



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

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|------------------------|---|
| Permit number: | 9579/1 |
| Permit type: | Purpose Permit |
| Applicant name: | Bullfinch Radio Pty Ltd |
| Application received: | 02 February 2022 |
| Application area: | 32.92 hectares |
| Purpose of clearing: | Mining activities and associated infrastructure |
| Method of clearing: | Mechanical Removal |
| Tenure: | Mining Lease 77/633 |
| Location (LGA area/s): | Shire of Yilgarn |

1.2. Description of clearing activities

Bullfinch Radio Pty Ltd proposes to clear up to 32.92 hectares of native vegetation within a boundary of approximately 32.92 hectares, for the purpose of mining related infrastructure including run-of mine pads, waste dump, haul roads, diversion drains, dewatering infrastructure, buildings, laydown areas, low-grade stockpile area, topsoil stockpile area and abandonment bund. The project is located approximately 230 kilometres west of Kalgoorlie-Boulder, within the Shire of Yilgarn.

1.3. Decision on application and key considerations

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|----------------|-------------------------------------|
| Decision: | Grant |
| Decision date: | 10 June 2022 |
| Decision area: | 32.92 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 18 February 2022. DMIRS advertised the application for a public comment for a period of 21 days, and no submissions were received.

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

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- potential land degradation in the form of erosion.

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 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
- commence construction no later than six months after undertaking clearing to reduce the risk of erosion.

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 includes:

- *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)
- *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, 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. The applicant has stated that:

- where possible, Bullfinch Radio will design infrastructure to be located within the existing approved footprint and where this isn't possible, infrastructure is located in areas of pre-disturbance from historical mining activities such as sparse and limited growth of vegetation.

3.2. Assessment of impacts on environmental values

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

The assessment against the clearing principles identified that the impacts of the proposed clearing present a potential risk to biological values (Priority flora and Priority Ecological Community). 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 (Biodiversity) - Clearing Principles (a)

Assessment

The application area lies within the Southern Cross subregion of the Coolgardie Bioregion, as defined by the Interim Biogeographic Regionalisation of Australia (IBRA) (GIS Database). The Southern Cross subregion is characterised by subdued relief, gently undulating uplands dissected by broad valleys. Vegetation consists of diverse Eucalypts woodlands, low greenstone hills, valley alluvials and broad plains of calcareous earths (CALM, 2002)

One Priority Ecological Community (PEC), Highclere Hills (Mayfield) vegetation complex (banded ironstone formation) (P1) intersects a small portion of the western side of the application area, with the majority of the application area occurring in its buffer zone. The known extent of this PEC is approximately 5,761 hectares, with approximately three hectares occurring within the application area. As such, the proposed clearing may impact on 0.05% of the Highclere Hills PEC, which is unlikely to significantly impact the conservation status of the PEC.

A reconnaissance flora and basic fauna survey (the survey) was conducted by Botanica Consulting in November 2021 and February 2022 to support a native vegetation clearing permit application. The survey report also includes findings from the area surrounding the application area to support a Programme of Work (POW) application for exploration activities. The desktop search component of the survey identified 1,236 vascular flora species occurring within 40 kilometres of the application area. Of these species, 80 are of conservation significance and consist of 12 Threatened, 19 Priority 1, 12 Priority 2, 31 Priority 3 and six Priority 4 taxa (Botanica, 2022). During the field survey, 57 vascular flora taxa were identified within the survey area, however, no Threatened or Priority flora species were recorded within the application area (Botanica, 2022).

The Threatened flora species identified in the desktop search have been assessed as unlikely to occur within the application area due to lack of suitable habitat and/or species occurring outside of their known range. 12 Priority flora species comprising two Priority 1 species, one Priority 2 species and nine Priority 3 species (see list of possible Priority species in section Appendix C.A.2 below) are considered possible to occur within the application area due to the likely presence of suitable habitat. However, none of these species were identified within the application area or the survey area during the field survey, which extends beyond the boundary of the application area.

According to available databases, the Slender-billed Thornbill (*Acanthiza iredalei*) (VU) has been recorded in the region, however, no evidence of this species was recorded during the field survey and there are no historical records of the Slender-billed Thornbill within the application area (GIS Database).

During the basic fauna survey, 11 terrestrial fauna species of conservation significance were identified as occurring in the regional area, comprising six Threatened, one Priority 1, one Priority 3 and three migratory bird species. Of these 11 species, one species (Malleefowl, *Leipoa ocellata*) was assessed as potentially occurring in the application area, with the nearest historical record approximately 16 kilometres from the survey area (Botanica, 2022). No evidence of this species occurring in the application area, including nesting mounds, tracks or other signs, was recorded (Botanica, 2022). No other conservation significant fauna species were identified within the application area during the field survey.

To further assess the presence of Malleefowl, Phoenix Environmental conducted a targeted fauna survey in March 2022. One degraded Malleefowl mound was identified outside the application area (approximately 300 metres from the western boundary) and one potential Malleefowl scat (unconfirmed) was recorded within the application area near the previously cleared Radio Mine site area (Phoenix, 2022). No other evidence of Malleefowl was recorded within the application area and no evidence of other conservation significant fauna species were recorded during the targeted fauna survey (Phoenix, 2022).

Six species of introduced flora were recorded within the application area. None of these species are listed as a Weed of National Significance or a Declared Pest in Western Australia (Botanica, 2022). However, weeds are known disturbance invaders, and there is a risk that weeds can be spread into the area and become established as they have the potential to out-compete native flora and reduce the biodiversity of an area.

Conclusion

Given that only approximately 0.05% of the Highclere Hills PEC is likely to be disturbed, no Priority or Threatened flora species were identified within the application area, no Priority fauna species were recorded during the field surveys and no confirmed evidence of Threatened fauna species were identified within the application area, the proposed clearing is unlikely to significantly impact the biodiversity of the area on a local or regional scale.

To minimise the spread of weeds and potential future impacts to biodiversity, a weed management condition is required to manage impacts on this environmental value.

Conditions

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

- take hygiene steps to minimise the risk of the introduction and spread of weeds.

3.2.2. Biological values (Fauna) - Clearing Principles (b)

Assessment

A basic fauna survey (the survey) was conducted by Botanica Consulting in November 2021 and February 2022. A further targeted fauna survey (targeted survey) was conducted by Phoenix Environmental in March 2022.

Four broad fauna habitat types were identified within the application area during the survey and are described as (Botanica, 2022):

1. Eucalyptus mallee woodland on clay-loam plain - *Eucalyptus* open mallee woodland over *Eremophila* and *Senna* shrubland over low chenopod shrubland;
2. Eucalyptus open woodland on clay-loam plain - *Eucalyptus* open woodland over *Eremophila* shrubland;
3. Acacia shrubland on rock hillslope - *Acacia* and *Eremophila* shrubland over *Ptilotus* and *Atriplex* low shrubland; and
4. Cleared – previously cleared areas.

From the survey, 11 terrestrial fauna species of conservation significance were identified as occurring in the regional area, comprising six Threatened, one Priority 1, one Priority 3 and three migratory bird species.

Malleefowl was assessed as potentially occurring in the application area, with the nearest historical record approximately 16 kilometres from the survey area (Botanica, 2022). No evidence of this species occurring in the application area was recorded during the survey (Botanica, 2022). In addition, no other conservation significant fauna species were identified within the application area (Botanica, 2022).

During the targeted survey, twenty sample sites were surveyed at 14 locations (note that the survey area extended beyond the application area boundary to additionally account for the proponent's PoW application). One degraded Malleefowl mound was identified outside the application area (approximately 300 metres from the western boundary) and one potential Malleefowl scat (unconfirmed) was recorded within the application area. The area where the degraded mound was recorded contains vegetation and soil that is unlikely representative of the vegetation types within the application area due to the presence of denser vegetation and darker soils observed through aerial imagery. A habitat assessment was conducted at each site, which reported each site as having unsuitable habitat features such as the absence of sandy substrate, insufficient leaf litter, insufficient canopy cover, rocky terrain and/or hill slopes (Phoenix, 2022). As such, the habitat types within the application area are likely unsuitable for Malleefowl.

Conclusion

Given that the habitat types identified within the application area have been assessed as not suitable for Malleefowl and that no conservation significant fauna were identified within the application area, the Delegated Officer has determined that the proposed clearing is unlikely to significantly impact on this environmental value. As such, no fauna management conditions are deemed necessary for the clearing permit.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 18 February 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 is one native title claim over the area under application (DPLH, 2022). 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, 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 application area is approximately 220 kilometres west of Kalgoorlie-Boulder and is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia. The surrounding land uses are predominantly for pastoral and mining purposes. |
| Ecological linkage | According to available databases, there are no formal ecological linkages mapped over the application area. |
| Conservation areas | There are no mapped conservation areas within the application area. The nearest conservation area (Baladjie Lake Nature Reserve) is approximately 12 kilometres east of the application area (GIS Database). |
| Vegetation description | <p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations (GIS Database):</p> <p>125: Bare areas; salt lakes;</p> <p>535: Medium woodland; rough fruited mallee on greenstone hills; and</p> <p>1068: Medium woodland; salmon gum, morrel, gimlet & <i>Eucalyptus sheathiana</i>.</p> <p>The following vegetation associations were recorded within the application area during the field survey (Botanica, 2022):</p> <p>CLP-EW1: <i>Eucalyptus salmonophloia</i> and <i>E. corrugata</i> open woodland over <i>Atriplex nummularia</i>, <i>Eremophila scoparia</i> and <i>Senna artemisioides</i> subsp. <i>filifolia</i> open shrubland over <i>Sclerolaena diacantha</i>, <i>Atriplex vesicaria</i> and <i>Eriachne sclerolaenoides</i> low open shrubland/grassland.</p> <p>CLP-MW1: <i>Eucalyptus corrugata</i> open woodland over <i>Atriplex nummularia</i>, <i>Eremophila scoparia</i> and <i>Senna artemisioides</i> subsp. <i>filifolia</i> open shrubland over <i>Sclerolaena diacantha</i>, <i>Atriplex vesicaria</i> and <i>Eriachne sclerolaenoides</i> low open shrubland/grassland.</p> <p>RH-AFW1: <i>Eucalyptus longissima</i> sparse woodland over <i>Acacia acuminata</i>, <i>A. tetragonophylla</i> and <i>Eremophila granitica</i> open shrubland over <i>Ptilotus exaltatus</i>, <i>P. obovatus</i> and <i>Atriplex vesicaria</i> low open shrubland over <i>Waitzia acuminata</i>, <i>Rhodanthe floribunda</i> and <i>Eriachne sclerolaenoides</i> open herbland/grassland.</p> <p>CLP-EW3 (recorded outside of the application area): <i>Eucalyptus longicornis</i>, <i>E. salmonophloia</i> and <i>Pittosporum angustifolium</i> open woodland over <i>Atriplex nummularia</i>, <i>Acacia assimilis</i> and <i>Eremophila scoparia</i> shrubland over <i>Atriplex vesicaria</i>, <i>Ptilotus exaltatus</i> and <i>Enchylaena tomentosa</i> low open shrubland.</p> |
| Vegetation condition | <p>The vegetation survey (Botanica, 2022) indicate the vegetation within the proposed clearing area is in 'good' to 'completely degraded' (Trudgen, 1991) condition.</p> <p>The full Trudgen (1991) condition rating scale is provided in Appendix CAppendix C.</p> |
| Climate and landform | <p>The application area falls within the Coolgardie Bioregion and Southern Cross Subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). This subregion has an arid to semi-arid, warm Mediterranean climate (CALM, 2002). The average annual rainfall ranges between 200-300 millimetres (BoM, 2022).</p> <p>The application area is described as gently undulating to relatively flat plains. The elevation over the application area ranges between 340 – 370 metres AHD (GIS Database).</p> |
| Soil description and land systems | <p>The soil within the application area is mapped as soil units DD15 and BB8, which are described as:</p> <ul style="list-style-type: none"> • DD15: Undulating plains with some low dunes, seasonal lakes, and clay pans: chief soils seem to be brown and grey/brown calcareous earths; and • BB8: Undulating to low hilly areas associated with greenstones (basic igneous rocks): chief soils seem to be calcareous loams and brown calcareous earths. (Northcote et al, 1960-68) <p>The application area is mapped as the Greenmount land system (GIS Database). The Greenmount land system is described as:</p> |

| Characteristic | Details |
|------------------------|---|
| | <ul style="list-style-type: none"> Gently undulating rises to rolling low hills in the eastern Zone of Ancient Drainage. Loamy earth (mostly red earths, calcareous and clayey and stoney). |
| Land degradation risk | In the presence of strong winds and/or periods of rainfall, the soil types land system within the application area are considered to be moderately susceptible to land degradation in the form of erosion, due the undulating nature of the area combined with loamy earths. |
| Waterbodies | The desktop assessment and aerial imagery indicated that one minor non-perennial watercourse transects the southern area proposed to be cleared (GIS Database). |
| Hydrogeography | The application area is within the Goldfields proclaimed groundwater area under the <i>Rights In Water and Irrigation Act 1914</i> (GIS Database). Groundwater salinity ranges between 14,000 to 35,000 milligrams per litre total dissolved solids (GIS Database). |
| Flora | <p>According to available databases, there has been no previous records of Threatened or Priority flora within the application area (GIS Database).</p> <p>No Threatened or Priority flora were recorded within the application area during the field survey (Botanica, 2022). Whilst no Priority flora species were identified, the application area is considered 'possible' habitat for 12 priority flora species. These priority flora species are listed in section A.2 below.</p> |
| Ecological communities | <p>The Highclere Hills Banded Iron Formation (P1) Priority Ecological Community intersects a small portion of the western boundary of the application area (GIS Database). There are no mapped Threatened Ecological Communities (TECs) over the application area or within a 40 kilometre radius (GIS Database).</p> <p>A potential Threatened Ecological Community (TEC) (Eucalypt Woodlands of the Western Australian Wheatbelt) was identified approximately 5 kilometres south of the application area (Botanica, 2022).</p> |
| Fauna | <p>According to available databases, the following conservation significant fauna, or their habitat, may occur within the application area (GIS Database):</p> <ul style="list-style-type: none"> Slender-billed Thornbill (<i>Acanthiza iredalei</i>) (VU) <p>A total of 193 terrestrial fauna taxa were identified within 40 kilometres of the application area during a basic fauna survey. The identified fauna taxa consist of 146 bird, nine mammal, 33 reptile and five amphibian species (Botanica, 2022). 10 terrestrial vertebrate fauna species of conservation significance have previously been recorded in the regional area, with one species (<i>Leipoa ocellata</i>, Malleefowl) considered likely to occur within the application area based on potential suitable habitat (Botanica, 2022).</p> |

A.2. Flora analysis table

The following Priority flora species are considered possible to occur within the application area based on suitable habitat present. However, these species were not identified during the field survey (Botanica, 2022).

| Taxon | Rank | | | Habitat | Assessment | Likelihood |
|---|------|--------|------|--|--|------------|
| | EPBC | BC Act | DBCA | | | |
| <i>Acacia haematites</i> | - | - | P1 | Ironstone, rocky rises | Records within 3 km of survey area, habitat may be present | Possible |
| <i>Beyeria rostellata</i> | - | - | P1 | - | Little known, within known range | Possible |
| <i>Tricoryne</i> sp. Wongan Hills (B.H.Smith 794) | - | - | P2 | Yellow to grey sand, gravelly clay quartz, laterite, limestone. Midslopes and uplands. | Records within 2 km of survey area, habitat may be present | Possible |
| <i>Acacia cylindrica</i> | - | - | P3 | Yellow/brown sand, gravelly soils. Undulating plains, flats. | Within known range, habitat may be present | Possible |
| <i>Acacia filifolia</i> | - | - | P3 | Yellow sand, gravelly lateritic sand. Sandplains. | At extreme of known range, habitat may be present | Possible |
| <i>Acacia formidabilis</i> | - | - | P3 | Yellow or red/brown sand. Undulating plains, hillsides. | Within known range, habitat may be present | Possible |
| <i>Austrostipa blackii</i> | - | - | P3 | - | Records within 2 km of survey area | Possible |
| <i>Lepidium genistoides</i> | - | - | P3 | Sandy loam. | Within known range, habitat may be present | Possible |
| <i>Stenanthemum newbeyi</i> | - | - | P3 | Clayey sand, clay or loam over laterite or ironstone. Hillslopes. | Within known range, habitat may be present | Possible |
| <i>Stylidium choreanthum</i> | - | - | P3 | White/yellow or red sand. Plains. | Within known range, habitat may be present | Possible |
| <i>Verticordia mitodes</i> | - | - | P3 | Yellow sand. Undulating plains. | Within known range, habitat may be present | Possible |
| <i>Verticordia stenopetala</i> | - | - | P3 | Yellow sand, sometimes with gravel. Undulating plains. | Within known range, habitat may be present | Possible |

The following Threatened flora species are considered unlikely to occur within the application area based on unsuitable habitat present and species occurring outside of their known range. No evidence of these species was recorded during the field survey (Botanica, 2022).

| Taxon | Rank | | | Habitat | Assessment | Likelihood |
|--|------|--------|------|--|---|------------|
| | EPBC | BC Act | DFCA | | | |
| <i>Acacia denticulosa</i> | VU | VU | - | Sand, loam, clay. Granite outcrops, rarely on sandplains. | Outside known range of species | Unlikely |
| <i>Acacia leptoneura</i> | CR | CR | - | - | Outside known range of species | Unlikely |
| <i>Acacia lobulata</i> | EN | EN | - | Gritty loam or sand. Low granitic breakaways. | Outside known range of species | Unlikely |
| <i>Daviesia microcarpa</i> | EN | CR | - | Weathered gravel. | Outside known range of species | Unlikely |
| <i>Eremophila virens</i> | EN | EN | - | Red/brown sand. Granite hillsides. | Outside known range of species | Unlikely |
| <i>Eremophila viscida</i> | EN | EN | - | Granitic soils, sandy loam. Stony gullies, sandplains. | Outside known range of species | Unlikely |
| <i>Eucalyptus brevipes</i> | EN | EN | - | White or yellow sand, sandy loam. Granite outcrops. | Outside known range of species | Unlikely |
| <i>Eucalyptus crucis</i> subsp. <i>crucis</i> | VU | EN | - | Sand, loam. Granite outcrops. | At extreme of known range, habitat unlikely to be present | Unlikely |
| <i>Grammosolen odgersii</i> subsp. <i>occidentalis</i> | - | T | - | Orange sand soil | Scattered records habitat unlikely to be present | Unlikely |
| <i>Melaleuca sciotostyla</i> | EN | EN | - | Orange clayey sand with lateritic pebbles. Scree slopes. | Within known range, habitat unlikely to be present | Unlikely |
| <i>Tetradlea erubescens</i> | - | VU | - | Red-brown sandy soil, red-brown gravelly loam, banded ironstone. Steep slopes, hilltops, cliffs, ridges. | At extreme of known range, habitat unlikely to be present | Unlikely |
| <i>Tecticornia flabelliformis</i> | - | VU | P1 | Clay. Saline flats. | Outside known range of species | Unlikely |

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> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>A small portion of the application area is mapped as the Highclere Hills Banded Iron Formation (Priority 1) priority ecological community (PEC).</p> <p>A number of priority flora records exist within close proximity (40 kilometres) of the application, however, no Priority flora or fauna were identified during the field survey (Botanica, 2022).</p> | Not likely to be at variance | Yes <i>Refer to Section 3.2.1, above.</i> |
| <p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>One degraded Malleefowl mound was identified directly outside the application area and one potential Malleefowl scat (unconfirmed) was recorded within the application area (Phoenix, 2022). No active or inactive Malleefowl mounds were recorded within the application area during the field survey (Botanica, 2022).</p> | Not likely to be at variance | Yes <i>Refer to Section 3.2.2, above.</i> |
| <p><u>Principle (c):</u> <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>12 records of Threatened flora species were identified within 40 kilometres of the application area, with no species assessed as ‘possible or likely’ to occur within the application area due to limited habitat suitability and species occurring outside of their known range. No Threatened flora species were recorded within the application area during the field survey (Botanica, 2022). As such, the proposed area to be cleared is unlikely necessary for the continued existence of Threatened flora.</p> | Not likely to be at variance | No |
| <p><u>Principle (d):</u> <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>No Threatened Ecological Communities (TEC) have been identified within the application area. Vegetation type CLP-EW3 has been identified as representing a potential TEC (Eucalypt woodlands of the Western Australian Wheatbelt) approximately five kilometres south of the application area (Botanica, 2022).</p> <p>Given the distance to this potential TEC, the proposed clearing is unlikely to impact on this environmental value.</p> | Not likely to be at variance | No |
| Environmental value: significant remnant vegetation and conservation areas | | |
| <p><u>Principle (e):</u> <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 area proposed to be cleared is within the Southern Cross subregion of the Coolgardie Bioregion, as defined by the Interim Biogeographic Regionalisation of Australia (IBRA). The Pre-European vegetation associations within the application area are described in section A.2 of this document. All vegetation associations within the application area retain more than 54% of their pre-European extent. As such, the application area is not a significant remnant of native vegetation in an area that has been extensively cleared.</p> | Not likely to be at variance | No |

| Assessment against the clearing principles | Variance level | Is further consideration required? |
|--|------------------------------|------------------------------------|
| <p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>Given the distance to the nearest conservation area (approximately 12 kilometres from application area), the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p> | Not likely to be at variance | No |
| Environmental value: land and water resources | | |
| <p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>Given no major 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.</p> | Not likely to be at variance | No |
| <p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils and land systems are considered to be moderately susceptible to erosion after significant rainfall events due to the general undulating land system and loamy soils within the area. As such, the Delegated Officer has determined that the proposed clearing requires further management conditions to compliment the avoidance and management measures outlined by Bullfinch Radio in relation to this environmental value. To manage land degradation, the following condition will be required on the clearing permit:</p> <ul style="list-style-type: none"> no clearing of native vegetation unless mineral production and/or associated activities commences within six months of the authorised clearing being undertaken. | May be at variance | No |
| <p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u></p> <p>There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database).</p> <p>As such, the proposed clearing is unlikely to result in significant changes to hydrological systems.</p> | Not likely to be at variance | No |
| <p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>The Southern Cross subregion climate is semi-arid, with a low average rainfall of approximately 250-300 millimetres per year (BoM, 2022). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (BoM, 2022).</p> <p>There are no permanent water courses or waterbodies within the application area (GIS Database). Seasonal drainage lines are common in the region and temporary localised flooding may occur briefly following heavy rainfall events. However, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.</p> | Not likely to be at variance | No |

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed

vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

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

Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)

| Condition | Description |
|---------------------|--|
| Excellent | Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement. |
| Very good | Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks. |
| Good | More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds. |
| Poor | Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds. |
| Very poor | Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species. |
| Completely degraded | Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs. |

Appendix D. Sources of information

D.1 GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Contours (DPIRD-073)
- 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)
- Hydrographic Catchments – Catchments (DWER-028)
- 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)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

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

D.2 References

- BoM (2022) Bureau of Meteorology Website – Climate Data Online, Marble Bar. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 04 April 2022).
- Botanica Consulting (2022) Reconnaissance Flora and Basic Fauna Survey for clearing permit within Mining Lease M77/633. Botanica Consulting, April 2022.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- 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 25 May 2022).
- 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
- 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
- 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.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68) Atlas of Australian Soils, Sheets 1 to 10, with explanatory data. CSIRO and Melbourne University Press: Melbourne.
- Phoenix Environmental (Phoenix) (2022) Basic and Targeted Fauna Survey – Radio Gold Mine Project. Phoenix Environmental, March 2022
- Trudgen, M.E. (1991) Vegetation condition scale in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

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) |
| 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 | <i>Environmental Protection Act 1986</i> , Western Australia |
| EPA | Environmental Protection Authority, Western Australia |
| EPBC Act | <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act) |
| GIS | Geographical Information System |
| ha | Hectare (10,000 square metres) |
| IBRA | Interim Biogeographic Regionalisation for Australia |
| IUCN | International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union |
| PEC | Priority Ecological Community, Western Australia |
| RIWI Act | <i>Rights in Water and Irrigation Act 1914</i> , Western Australia |
| TEC | Threatened Ecological Community |

Definitions:

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

T **Threatened species:**

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

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

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

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

CR **Critically endangered species**

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

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

EN **Endangered species**

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

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

VU **Vulnerable species**

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

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

Extinct Species:

EX **Extinct species**

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

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

EW **Extinct in the wild species**

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

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

Specially protected species:

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

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

MI **Migratory species**

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection

of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

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

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

CD Species of special conservation interest (conservation dependent fauna)

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

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

OS Other specially protected species

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

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

P Priority species:

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

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

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

P1 Priority One - Poorly-known species

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

P2 Priority Two - Poorly-known species

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

P3 Priority Three - Poorly-known species

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

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

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

- (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.
- (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Principles for clearing native vegetation:

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