



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	9493/1
Permit type:	Purpose Permit
Applicant name:	Cyprium Metals Limited
Application received:	15 November 2021
Application area:	300 hectares
Purpose of clearing:	Mineral Production and Associated Activities
Method of clearing:	Mechanical Removal
Tenure:	<i>Western Mining Corporation Limited (Throssell Range) Agreement Act 1985</i> , Mining Lease 271SA (AM 70/271)
Location (LGA area/s):	Shire of East Pilbara
Colloquial name:	Nifty Copper Operations

1.2. Description of clearing activities

Cyprium Metals Limited proposes to clear up to 300 hectares of native vegetation within a boundary of approximately 578 hectares, for the purpose of mineral production and associated activities. The project is located approximately 150 kilometres east of Nullagine, within the Shire of East Pilbara.

The application is to allow for the recommencement and extension of the Nifty Copper Mine, which was placed into care and maintenance in November 2019 by the prior owner (Preston, 2021). The applicant proposes to extend the existing open pit and heap leach (Preston, 2021).

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	25 August 2022
Decision area:	300 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 30 November 2021. 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 B), relevant datasets (Appendix E), supporting information provided by the applicant (Appendix A) including the results of a flora and vegetation survey, the clearing principles set out in Schedule 5 of the EP Act (Appendix C), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- impacts to conservation significant flora;
- loss of available habitat for conservation significant fauna species; and
- potential land degradation in the form of wind 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;
- staged clearing and to commence construction no later than three months after undertaking clearing to reduce the risk of erosion;

- retain cleared vegetation and topsoil and respread this on a cleared area of equivalent size within the adjacent existing area within 12 months of clearing to ensure vegetation and Priority flora species are not permanently lost;
- fauna management condition requiring the permit holder to undertake clearance surveys to ensure that no conservation significant fauna species are impacted through the proposed clearing; and
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

2. Legislative context

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

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

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

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)
- *Western Mining Corporation Limited (Throssell Range) Agreement Act 1985*

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 2019)
- 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

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. Avoidance and mitigation measures include the following (Preston, 2021).

- Clearing will be managed under a ground disturbance procedure;
- Clearing will be marked out and identified using GPS coordinates, with mapped boundaries provided to the clearing operator;
- Cleared areas will be progressively rehabilitated if not required during operations; and
- All vehicles, equipment and personnel will be inspected and cleaned as required to prevent the incidental spread of weeds.

In addition to the above measures, the applicant has committed to undertaking additional targeted surveys in the surrounding vegetation for *Thysanotus* sp. Desert East of Newman (Priority 2) (Appendix A). This will assist in quantify potential impacts to *Thysanotus* sp. Desert East of Newman.

3.2. Assessment of impacts on environmental values

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

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

3.2.1. Biological values (flora) - Clearing Principle (a)

Assessment

A detailed flora and vegetation survey was conducted over most the application area by Western Botanical over two field trips between 31 May and 3 June 2021, and 21 June and 1 July 2021 (Western Botanical, 2021). The detailed survey covered approximately 565 hectares, with habitat beyond the application area opportunistically surveyed (Western Botanical, 2021). There were 12 vegetation types mapped within the application area and the majority of vegetation was considered to be in 'excellent' condition (Western Botanical, 2021).

The field assessment recorded six Priority flora species: *Goodenia hartiana* (P2), *Thysanotus* sp. Desert East of Newman (P2), *Corynotheca asperata* (P3), *Indigofera ammobia* (P3), *Dasymalla chorisepala* (P3), and *Sauropus arenosus* (P3) (Western Botanical, 2021). Neither *Dasymalla chorisepala* nor *Sauropus arenosus* were recorded within the application area and will not be impacted by the proposed clearing (Western Botanical, 2021).

A total of 2,484 *Goodenia hartiana* individuals were recorded during the field assessment, with 615 occurring within the application area (Western Botanical, 2021). Additional information provided by the applicant states that 253 individuals will be impacted by the proposed clearing, based on the indicative mine site layout (Appendix A). The proposed impacts to this species is approximately 10.2% of individuals recorded during the field assessment. DBCA (2022) advised that specimen records suggest that this species is often recorded as locally common, with over 3,000 plants recorded at one location. It has been recorded within the Walyarta Conservation Park, however most of its known range is covered by mining tenements (DBCA, 2022). The proposed impact of approximately 10.2% was considered moderately significant at a local level, however the impact is unlikely to be considered significant at the species level (DBCA, 2022). The proposed clearing is unlikely to significantly impact the conservation status of this species.

A total of three *Thysanotus* sp. Desert East of Newman individuals were recorded within the application area (Western Botanical, 2021). All three individuals will be impacted by the proposed clearing, which represents a 100% impact to this subpopulation (DBCA, 2022; Appendix A). The records within the application area represent this species northern extent of its known range (DBCA, 2022). *Thysanotus* sp. Desert East of Newman is relatively cryptic in nature and poorly understood, the total number of plants is unknown and where it has been recorded it is described as occasional or scattered (DBCA, 2022). The three *Thysanotus* sp. Desert East of Newman plants fall within the footprint of the proposed waste rock dump expansion (Western Botanical, 2021). This expansion is based on the existing infrastructure at the Nifty mine site and constrained by tenure boundaries, therefore the *Thysanotus* sp. Desert East of Newman individuals cannot be avoided (Western Botanical, 2021; Appendix A).

While the clearing of this subpopulation within the application area may be significant, there are records of this species protected in Karlamilyi National Park, Collier National Park, and Pila Nature Reserve Park (DBCA, 2022; Western Australian Herbarium; 1998-). It is known from seven locations ranging from 510 kilometres north-south and 920 kilometres east-west from East of Newman to near Lake MacKay on the Northern Territory border, covering approximately 309,500 square kilometres (DBCA, 2022; Western Australian Herbarium; 1998-).

The impact to 100% of the recorded species constitutes as a significant impact locally, and may potentially be significant at a regional and species level without further local context (DBCA, 2022). *Thysanotus* sp. Desert East of Newman was identified within the mapped *Acacia ancistrocarpa* shrubland vegetation type, which makes up 58.6 hectares within the application area and is common within the region (Western Botanical, 2021). It is expected that *Thysanotus* sp. Desert East of Newman will be identified outside the application area in the surrounds during the suitable flowering period (DBCA, 2022; Western Australian Herbarium, 1998-; Western Botanical, 2021). The applicant has committed to undertaking additional surveys during the optimal flowering period in proximity to the application area to provide further local and regional context (Appendix A). Additional survey work will improve the scientific knowledge of the species.

A total of 137 *Corynotheca asperata* individuals were recorded during the field assessment, with 118 occurring within the application area (Western Botanical, 2021). Additional information provided by the applicant states that 76 individuals will be impacted by the proposed clearing, based on the indicative mine site layout (Appendix A). The proposed impacts to this species is approximately 55.5% of individuals recorded during the field assessment. The known range of this species spans approximately 300 kilometres north-south and 900 kilometres east-west from Marble Bar across the Great Sandy Desert to Tanami in the Northern Territory (DBCA, 2022). This species has been recorded at one location with an estimated 10,000 plants over 60 hectares (DBCA, 2022). The application area is located within the western portion and is a 100 kilometre infill of this species' known range, suggesting that the species is more widespread than what is currently known (DBCA, 2022; Western Botanical, 2021). While there may be significant impacts at the local level, the proposed clearing of 76 individuals is unlikely to have a significant impact at the species level (DBCA, 2022). The proposed clearing is unlikely to significantly impact the conservation status of this species.

A total of 12,105 *Indigofera ammobia* individuals were recorded during the field assessment, with 5,177 occurring within the application area (Western Botanical, 2021). Additional information provided by the applicant states that 542 individuals will be impacted by the proposed clearing, based on the indicative mine site layout (Appendix A). The proposed impacts to this species is approximately 4.5% of individuals recorded during the field assessment. *Indigofera ammobia* is known from a number of locations across the Great Sandy Desert from Marble Bar to north of Alice Springs in the Northern Territory (DBCA, 2022). There are known populations within Kurriji Pa Yajula Nature Reserve, Walyarta Conservation Park, and many locations within live mining tenure (DBCA, 2022). DBCA (2022) advised that a 4.5% impact is not considered a significant impact at a local level. The proposed clearing is unlikely to significantly impact the conservation status of this species.

The uniformity of the landforms present within the application area is present across most of the Great Sandy Desert bioregion (Western Botanical, 2021). It is expected that the above species are to occur outside the application area, and all species are recorded across multiple bioregions (Western Botanical, 2021; Western Australian Herbarium, 1998-). Further survey work would be required to confirm the extent of local impacts to some of the species discussed above.

Three introduced flora species were recorded within the larger flora survey area (Western Botanical, 2021). Weeds have the potential to out-compete native flora and reduce the biodiversity of an area.

Conclusion

Based on the above assessment, the proposed clearing will result in the clearing of multiple Priority flora species. The loss of these individuals may result in a significant impact in a local context, however the proposed clearing is unlikely to significantly impact the conservation status of these species. The exception to this is the clearing of *Thysanotus* sp. Desert East of Newman. The Delegated Officer has determined that the clearing of three individuals (100% of the local subpopulation) is an acceptable risk, given the permit holder has committed to undertaking targeted surveys within the local area to better quantify potential impacts to this species (Appendix A). To maintain local populations of the above Priority flora species as they may be significantly impacted at a local scale, the permit holder is required to source seed to use in rehabilitation efforts. Further consideration to cumulative impacts to the above Priority flora species will be considered during potential future amendments of this permit.

The proposed clearing has the potential to introduce and spread weeds within the application area. The proposed clearing of Priority flora is not likely to have a significant impact on the local populations of these species

Conditions

To address the above impacts, 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; and
- retain cleared vegetation and topsoil and respread this on a cleared area of equivalent size within the adjacent existing area within 12 months of clearing to ensure vegetation and Priority flora species are not permanently lost. This condition requires the permit holder to acquire seed of *Goodenia hartiana*, *Thysanotus* sp. Desert East of Newman, *Corynotheca asperata*, and *Indigofera ammobia* to be used during revegetation and rehabilitation efforts.

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

Assessment

A fauna survey was conducted over the application area by Biota Environmental Sciences (Biota) between 10 to 16 June 2021 and 5 to 8 July 2021 (Biota, 2021). The following three broad fauna habitats were recorded within the application area (Biota, 2021):

Sand dune: Tall longitudinal sand dunes. Open *Eucalyptus/Corymbia* over scattered *Acacia* species and *Eremophila* shrubs, over *Triodia* open hummock grassland and very open tussock grassland.

Sandplain: Open sandplains dominated by scattered *Acacia* species and *Eremophila* shrubs, over *Triodia* open hummock grassland.

Low rocky rise: Exposed shale rises, comprising *Acacia* open shrubland, over *Triodia* open hummock grassland and *Ptilotus* scattered low shrubs.

These fauna habitats range from excellent to degraded (Biota, 2021). The sand dune and low rocky rise habitats are considered to be in excellent condition (Biota, 2021). The sandplain habitat considered to be in excellent condition in the south with large areas impacted by recent fire, and considered to be in good to degraded in the north; with some areas impacted by leaching from tailings (Biota, 2021). Approximately 28.9 hectares of the area surveyed is considered cleared/disturbed and approximately 7.1 hectares is considered revegetation, both of these areas are in degraded condition (Biota, 2021).

The majority of the application area consists of sandplain habitat (80.2%), followed by sand dune habitat (11.9%), and low rocky rise habitat (1.4%) (Biota, 2021). These habitats have the potential to provide suitable habitat for multiple species of conservation significance (Biota, 2021). However, none of these habitats present are restricted to the application area, all fauna habitats are well represented in the surrounds and are common and widespread throughout the region (Biota, 2021).

Two conservation significant species were recorded within the application area by secondary evidence (tracks or digging): greater bilby (*Macrotis lagotis*, VU) and northern marsupial mole (*Notoryctes caurinus*, P4) (Biota, 2021).

The sandplain and sand dune habitats provide suitable burrowing, foraging and dispersal habitat for bilbies (Biota, 2021). Tracks were recorded within the sand plain habitat, however no burrows were identified (Biota, 2021). The presence of suitable habitat, historical records of bilbies at the Nifty mine site area, and identified tracks indicate that bilbies are likely to utilise the application area (Biota, 2021).

Northern marsupial mole was recorded within the application area from two trenches dug in sand dune habitat (Biota, 2021). Identification of evidence of marsupial mole burrows may have been impacted during the July field assessment due to significant rainfall which occurred between June and July 2021 (Biota, 2021). This significant rainfall may have removed old evidence of marsupial mole burrows (Biota, 2021).

Two additional conservation significant fauna species were considered likely to occur within the application area based on habitat suitability and previous records within the application area or nearby: northern quoll (*Dasyurus hallucatus*, VU) and brush-tailed mulgara (*Dasyercus blythi*, P4) (Biota, 2021). Northern quolls have previously been recorded on two occasions within mine infrastructure at the Nifty mine site (Biota, 2021). While northern quolls may occur, the habitats recorded within the application area only likely to provide dispersal habitat for this species (Biota, 2021).

Brush-tailed mulgaras have been previously recorded approximately 8 kilometres east of the application area in 2005 (Biota, 2021). While no evidence of brush-tailed mulgaras were recorded during the recent field assessment, the sandplain habitat would provide suitable habitat for this species (Biota, 2021). The habitats within the application area may be utilised by this species following significant rainfall when conditions are favourable and population numbers in the surrounding landscape are high (Biota, 2021).

Conclusion

Based on the above assessment, the proposed clearing will result in a loss of habitat for multiple species of conservation significance. As suitable habitats for these species are not restricted to the application area, it is unlikely that any of the above species would be reliant upon available fauna habitat or the proposed clearing be necessary for the maintenance of these species. There is abundant suitable habitat extending well beyond the application area that may be utilised by conservation significant fauna. The potential impacts of the proposed clearing on suitable habitat for multiple conservation significant fauna species can be managed by a fauna management condition.

The applicant may have notification responsibilities under the EPBC Act for impacts to greater bilby (*Macrotis lagotis*) and its habitat, as set out in the EPBC Act. The applicant has been advised to contact the federal Department of Water, Agriculture and the Environment (DAWE) to discuss EPBC Act referral requirements.

Conditions

To address the above impacts, the following management measure will be required as a condition on the clearing permit:

- fauna management condition requiring the permit holder to undertake clearance surveys to ensure that no conservation significant fauna species are impacted through the proposed clearing.
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

3.3. Relevant planning instruments and other matters

There is one native title claim (WC1996/078) over the area under application (DPLH, 2022). This claim has been determined by the Federal Court 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.

Other relevant authorisations that may be required for the proposed land use include:

- A Programme of Work approved under the *Mining Act 1978*.
- 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.

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
<p>DMIRS reviewed the supporting documentation and identified there will be impacts to four Priority flora species; <i>Goodenia hartiana</i> (P2), <i>Thysanotus sp.</i> Desert East of Newman (P2), <i>Corynotheca asperata</i> (P3), <i>Indigofera ammobia</i> (P3).</p> <p>DMIRS requested:</p> <ul style="list-style-type: none"> - if Cyprum Metals Limited have an approximation of the proposed impacts to these species would be such as number of individuals cleared, percentage impact to the populations, etc. 	<p>Cyprum Metals Limited provided information based on how many individuals of each species will occur within the heap leach, waste rock dump, and total within the disturbance footprint that will be impacted by the proposed clearing. This included providing a percentage impact to these species based on to total number recorded during the field assessment.</p>

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	The project is located approximately 150 kilometres east of Nullagine, within the Shire of East Pilbara in the extensive land use zone. The application area is surrounded by vast tracks of uncleared land. The predominant land use in the region is unallocated crown land, conservation reserves and Aboriginal land, with the main industries being tourism, mining and mineral exploration.
Conservation areas and ecological linkage	The application area is not located within any conservation areas. Karlamilyi National Park is located approximately 72 kilometres south of the application area. The proposed clearing area is not representative of an ecological linkage.
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association: 134: Mosaic: Hummock grasslands, open low tree steppe; desert bloodwood and feathertop spinifex on sandhills / Hummock grasslands, shrub steppe; mixed shrubs over spinifex between sandhills (GIS Database).</p> <p>A flora and vegetation survey was conducted over the application area by Western Botanical during two trips between 31 May and 3 June 2021, and 21 June and 1 July 2021. The following vegetation types were recorded within the application area (Western Botanical, 2021):</p> <p><u>Sand dune</u></p> <p>Cc-SLT: <i>Corymbia chippendalei</i> Scattered Low Trees</p> <p>Am-LS: <i>Aluta maisonneuvei</i> subsp. <i>maisonneuvei</i> Low Shrubland</p> <p><u>Sandplain swale</u></p> <p>Aa-SL: <i>Acacia ancistrocarpa</i> Shrubland</p> <p>As-LS: <i>Acacia stellaticeps</i> Low Shrubland</p> <p>Gs-S: <i>Grevillea stenobotrya</i> Shrubland</p> <p>Mg-S: <i>Melaleuca glomerata</i> Shrubland</p> <p>MI-OS: <i>Melaleuca lasiandra</i> Open Shrubland</p> <p>Tb-HG: <i>Triodia basedowii</i> Hummock Grassland</p> <p>TI-HG: <i>Triodia aff. lanigera</i> Hummock Grassland</p> <p><u>Stoney plain & low hill</u></p> <p>Ah-LS: <i>Acacia hilliana</i> Low Shrubland</p> <p><u>Clay pan playa</u></p>

Characteristic	Details
	<p>Ef-G: <i>Eragrostis falcata</i> Grassland</p> <p>Ta-LS: <i>Tecticornia auriculata</i> Low Shrubland</p>
Vegetation condition	<p>The vegetation survey (Western Botanical, 2021) indicates the vegetation within the proposed clearing area is in excellent, good, and degraded (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> - Excellent: vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species. - 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. <p>The full Keighery (1994) condition rating scale is provided in Appendix D.</p>
Climate and landform	The application area is mapped within elevations of 30-40 metres AHD. The climate of the region is Mediterranean, with an average rainfall of approximately 399.2 millimetres per year (BoM, 2022; CALM, 2002).
Soil description and land degradation risk	The application area is located within the Little Sandy land system, which is described as sandplains with linear and reticulate dunes supporting shrubby hard and soft spinifex grasslands.
Waterbodies	The desktop assessment and aerial imagery indicated that no ephemeral or permanent watercourses intersect the area proposed to be cleared.
Hydrogeography	The application area is not within any legislated surface water area. The application area is located within the Canning-Kimberley Ground Water Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> . The mapped groundwater salinity is 1000-3000 milligrams per litre which is described as brackish water quality.
Flora	A desktop assessment identified 25 conservation significant flora species occurring within a 110 kilometre radius of the application area. Of these 26 species, only one was considered likely to occur, and nine were considered possible occurring within the application area.
Ecological communities	There are no known Threatened or Priority Ecological Communities that occur within the application area. The nearest PEC record is the Mosquito Land System (P3), located approximately 87 kilometres west of application area.
Fauna	A desktop assessment returned a total of 27 conservation significant fauna species. Six were considered likely to occur (three of these species being mobile or migratory birds), ten were classified as may occur, ten species were considered unlikely to occur, and one species would not occur.

Appendix C. 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> Several Priority flora species have been recorded within the application area (Western Botanical, 2021).</p>	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>	At variance	Yes <i>Refer to Section 3.2.2, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Assessment:</u> Evidence of two conservation significant fauna species were recorded during a fauna survey of the application area (Biota, 2021).</p>		
<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> There are no known records of Threatened flora within the application area (GIS Database). Flora surveys of the application area did not record any species of Threatened flora (Western Botanical, 2021).</p> <p>None of the vegetation types recorded within the application area are known habitat for any species of Threatened flora, and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened flora (Western Botanical, 2021).</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> There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the application area (GIS Database). A flora and vegetation survey of the application area did not identify any vegetation representative of a TEC (Western Botanical, 2021).</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> The application area falls within the Great Sandy Desert Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Great Sandy Desert Bioregion (Government of Western Australia, 2019).</p> <p>The application area is broadly mapped as Beard vegetation association 134: Mosaic: Hummock grasslands, open low tree steppe; desert bloodwood and feathertop spinifex on sandhills / Hummock grasslands, shrub steppe; mixed shrubs over spinifex between sandhills (GIS Database). Approximately 99% of the pre-European extent of this vegetation association remains uncleared at both the state and bioregional level (Government of Western Australia, 2019).</p> <p>The vegetation proposed to clear is not a remnant in an area that has been extensively cleared.</p>	Not at variance	No
<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> The application area is not located within any conservation areas. Karlamilyi National Park is located approximately 72 kilometres south of the application area. The proposed clearing is unlikely have an impact on the environmental values of any 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> Given no permanent or ephemeral water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact on vegetation growing in association with a watercourse or wetland.</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> The application area is located within the Little Sandy land system (GIS Database). The Little Sandy land system is described as Sandplains with linear and reticulate dunes supporting shrubby hard and soft spinifex grasslands (Van Vreeswyk et al., 2004). Dunes, sandplains and swales show some susceptibility to wind erosion immediately after fires but rapid stabilisation occurs after rain (Van Vreeswyk et al.,</p>	May be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>2004). Dune flanks and crests are moderately to highly susceptible to erosion after any disturbance which removes vegetation (Van Vreeswyk et al., 2004).</p> <p>Potential erosion may be adequately minimised through a staged clearing condition that will require the permit holder to enact the purpose for which the clearing is authorised within three months of clearing.</p> <p>Additionally, a revegetation and rehabilitation condition may help to further minimise erosion potential by requiring the permit holder to stockpile topsoil to respread in cleared areas no longer required within 12 months.</p>		
<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> 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). The proposed clearing is unlikely to result in significant changes to surface water flows or to cause deterioration in the quality of underground water.</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> The climate of the region is arid tropical with summer rainfall, with an average rainfall of approximately 364.2 millimetres per year (BoM, 2022; CALM, 2002). Occasional significant rainfall events occur, often associated with cyclones (Preston, 2021). Given no watercourses are recorded within the application area, the proposed clearing is unlikely to contribute to waterlogging.</p>	Not likely to be at variance	No

Appendix D. 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 E. Sources of information

E.1. GIS databases

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

- 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
- Pre-European Vegetation Statistics
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-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)

E.2. References

- Biota (2021) Nifty Copper Mine Targeted Fauna Assessment. Prepared by Biota Environmental Services, for Cyprium Metals Ltd, November 2021.
- BoM (2022) Bureau of Meteorology Website – Climate Data Online, Telfer Aero. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 7 July 2022).
- DBCA (2022) Advice received in relation to Clearing Permit Application CPS 9493/1. Species and Communities Branch, Department of Biodiversity, Conservation and Attractions, Western Australia, August 2022.
- 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 5 July 2022).
- Department of Primary Industries and Regional Development (DPIRD) (2022) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (Accessed 5 July 2022).
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- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, 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
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- 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.
- Preston (2021) Nifty Copper Operation. Native Vegetation Clearing Permit Application Supporting Information. Prepared by Preston Consulting Pty Ltd, for Cyprium Metals Limited, November 2021.
- Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia. Technical Bulletin No. 92. Department of Agriculture, South Perth, Western Australia.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 18 July 2022).
- Western Botanical (2021) Detailed Flora and Vegetation Assessment of the Nifty Copper Mine. Prepared by Western Botanical, for Cyprium Metals Ltd, June 2021.

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.