <i>Westringia rigida</i> low open shrubland;</p> <p>SLP-EW1 – <i>Eucalyptus</i> woodland: <i>Eucalyptus salmonophloia</i>, <i>E. salubris</i> and <i>E. eremophila</i> subsp. <i>eremophila</i> woodland over <i>Melaleuca hamata</i>, <i>M. lateriflora</i> subsp. <i>lateriflora</i> and <i>Hakea pendens</i> tall shrubland over <i>Eremophila decipiens</i> subsp. <i>decipiens</i>, <i>E. ionantha</i> and <i>E. scoparia</i> open shrubland; and</p> <p>SLP-MW1 – <i>Eucalyptus</i> mallee woodland: <i>Eucalyptus transcontinentalis</i>, <i>E. eremophila</i> subsp. <i>eremophila</i> and <i>Callitris preissii</i> low open woodland over <i>Acacia enervia</i> subsp. <i>enervia</i>, <i>A. camptoclada</i> and <i>Pityrodia lepidota</i> open shrubland over <i>Westringia rigida</i>, <i>W. cephalantha</i> var. <i>caterva</i> and <i>Triodia scariosa</i> low open shrubland/hummock grassland.</p> <p>Part of the project is within cleared areas of an existing open mine pit.</p> |
| Vegetation condition | <p>The vegetation survey conducted by Botanica Consulting (2022) was rectified and the updated survey (2023a) indicates the vegetation within the proposed clearing area is in a good condition to completely degraded (Keighery, 1994), described as:</p> <ul style="list-style-type: none"> • 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. To: • 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. <p>The full Keighery (1994) condition rating scale is provided in Appendix C.</p> |
| Climate and landform | The application area is mapped within elevations of 400 to 410 meters AHD (GIS Database). The climate of the region is semi-desert tropical, and the annual rainfall average of approximately 302 millimetres (BoM, 2023). |
| Soil description & Land degradation risk | The soil is mapped as part of the following subsystems (DPIRD, 2023): |

| Characteristic | Details |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <ul style="list-style-type: none"> Holleton 3 Undifferentiated phase (258Hn_3u): Undifferentiated slopes. Mainly alkaline to neutral duplexes (sand, loam & gravel phases) & fresher gradational soils. Minor heavy soils on lower slopes & ironstone gravels; Holleton Sandplain subsystem (258Hn_1): Lateritic gravels on crests of low isolated often mafic hills flanked by earthy reddish yellow loamy lateritic earths, denuded lateritic profiles and alkaline red loamy duplexes; Kellerberrin hydroaeolian subsystem (258Kb_2): Various alluvial and aeolian deposits adjacent to Playa lakes; and Tandegin 2 subsystem (258Ta_2): Very smoothly undulating sandy aeolian deposits on uplands located directly south east of valley sources, comprising deep yellow sands and earths with gravels forming from recent lateritisation, typically vegetated by Grevillea thicket. <p>The mapped soils present nil to moderate risk to flooding, water or wind erosion (DPIRD, 2023).</p> |
| Waterbodies & Hydrogeography | The desktop assessment and aerial imagery indicated that no perennial or ephemeral watercourses transect the area proposed to be cleared (GIS Database). The application area is located within the Westonia Groundwater Area (RIWI Act); however, it is not within a Public Drinking Water Source Area (GIS Database). The mapped groundwater salinity is 14000 - 35000 milligrams per litre total dissolved solids which is described as saline (GIS Database). |
| Flora | Desktop analysis identified numerous conservation significant flora species with the potential to occur within the application area (Botanica Consulting, 2023a; EMO, 2023c; GIS Database). However, the reconnaissance survey undertaken by Botanica Consulting (2023a) did not record any conservation significant species within the application area. |
| Ecological communities | There are no mapped Threatened or Priority Ecological Communities (TEC/PEC) within the application area (Botanica Consulting, 2023b; GIS Database). The closest TEC is the Eucalypt woodlands of the Western Australian Wheatbelt located approximately 4.4 kilometres north of the application area. |
| Fauna | A basic fauna survey undertaken by Terrestrial Ecosystems (2023) over the application area did not identify any conservation significant fauna species. The survey recorded two large Salmon gum, one which presented hollows of 200 and 180 millimetres in diameter (Terrestrial Ecosystem, 2023). Despite the lack of evidence of Black Cockatoo presence on these trees, they have the potential to be suitable nesting habitat for these species in the future. These trees were retrieved from the application area (EMO, 2023b). The proposed clearing is not likely to impact habitats for conservation significant species (Terrestrial Ecosystems, 2023). |

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 - Avon Wheatbelt | 9,517,109.95 | 1,761,187.42 | 18.51 | 2.42 | 1.84 |
| IBRA Subregion - Merredin | 6,524,180.55 | 1,367,565.48 | 20.96 | 126,804.59 | 1.94 |
| Beard vegetation associations - State | | | | | |
| 1055 | 136,168.62 | 18,159.95 | 13.34 | 1,291.38 | 0.95 |
| Beard vegetation associations - Bioregion | | | | | |
| 1055 | 136,168.62 | 18,159.95 | 13.34 | 0.96 | 0.95 |
| Beard vegetation associations - subregion (Merredin) | | | | | |
| 1055 | 136,168.62 | 18,159.95 | 13.34 | 1,291.38 | 0.95 |

Government of Western Australia (2019)

A.3. Flora analysis table

Flora analysis of records within 30 kilometres and their likelihood of occurrence (Botanica Consulting, 2022; 2023a).

| Status | | | Taxon | Habitat | Assessment | Likelihood (pre-survey) | DMIRS Likelihood Analysis | Botanica Consulting rectification and analysis post-survey |
|--------|--------|------------|--------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------|-------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EPBC | BC Act | DBCA | | | | | | |
| VU | VU | Threatened | <i>Banksia dolichostyla</i> (A.S.George) K.R.Thiele | Lateritic gravel, grey sand. | At extreme of known range, habitat unlikely to be present. | Unlikely | Likely | Having the additional information on habitat types, as noted by the DMIRS, potentially influences the assessment outcome. However, the assessment is based on the information available to BC at the time of writing the report i.e. BC only had access to records within 30km of the application area. These records were provided to BC by the DBCA. The only habitat descriptions available were "Lateritic gravel" and "grey sand". Jim Williams has observed this plant growing on banded ironstone, laterite and/or weathered ironstone. Slightly rocky banded ironstone, weathered banded ironstone outcrop with red-brown skeletal sandy loam soils. This type of habitat was not found in the application area. |
| EN | EN | Threatened | <i>Eremophila resinosa</i> | Clay loam, gravelly sandy clay. Road verges. | Outside known range of species | Unlikely | Likely | This species was identified via the EPBC protected matters search which identified the "Species or species habitat likely to occur within area". The nearest populations of <i>E. resinosa</i> according to Florabase are north of the Great Eastern Highway at Westonia. BC consider the application area is outside the range of the species. |
| - | - | P1 | <i>Eremophila adenotricha</i> | Red/brown earth, clay. | Within known range, habitat may be present | Possible | Possible | From studying Florabase and DBCA records, <i>Eremophila adenotricha</i> appears to be localised to an area approximately 13km south of the application area, apart from a single record north of the Great Eastern Highway. From the photos on Florabase, its habitat looks distinctive and during a survey it is likely it would 'stand out' as being very different from other <i>Eremophila</i> species. BC have previously observed this species growing under Mixed open Eucalyptus woodland over moderately dense shrubland, (<i>Eucalyptus salubris</i> , <i>Grevillea acuaria</i> , <i>Acacia merrallii</i> , <i>Philotheca falcata</i>), this vegetation type does occur in the survey area but the understorey has been removed by grazing. It is interesting to note that this species does well in disturbed sites and then the population declines to low numbers. After further consideration BC probably should have listed this as unlikely based on its localised distribution to the south. From the photos on Florabase, its habitat looks distinctive and during a survey it is likely it would 'stand out' as being very different from other <i>Eremophila</i> species. Although a targeted search was not undertaken specifically for these species, BC has previously observed this species growing under Mixed open Eucalyptus woodland over moderately dense shrubland, (<i>Eucalyptus salubris</i> , <i>Grevillea acuaria</i> , <i>Acacia merrallii</i> , <i>Philotheca falcata</i>). This vegetation type does occur in the survey area but the understorey has been removed by grazing. In the event that the species was present, even without the understorey, BC is confident that it would have been identified in the surveys. |
| - | - | P1 | <i>Leucopogon</i> sp. <i>Yellowdine</i> (M. Hislop & F. Hort MH 3194) | Plain. Yellow sand. | Outside known range of species | Unlikely | Likely | Agreed, after reconsideration BC considers it may be likely. A taxonomic review of the <i>Styphelia tamminensis</i> subgroup (Ericaceae: Epacridoideae: Styphelieae) in Hislop, M. and Nguyen, H.K., <i>Nuytsia</i> 33: 275–320 (2022) records that Hislop identified the species approximately 10km from the survey area on a road side collection in a disturbed gravel pit location. It is noted to be restricted in distribution and is affected by grazing which provides context as to why it is not present within the degraded habitat of the survey area. The species typically flowers from July to August. BC botanists are confident it would have been identified if present in the August 2022 survey area. |
| - | - | P2 | <i>Acacia lilellata</i> subsp. <i>compressa</i> | Yellow sand, clayey loam. | At extreme of known range, habitat | Unlikely | Possible | Agreed, after reconsideration BC considers it may be likely. With the first survey conducted in August 2022, and this species expected to be in flower at this time, together with the lack of understorey in this area, the species would have been easily identifiable. BC have experience identifying this species and are confident that although it is likely to be found in |

| | | | | | | | | |
|---|---|----|--------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | Sandplains | unlikely to be present | | | this soil type, given the degraded condition of the vegetation community, this species is not present in the survey area. BC are confident this species would have been identified if present, particularly as the area was surveyed during the flowering season for this species.. |
| - | - | P2 | <i>Conostylis albescens</i> | Yellow sand. Sandplains. | Within known range, habitat may be present | Possible | Likely | The likelihood of the species being found in this habitat and soil type is possible. However, given that the understory of this area is degraded by grazing provides reasoning for why this species was not identified during the survey. Furthermore, the species would have likely been in flower during the survey period, although not a targeted survey specific for this species, the survey area is small (with much of the area being cleared farmland) and therefore, BC is confident that adequate survey effort was allocated to identifying species within this vegetation type. |
| - | - | P2 | <i>Verticordia multiflora subsp. solox</i> | Yellow sand over gravel, sand over granite. | Within known range, habitat unlikely to be present | Unlikely | Likely | Agreed, after reconsideration BC considers it may be likely to occur in this habitat but is unlikely to occur in the survey area due to the degraded condition as a result of grazing, also there are no massive granites within the survey area which is the preferred habitat for this species. This species is a distinctly identifiable plant and BC have experience identifying this species and are confident that it would have been identified if it was present in the survey area particularly as the areas was surveyed during the flowering season for this species. |
| - | - | P2 | <i>Verticordia pulchella</i> | Sandy soils over granite. Massive granite areas. | Within known range, habitat may be present | Possible | Likely | The preferred habitat for this species is over massive granites. There were no massive granites within the survey area and therefore there is no suitable habitat for this species within the application area. Although a targeted survey was not undertaken to specifically identify this species, given that there is no suitable habitat justifies why this species was not identified within the survey area. |
| - | - | P3 | <i>Banksia rufa subsp. flavescens</i> | Sandy loam or sand with gravel. | Within known range, habitat may be present | Possible | Likely | From studying Florabase and DBCA records, <i>Banksia rufa</i> subsp. <i>flavescens</i> appears to be mostly localised to an area approximately 100km south of the application area, apart from three outlier records including one approximately 28km north west of the application area. From the photos on Florabase, its habitat looks distinctive and during a survey it is likely it would 'stand out' as being very different from other Banksia species. BC is also very familiar with this species having surveyed it in the area to the south. After further consideration BC probably should have listed this as unlikely based on its localised distribution to the south. |
| - | - | P3 | <i>Eucalyptus exigua</i> | Sandy loam, white sand. Sandplains. | At extreme of known range, habitat unlikely to be present | Unlikely | N/A | After reviewing the DBCA records of Threatened and Priority flora, this species is not recorded within 30km of the application area, therefore this species should not have been included this table. |

| | | | | | | | | |
|---|---|----|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| - | - | P3 | <i>Hibbertia glabriuscula</i> | Yellow sand over laterite. Sandplains with some laterite breakaways. | Outside known range of species | Unlikely | Possible | Agreed, after reconsideration BC considers it may be likely. BC has experience identifying this plant as it is erect, spindly shrub, 0.2-0.5 m high. With a flowering period in September with a habitat of yellow sand over laterite breakaways. In the Avon Wheatbelt region, this species often prefers laterite breakaways and this habitat does not occur within the survey area. Again, this species has a distinct flower and would have been easily identifiable to the two experienced botanists if it was present within the survey area. It is important to remember that much of the understory and midstorey of this vegetation type has been removed by grazing. This explains why some species, although likely to occur in these types of habitats where the habitat is "suitable habitat" are not present within the survey area which is represented by degraded habitat. |
| - | - | P3 | <i>Styphelia subglauca</i> Hislop | Skeletal sand, yellow sandy loam, rocky loam, gravel, laterite, ironstone. Gentle lower slopes, flat uplands, hill tops. | Within known range, habitat unlikely to be present | Unlikely | Likely | Agreed, after reconsideration BC considers it may be likely within the soil types. However, this species preferred habitat is on slopes and hill tops. BC has experience identifying this species which has distinct foliage and flowering. BC is confident that this species would have been identified in the August 2022 survey if it was present within the survey area. Again, although likely to be found in this habitat, the survey area represents a degraded vegetation condition. |
| - | - | P3 | <i>Prostanthera nanophylla</i> | Yellow sand over laterite, rocky loam. Sandplains. | Outside known range of species | Unlikely | N/A | After reviewing the DBCA records of Threatened and Priority flora, this species is not recorded within 30km of the application area, therefore this species should not have been included in this table. |
| - | - | P3 | <i>Verticordia mitodes</i> | Yellow sand. Undulating plains. | Within known range, habitat may be present. | Possible | Possible | This species is possible given that there is suitable habitat. BC has experience identifying this species which has easily recognisable magenta flowers. The species would have been likely to be in flower during the August 2022 survey period and given the small survey area, which was inspected on foot, BC is confident that sufficient survey effort was applied to this vegetation community. However, this species can flower later in spring although even when not in flower, this species is recognisable to the experienced BC botanists. Although the habitat type is found within the survey area, the most likely reason that this species is not found is due to rabbits grazing. It is interesting to note that grazing by rabbits can cause damage to <i>Verticordia</i> species which prevents regeneration of the plant. |
| - | - | P3 | <i>Verticordia stenopetala</i> | Yellow sand, sometimes with gravel. Undulating plains. | Within known range, habitat may be present. | Possible | Possible | This species is possible given that there is suitable habitat. Again BC has experience identifying <i>Verticordia</i> species and although it is possible that this species is found in this habitat type within the Avon Wheatbelt region, it is likely that this species has succumbed to rabbit grazing. BC is confident that this species would have been identified in the survey if it was present within the survey area. Given the abundance of rabbits in the survey area, it is not unexpected that this species is not present. |

| | | | | | | | | |
|---|---|----|-------------------------------|---------------------------------------------------------------|---------------------------------------------|----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| - | - | P4 | <i>Banksia shanklandiorum</i> | White/yellow sand with lateritic gravel. | Within known range, habitat may be present. | Possible | Likely | This species is possible given that there is suitable habitat. This species is a dense shrub and typically forms the mid storey vegetation and would be expected to have been in flower during the August survey of the application area. This species, like most of the understory and mid storey of this vegetation type has been heavily grazed by sheep. BC would have identified the species if it was present within the survey area. The degraded condition of this vegetation community accounts for low representation of "possible" species within the survey area. |
| - | - | P4 | <i>Eremophila racemosa</i> | Sandy or stony loam, clay loam. Undulating plains, roadsides. | Outside known range of species | Unlikely | Likely | From studying Florabase and DBCA records, <i>Eremophila racemosa</i> appears to be mostly localised to an area approximately 100km south of the application area, apart from one outlier record approx 14km south of the application area. From the photos on Florabase, its habit looks distinctive and during a survey it is likely it would 'stand out' as being very different from other <i>Eremophila</i> species. Jim Williams is also very familiar with this species having surveyed it in the area to the south. After further consideration BC still considers this as unlikely based on its localised distribution to the south. |

A.4. Fauna analysis table

Assessment of the potential presence of a conservation significant fauna species in the region and potential impact on each species through vegetation clearing.

| Species | Status under the BC Act and DBCA priority species list | Status under Commonwealth EPBC Act | Comment on the potential presence of a species in the region |
|---------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Night Parrot <i>Pezoporus occidentalis</i> | Endangered | Critically Endangered | Not present due to a lack of suitable habitat and lack of regional records. |
| Carnaby's Black-Cockatoo <i>Calyptrorhynchus latirostris</i> | Endangered | Endangered | May very occasionally forage in the vicinity of the project areas, but there was no evidence of foraging, roosting or breeding activity. |
| Malleefowl <i>Leipoa ocellata</i> | Vulnerable | Vulnerable | The Malleefowl is present in the region, but not present in the project areas. |
| Chuditch <i>Dasyurus geoffroii</i> | Vulnerable | Vulnerable | The Chuditch is present in the region, but not present in the project areas. |
| Grey Falcon <i>Falco hypoleucos</i> | Vulnerable | Vulnerable | Highly unlikely to be recorded in the region. |
| Fork-tailed Swift <i>Apus pacificus</i> | Migratory | Migratory | May very infrequently be seen flying in the region. |
| Grey Wagtail <i>Motacilla cinerea</i> | Migratory | Migratory | Highly unlikely to be seen in the region. |
| Central Long-eared bat <i>Nyctophilus major tor</i> | P3 | | May roost in the tree hollows in the region. |
| Western Rosella (inland form) <i>Platycercus icterotis xanthogenys</i> | P4 | | May infrequently be seen in the remnant bushland in the region. |
| Western Brush Wallaby <i>Notamacropus irma</i> | P4 | | May infrequently be seen in the remnant bushland in the region. |
| Peregrine Falcon <i>Falco peregrinus</i> | OS | | May infrequently be seen in the remnant bushland in the region. |

Appendix B. Assessment against the clearing principles

| Assessment against the clearing principles | Variance level | Is further consideration required? |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------|
| Environmental value: biological values | | |
| <p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>According to Botanica Consulting (2022; 2023a) and further information submitted in response to numerous queries regarding the survey reports, no conservation significant flora species were identified or deemed likely to occur within the application area due to its vegetation condition and lack of understorey.</p> <p>No Threatened or Priority Ecological Communities were identified within the application area (Botanica Consulting, 2022; GIS Database).</p> | Not likely to be at variance | Yes <i>Refer to Section 3.2.1, above.</i> |
| <p><u>Principle (b):</u> "Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."</p> <p><u>Assessment:</u></p> <p>A basic fauna survey was conducted in May, by Terrestrial Ecosystems (2023), over the application area did not record conservation significant fauna species neither significant habitats.</p> <p>Two large trees with diameter at breast height (DBH) ≥ 500 millimetres (mm) were identified during the survey (Terrestrial Ecosystems, 2023). One of them present two vertical hollows approximately 10 metres from the ground measuring 200 mm and 180 mm in diameter (Terrestrial Ecosystems, 2023). The survey did not record signs of Black Cockatoos species using these trees rather than Galah chew marks (Terrestrial Ecosystems, 2023).</p> <p>Regardless of the current lack of evidence of Black Cockatoos, these trees are considered to be potential nesting trees for Black Cockatoo species (DCCEEW, 2022). However, the application area does not contain foraging species for Black</p> | Not likely to be at variance | No |

| Assessment against the clearing principles | Variance level | Is further consideration required? |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------|
| <p>Cockatoo species, and according to available database, the application area is situated at their extreme known range of occupancy (GIS Database).</p> <p>After conversations with DMIRS, the proponent removed these trees (located at 696750mE, 6478537mN and 695313mE, 6477778mN) from the application area and excised some areas as advised by the survey, reducing the permit boundary and the potential impacts to Black Cockatoo species.</p> <p>The proponent advised that site personnel have been briefed about the restrictions of clearing native vegetation at the project area and an additional layer of internal approvals has been implemented (EMO, 2023b)</p> | | |
| <p>Principle (c): <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>There are no known records of Threatened flora within the application area (GIS Database). The reconnaissance flora survey and further information provided by the proponent, confirmed no species of Threatened flora were identified within the application area (Botanica Consulting, 2022; 2023a; 2023b).</p> <p>The vegetation proposed to be cleared is not expected to support any species of Threatened flora (GIS Database).</p> | Not likely to be at variance | Yes <i>Refer to Section 3.2.1, above.</i> |
| <p>Principle (d): <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>There are no known Threatened Ecological Communities (TECs) located within application area (Botanica Consulting, 2023a; GIS Database).</p> <p>An assessment against the Eucalypt Woodlands of the Western Australian Wheatbelt TEC were conducted by Botanica Consulting (2022), which identified that the Eucalyptus Woodlands within the application area do not meet minimum requirements for size and condition under the <i>Approved Conservation Advice</i> guidelines (EPBC, 2015).</p> <p>A flora and vegetation survey of the application area did not identify any TECs (Botanica Consulting, 2023a).</p> | Not likely to be at variance | No |
| Environmental value: significant remnant vegetation and conservation areas | | |
| <p>Principle (e): <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of native vegetation in the local area is inconsistent with the national objectives and targets for biodiversity conservation in Australia (Commonwealth of Australia, 2001). The vegetation proposed to be cleared is considered to be part of a significant ecological linkage in the local area.</p> | At variance | Yes <i>Refer to Section 3.2.2, above.</i> |
| <p>Principle (h): <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>The closest area of conservation significance is the Mount Hampton Nature Reserve, located approximately 2.4 kilometres north of the application area (GIS Database). The proposed clearing is unlikely to have an impact on the environmental values of this Nature Reserve or other nearby conservation areas.</p> | Not likely to be at variance | No |
| Environmental value: land and water resources | | |
| <p>Principle (f): <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>Given no water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality (GIS Database).</p> | Not likely to be at variance | No |

| Assessment against the clearing principles | Variance level | Is further consideration required? |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------|
| <p><u>Principle (g):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</p> <p><u>Assessment:</u></p> <p>According to Appendix A.1, the mapped soil subsystems within the application area present nil to moderate risk to flooding, water or wind erosion (DPIRD, 2023). Therefore, appreciable land degradation is unlikely to occur.</p> | Not likely to be at variance | No |
| <p><u>Principle (i):</u> “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.”</p> <p><u>Assessment:</u></p> <p>Given no permanent water courses, wetlands, or Public Drinking Water Source Areas are recorded within the application area (GIS Database), the proposed clearing is unlikely to impact surface or ground water quality.</p> <p>Botanica Consulting (2023a) declared that there are no known aquatic or terrestrial Groundwater Dependent Ecosystems (GDE) within the assessment area. However, the survey acknowledges that the vegetation type comprised of shrublands, York gum & <i>Eucalyptus sheathiana</i> mallee scrub within the application area was classified as low potential terrestrial GDE (Botanica Consulting, 2023a).</p> | Not likely to be at variance | No |
| <p><u>Principle (j):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment:</u></p> <p>There are no permanent water courses or waterbodies within the application area (GIS Database). The proposed clearing of 3.8 hectares is not likely to cause an increase in the incidence or intensity of flooding in the local area. Therefore, the application area is unlikely to cause an incidence or increase intensity of flooding.</p> | Not likely to be at variance | No |

Appendix C. Vegetation condition rating scale

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

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

- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Pre-European Vegetation Statistics
- Interim Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

- Black Cockatoo WTBC Breeding
- Black Cockatoo FRTBC Breeding
- Black Cockatoo BC Roosts
- Black Cockatoo BC Feeding SCP
- Black Cockatoo Feeding JF
- Black Cockatoo Feeding Areas Buffered
- Black Cockatoo Baudins Distribution
- Black Cockatoo Forest Red Tail Distribution
- Black Cockatoo Carnabys Distribution
- 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

- Botanica Consulting (2022) Reconnaissance Flora and Vegetation Assessment. Report prepared for Edna May Operations Pty Ltd by Botanica Consulting, September 2022.
- Botanica Consulting (2023a) Reconnaissance Flora and Vegetation Assessment. Report prepared for Edna May Operations Pty Ltd by Botanica Consulting, May 2023.
- Botanica Consulting (2023b) Environment Assessment – Symes Find Project – Clearing Permit Application L77/358, M77/1111, M77/1287, M77/1303. Report prepared for Edna May Operations Pty Ltd by Botanica Consulting, March 2023.
- Bureau of Meteorology (BoM) (2023) Bureau of Meteorology Website – Climate Data Online, Southern Cross Airfield Station. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 5 June 2023).
- Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.
- Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2022) Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black-cockatoo, Department of Agriculture, Water and the Environment, Canberra, February.
- Department of Environment Regulation (DER) (2014) *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 Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources an Environment, Victoria.
- Department of Planning, Lands and Heritage (DPLH) (2023) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 5 July 2023).

- Department of Primary Industries and Regional Development (DPIRD) (2023) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: <https://dpiird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f> (Accessed 5 July 2023).
- Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.pdf
- Edna May Operations Pty Ltd (EMO) (2023a) Application for Purpose Permit CPS 10133/1 (Symes Find Project) – Form NV F01.
- Edna May Operations Pty Ltd (EMO) (2023b) Memorandum – Final Response to Queries CPS 10133/1 – Symes Find Project. Letter prepared by Edna May Operations Pty Ltd and Botanica Consulting, 14 July 2023.
- Edna May Operations Pty Ltd (EMO) (2023c) Revegetation Plan Symes Find Gold Project. Prepared as supporting document for Native Vegetation Clearing Permit Application CPS 10133/1. Prepared by Edna May Operations Pty Ltd, July 2023.
- Environmental Protection Authority (EPA) (2000) Environmental Protection of Native Vegetation in Western Australia. Clearing of Native Vegetation, with Particular Reference to the Agricultural Area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.
- Environmental Protection Authority (EPA) (2016) Environmental Factor Guideline: Flora and Vegetation, EPA, Western Australia.
- 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) (2020) Technical Guidance – Terrestrial Fauna Surveys. Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/2020.09.17%20-%20EPA%20Technical%20Guidance%20-%20Vertebrate%20Fauna%20Surveys%20-%20Final.pdf
- EPBC (2015) *Approved Conservation Advice (including listing advice) for the Eucalypt Woodlands of the Western Australian Wheatbelt*. Conservation Advice approved 26 November 2015, Listing effective: 4 December 2015.
- Government of Western Australia (2019) 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.
- Terrestrial Ecosystems (2023) Desktop and targeted vertebrate fauna survey and assessment for the Symes Find Project. Prepared for Edna May Operations Pty Ltd by Terrestrial Ecosystems, June 2023.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 28 June 2023).

4. Glossary

Acronyms:

| | |
|-----------------|---------------------------------------------------------------------------------------------------------------------------|
| BC Act | <i>Biodiversity Conservation Act 2016</i> , Western Australia |
| BoM | Bureau of Meteorology, Australian Government |
| DAA | Department of Aboriginal Affairs, Western Australia (now DPLH) |
| DAFWA | Department of Agriculture and Food, Western Australia (now DPIRD) |
| DCCEEW | Department of Climate Change, Energy, the Environment and Water, Australian Government |
| DBCA | Department of Biodiversity, Conservation and Attractions, Western Australia |
| DER | Department of Environment Regulation, Western Australia (now DWER) |
| DMIRS | Department of Mines, Industry Regulation and Safety, Western Australia |
| DMP | Department of Mines and Petroleum, Western Australia (now DMIRS) |
| DoEE | Department of the Environment and Energy (now DCCEEW) |
| DoW | Department of Water, Western Australia (now DWER) |
| DPaW | Department of Parks and Wildlife, Western Australia (now DBCA) |
| DPIRD | Department of Primary Industries and Regional Development, Western Australia |
| DPLH | Department of Planning, Lands and Heritage, Western Australia |
| DRF | Declared Rare Flora (now known as Threatened Flora) |
| DWER | Department of Water and Environmental Regulation, Western Australia |
| EP Act | <i>Environmental Protection Act 1986</i> , Western Australia |
| EPA | Environmental Protection Authority, Western Australia |
| EPBC Act | <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act) |
| GIS | Geographical Information System |
| ha | Hectare (10,000 square metres) |
| IBRA | Interim Biogeographic Regionalisation for Australia |
| IUCN | International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union |
| PEC | Priority Ecological Community, Western Australia |
| RIWI Act | <i>Rights in Water and Irrigation Act 1914</i> , Western Australia |

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.