Department of Energy, Mines, Industry Regulation and Safety

GOVERNMENT OF WESTERN AUSTRALIA

Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	5795/5
Permit type:	Purpose Permit
Applicant name:	Hamersley Iron Pty Ltd
Application received:	25 January 2024
Application area:	824 hectares
Purpose of clearing:	Mineral production, mineral exploration, flora/fauna monitoring, groundwater/hydrogeological monitoring, infrastructure access, Aboriginal Heritage survey/access and associated activities
Method of clearing:	Mechanical Removal
Tenure:	*Iron Ore (Hamersley Range) Agreement Act 1963*, Mineral Lease 4SA (AML 70/4)
	Iron Ore (Hamersley Range) Agreement Act 1963, General Purpose Lease 3SA (AG 70/3)
	Miscellaneous Licence 47/209
	Miscellaneous Licence 47/136
	Exploration Licence 47/1789
Location (LGA area/s):	Shire of Ashburton
Colloquial name:	Tom Price Mine

1.2. Description of clearing activities

Hamersley Iron Pty Ltd proposes to clear up to 824 hectares of native vegetation within a boundary of approximately 9,224 hectares, for the purpose of mineral production, mineral exploration, flora/fauna monitoring, groundwater/hydrogeological monitoring, infrastructure access, Aboriginal Heritage survey/access and associated activities (Hamersley Iron Pty Ltd, 2024b). The total cumulative area of land cleared under this permit to date is approximately 152.04 hectares and approximately 47.91 hectares of rehabilitation activities have been conducted to date (Rio Tinto, 2023b; Appendix F).

Clearing permit CPS 5795/1 was granted by the Department of Mines and Petroleum (now the Department of Energy, Mines, Industry Regulation and Safety) on 12 December 2013, replacing 28 clearing permits over the Tom Price Mine and was valid from 4 January 2014 to 4 January 2031. The permit authorised the clearing of up to 824 hectares of native vegetation within a boundary of approximately 9,224 hectares, for the purpose of mineral production, mineral exploration and associated activities. Permits prior to CPS 5795/1 approved 1,426.4 hectares to be cleared. Hamersley Iron Pty Ltd identified 597 hectares previously cleared under those permits, with 824 hectares outstanding and 3,244 hectares considered to be 'completely degraded' prior to the approval of CPS 5795/1.

CPS 5795/2 was granted on 27 February 2014, amending the wording of Condition 9(b) on the permit.

CPS 5795/3 was granted on 17 November 2016, amending the date of annual reporting and extending the duration of the permit to 31 December 2031.

CPS 5795/4 was granted on 25 January 2017 to amend restricted areas relating to Condition 3 and Condition 8 of the permit. The amount of clearing authorised and permit boundaries have remained unchanged throughout all amendments.

On 25 January 2024, the Permit Holder applied to amend CPS 5795/4 to update the purpose to include activities: flora/fauna monitoring, groundwater/hydrogeological monitoring, infrastructure access, Aboriginal Heritage survey/access, and extend the period in which clearing is authorised, and to extend the duration of the permit.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	1 October 2024
Decision area:	824 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed, and determined in accordance with sections 51KA(1) and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advertised the application for a public comment for a period of 7 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix H), supporting information provided by the applicant including the results of flora and vegetation surveys, the clearing principles set out in Schedule 5 of the EP Act, 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;
- impacts to conservation significant fauna habitat; and
- potential land degradation in the form of wind and water 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;
- extend and maintain restricted zones to protect areas of conservation significance;
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity;
- watercourse management to avoid riparian vegetation and maintain existing water flow;
- commence construction no later than six months after undertaking clearing to reduce the risk of erosion; and
- retain cleared vegetation and topsoil and respread this on a cleared area of equivalent size within the application area within 12 months of clearing to ensure vegetation and fauna habitat is not permanently lost.

The assessment has not changed since the assessment for CPS 5795/4, except in the case of Principle (j) given the consideration for extent of clearing and topography. The Delegated Officer determined that the proposed clearing is not likely to lead to an unacceptable risk to environmental values.

1.5. Site map

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

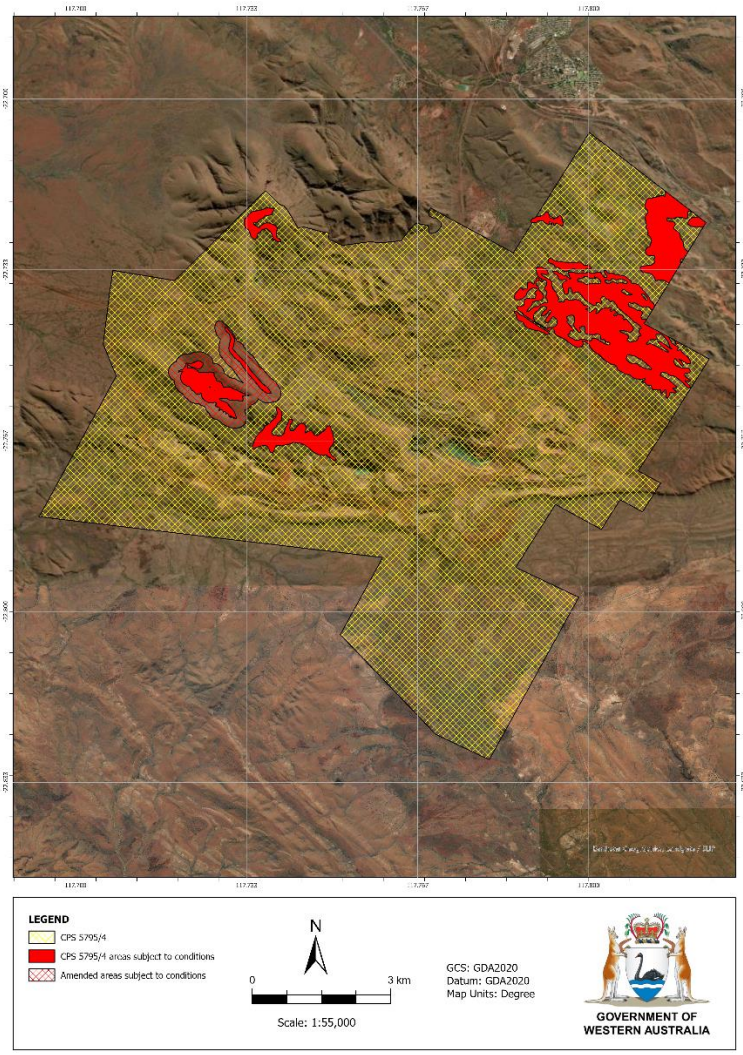

Figure 1. Map of the application area. The yellow cross-hatched area and shaded red area indicates the area within which conditional authorised clearing can occur under the granted clearing permit. The red cross-hatched area indicates the amended restricted areas that are subject to conditions.

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, 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)
- *Biosecurity and Agriculture Management Act 2007* (BAM Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)
- *Rights in Water and Irrigation Act 1914 (*RIWI Act)
- *Country Areas Water Supply Act 1947* (CAWS Act)
- *Iron Ore (Hamersley Range) Agreement Act 1963*

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

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. Rio Tinto Iron Ore standard management measures include (Rio Tinto, 2013):

- Regulatory Approvals Guide,
- Approval Request 'environment' Tab Owners Guideline,
- Equipment Hygiene Inspection Work Practice,
- Soil Resource Management Work Practice,
- Improvement Planning Work Practice,
- Wildlife Interaction Guidance Note,
- Approvals Requests for Environment Guidance Note,
- Environment Standards,
- Weed Management Plan,
- Rehabilitation Management Plan,
- Seed Management Plan, and
- Significant Species Management Plan.

A Significant Areas Management Plan (SAMP) developed for site specific management measures to minimise impacts to significant environmental features and includes (Rio Tinto, 2013):

- identification of conservation significant flora species, noting that *Lepidium catapycnon* is no longer listed as Threatened under the EP Act,
- identification of conservation significant fauna and associated habitat,
- avoid clearing areas outlined as 'significant areas', described as areas identified to contain significant species and/or is core habitat,
- minimal low impact activities permitted within environmental restriction areas,
- further surveys required for activities that are not considered low impact within the significant areas and approval sort after from DEMIRS.

3.2. Assessment of impacts on environmental values

A review of current environmental information (Appendix A) reveals that the assessment against the clearing principles has not changed significantly from the Clearing Permit Decision Report CPS 5795/4, except for Principle (j) which was changed to may be at variance given the consideration for extent of clearing and topography.

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

Assessment

A flora and vegetation survey was conducted over the Tom Price mine site, with field trips from 16 to 26 August 2011 and 11 to 16 October 2011, noting some limitations with access and survey timing (ENV, 2013). There have been several surveys in small areas within the boundary of the application area, however no new surveys cover the entire application area (Rio Tinto, 2023a).

A desktop search combined with the field results from ENV (2013) that covered approximately 9,436 hectares identified records of 12 priority flora within the application area (Rio Tinto, 2023a; GIS Database):

- *Eucalyptus lucens* (P1)
- *Indigofera ixocarpa* (P2)
- *Pentalepis trichodesmoides* subsp. *hispida* (P2)
- *Amaranthus centralis* (P3)
- *Dampiera anonyma* (P3)
- *Geijera salicifolia* (P3)
- *Olearia mucronata* (P3)
- *Sida* sp. Hamersley Range (K. Newbey 10692) (P3)
- *Acacia bromilowiana* (P4)
- *Eremophila magnifica* subsp. *magnifica* (P4)
- *Lepidium catapycnon* (P4)
- *Sida* sp. Barlee Range (S. van Leeuwen 1642) (P4)

Additionally, six species have potential to occur within the application area due to habitat suitability and occurrence within 30 kilometres of the application area (Western Australian Herbarium, 1998-; GIS Database):

- *Calotis squamigera* (P1)
- *Scaevola* sp. Hamersley Range basalts (P2)
- *Aristida jerichoensis* var. *subspinulifera* (P3)
- *Indigofera rivularis* (P3)
- *Ptilotus subspinescens* (P3)
- *Vittadinia* sp. Coondewanna Flats (S. van Leeuwen 4684) (P3)

The proponent developed a Significant Areas Management Plan to avoid areas of high conservation significance and minimise impacts (Rio Tinto, 2013). Restricted zones have been established for the protection of conservation significant flora and fauna habitat, previously covering 1,260.9 hectares, however, has been reduced in previous assessments due to changes in

conservation listing of species and proponent planning requirements. The total area of restricted zones covers approximately 682.63 hectares. Two Priority flora; *Sida* sp. Hamersley Range and *Amaranthus centralis* have recently been recorded within the restricted zones (Rio Tinto, 2023a). Excluding *Pentalepis trichodesmoides* subsp. *hispida* and *Sida* sp. Barlee Range, ten of the priority flora listed above are protected by restricted zones under the SAMP (Rio Tinto, 2013), however the restricted zones provide habitat for priority flora likely occur within the application area.

There is one historical record of *Pentalepis trichodesmoides* subsp. *hispida* within the application area from 1980 (Western Australian Herbarium, 1998-). This species has been recorded across four IBRA subregions including within conservation areas Karijini National Park and Millstream Chichester National Park (Western Australian Herbarium, 1998-). There is potentially suitable habitat within the application area, however, was not identified during field survey (ENV, 2013). Given the above, it is unlikely the proposed clearing will impact the conservation status of this species.

Two priority flora species; *Calotis squamigera* and *Aristida jerichoensis* var. *subspinulifera* have the potential to occur within the application area as there is suitable habitat present (Western Australian Herbarium, 1998-; GIS Database). Field surveys may not have identified either of these species due to conditions not being optimal for annual and ephemeral species (ENV, 2013). Potentially suitable habitat for *Calotis squamigera* was recorded at one quadrat with soil described as red-brown loam covering of pebbles (ENV, 2013; Western Australian Herbarium, 1998-). There are limited records of *Calotis squamigera*, however, given the distance of the nearest known record is approximately 26 kilometres from the application area and limited habitat suitability was identified, the proposed clearing is unlikely to significantly impact the conservation status of this species. Potential habitat for *Aristida jerichoensis* var. *subspinulifera* habitat may occur in areas of hardplains, with records generally located near minor drainage lines (Western Australian Herbarium, 1998-). This habitat is common within the local and regional areas (GIS Database). Given the distance to the nearest record is approximately 22 kilometres from the application area and habitat availability in surrounding area, it is unlikely the proposed clearing will significantly impact the conservation status of this species.

Scaevola sp. Hamersley Range basalts, *Indigofera rivularis* and *Ptilotus subspinescens* have been recorded within close proximity to the application area (30 kilometres) (GIS Database). Potentially suitable habitat for *Scaevola* sp. Hamersley Range basalts is described as high landscapes on summits or steep slopes, and for *Ptilotus subspinescens* it is described as gentle rocky slopes and screes and *Indigofera rivularis* has been recorded in low landscapes associated with drainage lines or stony creeks (Western Australian Herbarium, 1998-). Habitat for these species has been described within the application area and within the restricted zones (Rio Tinto, 2013). The nearest record of *Vittadinia* sp. Coondewanna Flats (S. van Leeuwen 4684) is located within conservation area Karijini National Park with approximately 12,000 individuals recorded at 143 locations (Astron, 2018).

Twelve introduced flora species have been recorded within the application area (ENV, 2013), including athel pine (*Tamarix aphylla*) which is considered as a Weed of National Significance and is listed as a Declared Pest under Section 22 (2) of the *Biosecurity and Agriculture Management Act 2007*. Weed management is undertaken within the application area as part of the proponents annual weed management measures and includes control based on invasiveness and risk to the environment (Hamersley Iron Pty Ltd, 2024a). Athel pine has been identified within the active waste fines storage facility (WFSF) and has not undergone treatment due to safety risks, however the proponent has focused on preventing spread and limiting infestation to the WFSF (Hamersley Iron Pty Ltd, 2024a; Appendix G). Management of athel pine within the WFSF will be implemented during mine closure (Hamersley Iron Pty Ltd, 2024a). Weeds have potential to out-compete native flora and reduce biodiversity of an area. Athel pine displaces *Eucalyptus* species and other native vegetation, resulting in dominance of ground cover and does not form nesting hollows (CISS, 2024). This species excretes salt through its leaves which can lead to higher levels of salinity in dense areas (CISS, 2024). Athel pine is a drought resistant species with varying degrees of water dependency based on availability and has the potential to lower the water table (CISS, 2024). Dense infestations of athel pine have potential to increase the risk of flooding and erosion (CISS, 2024). In these areas, soil sedimentation rates are increased by sediment trapping and stabilising of sediment during times watercourses are flowing (CISS, 2024). Potential impacts as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Conclusion

For the reasons set out above, it is considered that the impacts of the proposed clearing of native vegetation contains conservation significant flora can be managed through flora restricted zones, weed management and rehabilitating the site post clearing activities to ensure the vegetation is not permanently lost.

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;
- maintain restricted zones to protect areas of conservation significance; and
- retain cleared vegetation and topsoil and respread this on a cleared area of equivalent size within the application area within 12 months of clearing to ensure vegetation is not permanently lost.

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

Assessment

A level 1 fauna field survey was conducted over the Tom Price mine site in August 2011 and a level 2 targeted survey in late November to early December 2011, noting some limitations with access (ENV, 2013). There has been one additional fauna survey that partially intersects the application area; however, no new surveys cover the entire application area (Rio Tinto, 2023a).

Five broad habitat types and disturbed areas were mapped within the application area (ENV, 2013; Appendix A):

- gorges/gully: 6.1% (580.7 hectares) – high habitat value
- drainage lines: 2.1% (271.5 hectares) – moderate habitat value
- hill crest/slopes: 23.2% (2,197.6 hectares) – low habitat value
- low hills: 21% (1,990.6 hectares) – low habitat value
- stony plain: 11% (1,042.3 hectares) – low habitat value
- cleared/developed/rehabilitated: 35.7% (3,381.0 hectares)

ENV (2013) identified gorge/gully habitat to be of high value due to the diversity of microhabitats including outcropping of bedrock that provides habitat in the form of overhangs, cracks, crevices, caves and area for water to pool during wet season. This habitat also consists of microhabitat in the form of logs, debris and hollows (ENV, 2013). The drainage line habitat is considered to provide moderate habitat value with microhabitat features that consist of some logs, debris, and tree hollows. This habitat acts as a wildlife corridor that helps some fauna dispersal (ENV, 2013). The remaining habitat types listed above are considered to be low habitat value due to the low diversity of microhabitat features such as minimal cracks, crevices, tree hollows or suitable areas for digging (ENV, 2013).

According to previous surveys and available database information, 14 conservation significant fauna species were recorded within the application area and local surrounds (30 kilometres) (ENV, 2013; Appendix A.3; GIS Database). Considering habitat requirements and distribution of potentially occurring species, the application area may comprise suitable habitat for the following conservation significant species:

Mammals:
- Northern quoll (*Dasyurus hallucatus*, EN)
- Ghost bat (*Macroderma gigas*, VU)
- Pilbara leaf-nose bat (PLNB) (*Rhinonicteris aurantia*, VU)
- Long-tailed dunnart (*Antechinomys longicaudata* formerly *Sminthopsis longicaudata*, P4)
- Northern short-tailed mouse (*Leggadina lakedownensis*, P4)
- Western pebble-mound mouse (*Pseudomys chapmani*, P4)

Reptiles:
- Pilbara olive python (*Liasis olivaceus barroni*, VU)
- Lined soil-crevice skink (Dampier) (*Notoscincus butleri*, P4)

Birds:
- Peregrine falcon (*Falco peregrinus*, OS)
- Striated grasswren (sandplain) (*Amytornis striatus striatus*, P4)

Northern quoll
The northern quoll can be found in a variety of habitats, with a preference to complex rocky areas in the Pilbara (DNREAS, 2010). Daytime den sites provide important shelter and protection from predators and weather, occurring in rocky outcrops, tree hollow, hogs, termite mounds and goanna burrows (DNREAS, 2010). The National Recovery Plan for the Northern Quoll (DNREAS, 2010) states that habitat critical to survival is where the species is least exposed to threats, with this broadly being defined as rocky areas and offshore islands. Rocky areas are considered particularly important, as these habitats support denser populations both through greater resource availability and protection from external threats such as feral cats, livestock and fire (DNREAS, 2010). Drainage habitat associated with flowlines is considered to be of high value as watercourses facilitate connectivity for dispersal and foraging (Cowan *et al*., 2022; Shaw *et al*., 2023). The gorge/gully habitat within the application area contains suitable denning and foraging habitat for northern quoll (ENV, 2013). No individuals or signs (scats or tracks) were previously recorded by ENV (2013) during targeted survey, however there is a record within 13 kilometres of the application area from 2017 (GIS Database). Given gorge/gully area has protection under the SAMP with restricted clearing and with the implementation of watercourse management condition, the proposed clearing is unlikely to significantly impact the conservation status of this species.

Ghost bat
The ghost bat is a carnivorous species with patchy distribution of isolated populations within the semi-desert Pilbara region (Bat Call WA, 2021a; Bullen, 2023). This species moves seasonally or as dictated by weather conditions between a number of roost sites in caves, rock crevices and disused mine adits (Bat Call WA, 2021a). Excluding colonies in large, abandoned mines, ghost bats in the Pilbara region are often present either singularly or in small groups of less than 15 (Bat Call WA, 2021a). The species depends on day roosts found deep underground in temperature-stable caves with chambers and/or cavities that trap humidity (Bat Call WA, 2021a). The Pilbara populations forage on productive plain areas with thin mature woodland over patchy or clumped tussock or hummock grass on sand or stony ground and drainage lines along riparian corridors (Bat Call WA, 2021a; Cramer *et al*., 2022). Ghost bats tend forage less than 5 kilometres from diurnal roost sites, although larger distances have been recorded (TSSC, 2016). Gorge/gully habitat has been recorded within the application area and is considered to be high value habitat as it contains overhangs, cracks, crevices and caves (ENV, 2013). Deep caves were observed with constant temperature and humidity that would provide favourable roost conditions for ghost bat (ENV, 2013). Gorge/gully habitat was identified within the SAMP (Rio Tinto, 2013) and are protected from high impact clearing under the restricted zones. There are four records of ghost bat from 2017 within 15 kilometres of the application area (GIS Database).

The level 1 fauna survey identified gorge habitat towards the southwest of the application area to commonly contain caves that are suitable for bats, including a small free standing pool of water nearby (ENV, 2013; photo 7 and 8, Appendix D). The narrow gorge habitat north of this area did not include a detailed habitat assessment, however, was identified as potentially suitable ghost bat habitat (ENV, 2013). The deep caves found within the gorge habitat offer physiological favourable roost sites for ghost bats providing relatively constant temperature and humidity (ENV, 2013). Roosting habitat for ghost bats in the Pilbara region

have four proposed categories (Bat Call WA, 2021a). Category 1 and category 2 caves are classified as maternity/diurnal roost sites with permanent or regular occupancy described as deep and dark with reasonably narrow entrances and a steady microclimate (Bat Call WA, 2021a). Category 3 and 4 caves are diurnal or nocturnal roosts with occasional or opportunistic occupancy described as less well-developed structures that may be shallower and have a wide entrance or not a stable microclimate (Bat Call WA, 2021a). During the targeted fauna survey, a deep cave (>15 metres) was identified with secondary evidence consisting of remnants of prey and a large pile of ghost bat scats indicating the cave has been used for a long period of time (ENV, 2013). The permit holder noted the caves within the application area have not been assessed for categorisation and do not have coordinate data, except for the habitat assessment sites and cave containing evidence of ghost bat (Hamersley Iron Pty Ltd, 2024a). Buffers that include entire gullies are appropriate for where multiple caves occur, and current best practice to protect category 1 and 2 caves include a buffer between 200 to 250 metre radius (Bat Call WA, 2021a). Given the gorge habitat has been identified as potential to support deep caves, but have not been properly searched, a 200-metre buffer has been applied to minimise potential impacts to ghost bat habitat.

Pilbara leaf-nose bat
The Pilbara leaf-nose bat (PLNB) is a slightly divergent form of the Orange leaf-nose bat that occurs only in the Pilbara region. The PLNB forages in a variety of habitats and roosts during the day in the dark areas of caves and underground mines with stable, warm and humid microclimates (Bat Call WA, 2021b). Gorge/gully habitat has been recorded within the application area and is considered to be high value habitat as it contains overhangs, cracks, crevices and caves (ENV, 2013). Deep caves were observed that had constant temperature and humidity that would potentially provide favourable conditions for PLNB, however, ENV did not identify suitable roosting habitat for the PLNB (ENV, 2013). There is record of a PLNB roost and several individuals within the local surrounds (GIS Database). Given there is suitable habitat nearby, there is potential the PLNB will disperse or forage within the application area. Potential impacts can be minimised by restricting high impact clearing within the gorge/gully habitat and the implementation of watercourse management condition.

Long-tailed dunnart
There has been a single record of long-tailed dunnart within the application area and two (2006) within the local surrounds (30 kilometres) (GIS Database). However, the proponent has no record within the application area (Hamersley Iron Pty Ltd, 2024a). The species occurrence is patchy, with low detection across the Pilbara region and minimal survey effort in the surrounding area (GIS Database). Common habitat characteristics are described as elevated landforms such as hills, ridges, breakaways with sparse vegetation (Western Australian Museum, 2024). The hill crest and slope habitat found within the application area may support populations of long-tailed dunnart, however, it is unlikely that the proposed clearing represents critical habitat for this species, given its widespread distribution in the local and regional area.

Northern short-tailed mouse and Western pebble-mound mouse
The northern short-tailed mouse occurs across northern Australia from the Pilbara in the west to Cape York Peninsula in the east (Aplin *et al.*, 2016). This species is found in areas of open tussock and hummock grassland, *Acacia* shrubland and savanna woodland, on alluvial clay or sandy soils (Aplin *et al.*, 2016). There are six records (prior to 2000) of this species within the application area and 22 records in the local surrounds (GIS Database). The low hill habitat contains stony hummock grassland that has potential to support this species, however, does not consist of alluvial clay or sandy soils which are a preferred substrate. It is unlikely this species will be significantly impacted by the proposed clearing.

The Western pebble-mound mouse has a distribution through the non-coastal, central and eastern parts of the Pilbara, with large populations recorded in the major national parks of the region (Karijini, Rudall River, Millstream-Chichester and Collier Range) (Burbidge, 2016). This species is found in areas of rocky, hummock grassland with little or no soil and an overstory of *Acacia* (Burbidge, 2016). Individuals live in groups in burrows below mounds of pebbles, typically on low gravelly and stony rises (Burbidge, 2016). The western pebble-mound mouse has been recorded within the application area (RTIO, 2023), with suitable habitat identified in the hill crest/slope and low hills habitat types (ENV, 2013). The habitat is common in the region and the proposed clearing is unlikely to significantly impact the conservation status of this species, however active mounds should be avoided where practicable.

Reptiles
The Pilbara olive python is a subspecies of olive python that is endemic to the Pilbara and northern Gascoyne regions (Northover *et al.*, 2023). Common habitat characteristics for this species is rocky gorges, gullies, and permanent waterholes (Northover *et al.*, 2023). During warmer months, Pilbara olive python are typically encountered in riparian vegetation where they utilise water bodies to hunt and ambush prey from a submerged position, while other times of the year they are generally found in rocky habitats (DEWHA, 2008). One Pilbara olive python was recorded within the application area (ENV, 2013) and given they are cryptic in nature, the species is expected to occur within the application area. Potential impacts to habitat can be minimised with the restricted zone condition for gorge/gully habitat and watercourse management condition avoiding riparian vegetation.

The lined soil-crevice skink has a distribution encompassing most of the western Pilbara from Dampier Peninsula, Panawonica and Karijini National Park. This species is associated with spinifex-dominates area near riparian vegetation where it forages in leaf litter (Wilson and Swan, 2020). There is one record (1995) approximately 18 kilometres from the application area (GIS Database). This record is to the most eastern extent of the species extend of occurrence and it is unlikely that this species will be significantly impacted by the proposed clearing.

Birds
The Peregrine falcon typically nests on rocky ledges in tall, vertical cliff faces and gorges, or in trees associated with drainage lines and forages in a range of habitat types (Australian Museum, 2019). There is one record within the application area (GIS Database). ENV (2013) noted very few hollows occurred within the drainage line habitat. Implementation of restricted zone in the gorge/gully habitat and watercourse management condition will minimise any potential impacts to the habitat utilised by the peregrine falcon.

The striated grasswren inhabits spinifex on sandhills and rocky hillslopes. There are seven records from 1997 within 2 kilometres of the application area (GIS Database). There is potential for this species to occur within the application area due to suitable habitat, however given the age of the records and suitable habitat in the surrounding area, it is unlikely this species will be significantly impacted by the proposed clearing.

Conclusion
For the reasons set out above, it is considered that the impacts of the proposed clearing on conservation significant fauna habitat can be managed with restricted zones in the gorge/gully habitat, slow directional clearing to allow fauna to move into adjacent vegetation, watercourse management to avoid riparian vegetation and rehabilitating the site post clearing activities to ensure the habitat is not permanently lost.

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

- increase some restricted zones and maintain the others to protect areas of conservation significance;
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity;
- watercourse management to avoid riparian vegetation; and
- retain cleared vegetation and topsoil and respread this on a cleared area of equivalent size within the application area within 12 months of clearing to ensure fauna habitat is not permanently lost.

3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 8 March 2024 by the Department of Energy, Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There are 3 native title claims over the area under application (DPLH, 2024). These claims (WC2010/016, WC1997/089 and WC1997/089) have been determined by the Federal Court on behalf of the claimant groups; Yinhawangka Part A and Eastern Guruma. 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 23 registered Aboriginal Sites of Significance within the application area (DPLH, 2024). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:

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

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

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is part of Tom Price mine and is surrounded by native vegetation in the extensive land use zone of Western Australia (GIS Database). The predominant land use in the region is grazing of native pastures, conservation, mining activities and urban development.
Ecological linkage	According to available databases, the application area does not contain any known or mapped ecological linkages (GIS Database).
Conservation areas	The nearest conservation area is Karijini National Park, located approximately 8 kilometres east of the application area (GIS Database).
Vegetation description	The application area occurs within the Hamersley subregion of Pilbara (PIL03). The vegetation of the application area is broadly mapped as the following Beard vegetation associations (GIS Database): • **567**: hummock grasslands, shrub steppe; mulga & kanji over soft spinifex & *Triodia basedowii*; • **82**: hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana;* and • **162**: shrublands; snakewood scrub. A flora and vegetation survey was conducted over the application area by ENV during August, 2011. Forty vegetation associations (detailed in CPS 5795/4 Decision Report) were recorded across six major landforms within the application area (ENV, 2013). Mapping of vegetation types is provided in Appendix E.
Vegetation condition	The vegetation survey (ENV, 2013) and aerial imagery indicate the vegetation within the proposed clearing area is in completely degraded to very good condition (Trudgen, 1991) condition, described as: • **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. to • **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. The full Trudgen (1991) condition rating scale is provided in Appendix C. In 2013, ENV described 42.9% (4,060.3 ha) of the application area as very good condition, while 35.4% (3,347.3) was completely degraded from previously existing Tom Price Mine and associated infrastructure (ENV, 2013).
Climate and landform	The application area is mapped within elevations of 700-1,100 meters Australian Height Datum (GIS Database). The climate for the Pilbara region is semi-arid to tropical with an annual average rainfall of approximately 311.6 millimetres recorded at Paraburdoo Aero (BoM, 2024; CALM, 2002).
Soil description and land degradation risk	The land systems are mapped, and soils described as (DPIRD, 2024; Van Vreeswyk *et al*., 2004; GIS Database): • **Newman (285Ne):** rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands. Plateaux, ridges and mountain consist of soils described as stony soils, red shallow loams, and some red shallow sands. This system covers roughly 5,875 hectares (62.1%) of the application area (ENV, 2013). • **Rocklea (285Rk):** basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex and occasionally soft spinifex grasslands with scattered shrubs. Hills, ridges, plateaux and upper slopes consist of soils described as stony soils, red shallow loams, and calcareous shallow loams, and lower slopes consist of red shallow loams and red shallow sandy duplex soils. This system covers approximately 454 hectares (4.8%) of the application area (ENV, 2013). • **Boolgeeda (285Bg):** stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands. Stony lower plains consist of soil characterised as red loamy earths and stoney slopes and upper plains consist of red shallow loams or red loamy earths. This system covers approximately 1,243 hectares (13.14%) of the application area (ENV, 2013). • **Platform (285Pl):** dissected slopes and raised plains supporting shrubby hard spinifex grasslands. This system covers approximately 1,183 hectares (12.51%) of the application area ENV, 2013). • **McKay (285Mk):** hills, ridges, plateaux remnants and breakaways of meta sedimentary and sedimentary rocks supporting hard spinifex grasslands with acacias and occasional eucalyptus. Hills, ridges, breakaways and plateaux remnants consist of stony soils and

	stony plains comprise of red deep loamy duplex soils, with minor red shallow loams and red shallow sandy duplex soils. This system covers approximately 479 hectares (5.06%) of the application area (ENV, 2013). • **Robe (285Ro):** low plateaux, mesas and buttes of limonite supporting soft spinifex and occasionally hard spinifex grasslands. Low plateaux, mesas and buttes consist of stony soils, and shallow gravel soils, while lower slopes consist of red shallow loams and minor calcareous shallow loams. This system covers approximately 230 hectares (2.43%) of the application area (ENV, 2013). None of the land systems within the application area are generally susceptible to erosion or land degradation (ENV, 2013). Platform and Robe systems are geographically restricted or have only small areas in the Pilbara region (ENV, 2013).
Waterbodies	The desktop assessment and aerial imagery indicated that numerous minor ephemeral drainage lines transect the area proposed to be cleared, one major watercourse and one tailings dam (ENV, 2013; GIS Database). There are no Wetlands of International Importance or Nationally Important Wetlands that occur within the application area or within close proximity (30 kilometres) (GIS Database).
Hydrogeography	The application area is located within the Pilbara Ground Water Area proclaimed under the *Rights in Water and Irrigation Act 1914* and within the Paraburdoo Water Reserve (WT9095) (Priority 1) proclaimed under the *Country Areas Water Supply Act 1947.* The groundwater salinity is mapped as 500-1,000 milligrams per litre total dissolved solids which is described as fresh to marginal (GIS Database).
Flora	There are no records of Threatened flora within the application area or local surrounds (30 kilometres) (Rio Tinto, 2023a; GIS Database). There are records of 12 Priority flora within the application area and an additional 11 priority flora within 30 kilometres of the application area (GIS Database).
Ecological communities	There are no records of Threatened Ecological Communities (TEC) or Priority Ecological Communities (PEC) within the application area or local surrounds (30 kilometres) (GIS Database).
Fauna	There are records of six conservation significant fauna species within the application area (ENV, 2013; Rio Tinto, 2023a; GIS Database) and eight within the local surrounds (30 kilometres) (GIS Database).
Fauna habitat	A level 1 fauna survey was conducted over the application area by ENV during August 2011. The following habitat types were described and mapped within the application area (ENV, 2013): • **gorges/gully**: complex vegetation with a diverse range of microhabitats, such as outcropping of bedrock that provides shelter in the form of overhangs, cracks, crevices, deep caves and areas for water to pool during wet season. Vegetation provides microhabitat in the form of logs, debris and hollows. Some areas contain permanent or semi/permanent water sources. This habitat consists of deep caves that have relatively constant temperate and humidity. • **drainage lines**: linear habitat that begins at the top of hills and runs to the surrounding plains or encompasses small tributaries that eventually flow into larger river or major drainage habitat types. Moderate diversity of microhabitats with some logs, debris, tree hollows and occasional soft soils. This habitat acts as a wildlife corridor that helps some fauna disperse across the landscape. • **hill crest/slopes:** this habitat was located atop the larger hills of the application area and have a low diversity of microhabitats with few to no logs, and little woody debris, and few tree hollows. Soil was hard and not unsuitable for burrowing fauna. Bedrock was exposed in some areas that provided habitat in the form of cracks and crevices. • **low hills**: characterised by low undulating hills with moderate vegetation complexity. There was a low diversity of microhabitats with few logs and woody debris, very few tree hollows. The soil was hard and unsuitable for burrowing fauna. • **stony plain**: this habitat contains limited microhabitats with dominant acacia species providing no tree hollows, few logs, limited leaf litter and sparse vegetation. • **cleared/developed/rehabilitated**

A.2. Flora analysis table

With consideration for the site characteristics set out above, a 30 kilometre radius of relevant datasets (see Appendix H.1), and biological survey information, impacts to the following conservation significant flora required further consideration.

Species name	Suitable habitat features?	Suitable vegetation type?	Suitable soil type?	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify?
Priority 1						
Calotis squamigera	Y	Y	Y	<26	5	N
Eucalyptus lucens	Y	Y	Y	0	3	Y
Priority 2						
Indigofera ixocarpa	Y	Y	Y	0	19	Y
Pentalepis trichodesmoides subsp. *hispida*	Y	Y	Y	0	14	N
Scaevola sp. Hamersley Range basalts (S. van Leeuwen 3675)	Y	Y	Y	<2	12	Y
Priority 3						
Amaranthus centralis	Y	Y	Y	0	7	Y
Aristida jerichoensis var. *subspinulifera*	Y	Y	Y	<22	45	N
Astrebla lappacea	N	Y	N	<17	10	N
Dampiera anonyma	Y	Y	Y	0	32	Y
Euphorbia australis var. glabra	N	N	N	<25	23	Y
Geijera salicifolia	Y	Y	Y	0	9	Y
Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	N	N	N	<17	53	Y
Indigofera rivularis	Y	Y	Y	<29	61	Y
Olearia mucronata	Y	Y	Y	0	14	Y
Ptilotus subspinescens	Y	Y	Y	<22	18	Y
Sida sp. Hamersley Range (K. Newbey 10692)	Y	Y	Y	0	18	Y
Swainsona thompsoniana	N	N	N	<26	28	Y
Vittadinia sp. Coondewanna Flats (S. van Leeuwen 4684)	Y	Y	Y	<21	26	Y
Priority 4						
Acacia bromilowiana	Y	Y	Y	0	30	Y
Eremophila magnifica subsp. *magnifica*	Y	Y	Y	0	46	Y
Lepidium catapycnon	Y	Y	Y	0	39	Y
Ptilotus trichocephalus	N	N	Y	<23	20	Y
Sida sp. Barlee Range (S. van Leeuwen 1642)	Y	Y	Y	0	59	Y

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

A.3. Fauna analysis table

With consideration for the site characteristics set out above, a 30 kilometre radius of relevant datasets (see Appendix G.1), and biological survey information, impacts to the following conservation significant fauna required further consideration.

Species name	Conservation status	Suitable habitat features?	Distance of closest record to application area (km)
Mammals			
Northern quoll (*Dasyurus hallucatus*)	EN	Y	<13
Ghost bat (*Macroderma gigas*)	VU	Y	0
Pilbara leaf-nose bat (Pilbara form) (*Rhinonicteris aurantia*)	VU	Y	<5
Long-tailed dunnart (*Antechinomys longicaudata,* formerly *Sminthopsis longicaudata*)	P4	Y	0
Northern short-tailed mouse (*Leggadina lakedownensis*)	P4	Y	0
Western pebble-mound mouse (*Pseudomys chapmani*)	P4	Y	0
Reptiles			
Pilbara olive python (*Liasis olivaceus barroni*)	VU	Y	0
Lined soil-crevice skink (Dampier) (*Notoscincus butleri*)	P4	Y	<18
Birds			
Peregrine falcon (*Falco peregrinus*)	OS	Y	0
Striated grasswren (sandplain) (*Amytornis striatus striatus*)	P4	Y	<2
Glossy ibis (*Plegadis falcinellus*)	MI	N	<2
Long-toed stint (*Calidris subminuta*)	MI	N	<3
Common sandpiper (*Actitis hypoleucos*)	MI	N	<2
Wood sandpiper (*Tringa glareola*)	MI	N	<3

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority, OS: other species protected, MI: migratory

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The application area has records of 12 priority flora species within the application area and potential habitat for an additional six priority flora species (ENV, 2013; Rio Tinto, 2023a; GIS Database).	May be at variance *as per CPS 5795/4*	Yes *Refer to Section 3.2.1, above.*
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The area proposed to be cleared potentially contains critical habitat for conservation significant fauna.	May be at variance *as per CPS 5795/4*	Yes *Refer to Section 3.2.2, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The area proposed to be cleared is unlikely to contain Threatened flora species listed under the BC Act (GIS Database).	Not likely to be at variance *as per CPS 5795/4*	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (d): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."* Assessment: There are no records of TEC's occurring within the application area or local surrounds (GIS Database).	Not likely to be at variance *as per CPS 5795/4*	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The extent of the mapped vegetation types are consistent with the national objectives and targets for biodiversity conservation in Australia. The current extent of vegetation associations remaining (Government of Western Australia, 2019): • Hamersley 567: 99.5% (774,213 hectares) • Hamersley 82: 99.5% (2,550,888 hectares) • Hamersley 162: 98.65% (19,739 hectares) The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area (GIS Database).	Not at variance *as per CPS 5795/4*	No
Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."* Assessment: Given the distance to the nearest conservation area (GIS Database), the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.	Not likely to be at variance *as per CPS 5795/4*	No
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: There are six vegetation associations (D1 to D6) recorded to have an association with a watercourse (ENV, 2013; Appendix D, Appendix E). Areas defined as gorges often include semi-permanent or permanent pools of water at their base that provide refuge sites for humidophiles and fire tolerant species (ENV, 2013). There are numerous ephemeral drainage lines identified mostly between low hills, at the base of Marra Mamba Ridge and one major drainage line on the southeastern boundary (ENV, 2013). Major drainage line vegetation association D5 represents a potential groundwater dependent ecosystem for species such as *Eucalyptus victrix* and *Eucalyptus camaldulensis* (ENV, 2013). The total area of major and minor drainage lines comprises of approximately 271.5 ha (2.9%) of the application area, however vegetation association D5 is only present in two small areas (ENV, 2013). Impacts to vegetation associated with watercourses can be minimised by the implementation of a watercourse management condition.	At variance *as per CPS 5795/4*	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils have a low susceptibility to erosion and land degradation (ENV, 2013; GIS Database), however, given the extent of cleared areas increases the risk of wind and water erosion. Potential impacts can be minimised with the implementation of a staged clearing condition.	Not likely to be at variance *as per CPS 5795/4*	No
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: The application area is located in the Paraburdoo Water Reserve, a Public Drinking Water Source Area (PDWSA) listed as Priority 1 (P1) in 2018 (DWER, 2023; GIS Database). The Paraburdoo Water Reserve drinking water source protection plan –	Not likely to be at variance *as per CPS 5795/4*	No

Assessment against the clearing principles	Variance level	Is further consideration required?
WRP 147 was published in 2013 to help protect the quality of water (Government of Western Australia, 2013). Clearing activities for mineral operations and exploration are compatible with P1 PDWSA as long as best practices and conditions listed in the Water Quality Protection Note 25 are met (DWER, 2021a).		
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: Activities at Tom Price mine site has not been documented to cause or exacerbate the instance of flooding in the area (ENV, 2013). Localised flooding occurs seasonally in the region after intense rainfall (CALM, 2002). Given the extent of clearing, alteration of minor watercourses and the topography within the application area consisting of gorges, gullies, hills and slopes, there is potential for an increase in runoff which may increase the risk of local flooding in low lying areas, mainly following significant rainfall events. Potential impacts can be minimised with the implementation of staged clearing and watercourse manage conditions.	May be at variance *changed from CPS 5795/4*	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. Representative photos of vegetation associated with drainage lines and habitat features within the application area

Photo 1: Vegetation association representing minor drainage line (D1) (ENV, 2013).

Photo 2: Vegetation association representing minor drainage line (D2) (ENV, 2013).

Photo 3: Vegetation association representing minor drainage line (D3) (ENV, 2013).

Photo 4: Vegetation association representing minor drainage line (D4) (ENV, 2013).

Photo 5: Vegetation association representing major drainage line (D5) (ENV, 2013).

Photo 6: Vegetation association representing minor drainage line (D6) (ENV, 2013).

Photo 7: Semipermanent water in the gorge (ENV, 2013).

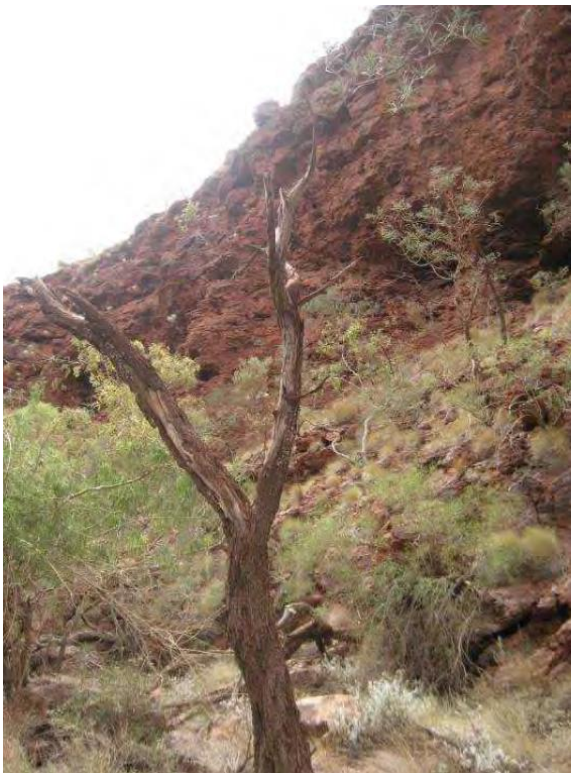

Photo 8: Fauna habitat assessment containing caves suitable for bats (ENV, 2013).

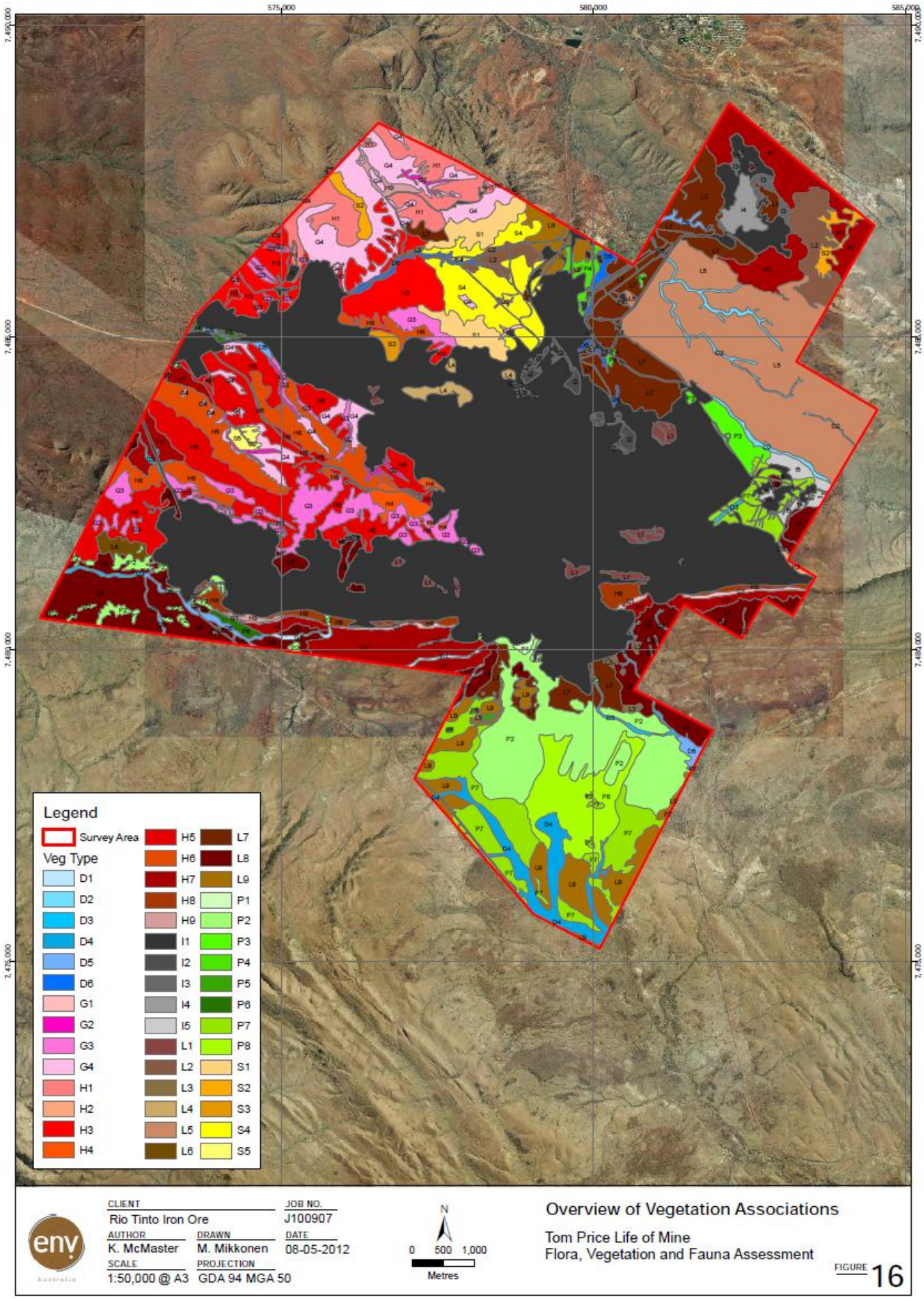

Figure 1. Vegetation associations of Tom Price Mine (ENV, 2013).

Hill Tops

H1 EgEkAhPl TwERm — *Eucalyptus gamophylla, E. kingsmillii* subsp. *kingsmillii* and *E. repullulans* open tree mallee over *Acacia hamersleyensis* and *Petalostylis labicheoides* high open shrubland over *Triodia wiseana* open hummock grassland over *Eriachne mucronata* very open tussock grassland on skeletal red-brown silty clay loam on high rocky hill tops

H2 ElAp(s)Tw — *Eucalyptus leucophloia* subsp. *leucophloia* and *Acacia pruinocarpa* low woodland over mixed *Acacia* spp. open scrub over *Triodia wiseana* closed hummock grassland on hill tops[1]

H3 ElAbAmTw — *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia bivenosa* and *A. maitlandii* high shrubland over *Triodia wiseana* very open hummock grassland on red-brown sandy loam on hill tops and upper slopes

H4 ChEkEg AhTb — *Corymbia hamersleyana, Eucalyptus kingsmillii* subsp. *kingsmillii* and *E. gamophylla* very open mallee over *Acacia hamersleyensis* high shrubland over *Triodia brizoides* open hummock grassland on skeletal red-brown silty clay on upper slopes of high rocky hills

H5 ChElAh AmTb — *Corymbia hamersleyana* and *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia hamersleyensis* and *A. maitlandii* open shrubland over *Triodia brizoides* hummock grassland on skeletal red-brown sandy loam on high rocky hill slopes

H6 HcAarTb — *Hakea chordophylla* scattered tall shrubs over *Acacia arida* open shrubland over *Triodia brizoides* hummock grassland on red-brown silty clay on upper slopes of high rocky hills

H7 ChElAbTw THt — *Corymbia hamersleyana* and/or *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia bivenosa, A. inaequilatera* and *Petalostylis labicheoides* scattered tall shrubs to open scrub over *Triodia wiseana* open hummock grassland over *Themeda triandra* scattered tussock grasses on red-brown sandy clay on hill tops and slopes[1]

H8 ElEgAhAb Tw — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *E. gamophylla* scattered mallees over *Acacia hamersleyensis* and *A. bivenosa* shrubland over *Triodia wiseana* hummock grassland on hill tops[1]

H9 ElTw — *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Triodia wiseana* hummock grassland on skeletal red-brown silty clay on high ridges and hill tops

Gorges, Gullies and Steep Slopes

G1 DpeDpTHt ERlm — *Dodonaea petiolaris* and *D. pachyneura* open shrubland over *Themeda triandra* and *Eriachne mucronata* open tussock grassland over *Rhodanthe margarethae* scattered herbs on breakaways on skeletal red-brown clay loam on steep slopes and at the base of breakaways

G2 AapApSAl ERlmARo — *Acacia aptaneura* and *A. pruinocarpa* high open shrubland over *Santalum lanceolatum* open shrubland over *Eriachne mucronata* and *Aristida obscura* very open tussock grassland on red-brown sandy loam in the base of gorges and gullies and on very steep slopes

G3 ChAhTb — *Corymbia hamersleyana* low open woodland over *Acacia hamersleyensis* high open shrubland over *Triodia brizoides* open hummock grassland on red-brown sandy loam on the slopes of gorges and gullies and on steep slopes

G4 ElEgTe — *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *E. gamophylla* scattered mallees over *Triodia epactia* hummock grassland on red-brown sandy loam on the slopes of gorges and gullies and on steep slopes of high rocky hills

Gorges (in G2, G3 & G4)

Hill Slopes

S1 ElErAb TwERlm — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *E. repullulans* open mallee over *Acacia bivenosa* scattered tall shrubs over *Triodia wiseana* scattered hummock grassland over *Eriachne mucronata* scattered tussock grasses on skeletal brown-orange silty clay on shale slopes

S2 AaAx TbTp — *Acacia xiphophylla* and *Acacia aneura* high shrubland over *Triodia brizoides* and *T. pungens* open to very open hummock grassland on skeletal red-brown silty clay on hill slopes[2]

S3 AcAaAmPl AkAspTwTp — *Acacia citrinoviridis* and *A. aneura* var. *aneura* low open woodland over *A. maitlandii, Petalostylis labischeoides* and *A. kempeana* open heath over *A. spondylophylla* low shrubland over *Triodia wiseana* and *T. pungens* hummock grassland on hill slopes[3]

S4 ElAbSTs TwENspp — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia bivenosa* and *Stylobasium spathulatum* open shrubland over *Triodia wiseana* very open hummock grassland over *Enneapogon* spp. very open tussock grassland on red-brown clayey sand on hill slopes

S5 ElAp AmaTp — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia pruinocarpa* and *A. marramamba* open shrubland over *Triodia epactia* open hummock grassland on red-brown silty clay on hill slopes

Low Hills

L1 AcElClfDv AmTe — *Acacia citrinoviridis, Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia ferriticola* subsp. *ferriticola* low open forest over *Dodonaea viscosa* and *A. maitlandii* shrubland over *Triodia epactia* hummock grassland on low hills[3]

L2 ElTb — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees to low open woodland occasionally over *E. repullulans* scattered mallees occasionally over *Acacia bivenosa* and *Petalostylis labischeoides* high open shrubland over *Triodia brizoides* very open hummock grassland on red-brown silty clay on rocky low hills

L3 AapSaaERc TwERmSPa — *Acacia aptaneura* low open woodland over *Senna artemisioides* subsp. x *artemisioides* and *Eremophila cuneifolia* scattered low shrubs over *Triodia wiseana* very open hummock grassland over *Eriachne mucronata* and *Sporobolus australasicus* very open tussock grassland on red-brown sand on low hills

L4 AaaArAp TbERlm — *Acacia* aff. *aneura, A. rhodophloia* and *A. pruinocarpa* tall closed scrub over *Scaevola acacioides* and *Dodonaea pachyneura* scattered shrubs over *Triodia brizoides* open hummock grassland over *Eriachne mucronata* scattered tussock grasses on low hills[4]

L5 ElEgPlHc AhTw — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *E. gamophylla* scattered mallees over *Petalostylis labischioides, Hakea chordophylla* and *Acacia hamersleyensis* open shrubland to high open shrubland over *Triodia wiseana* very open hummock grassland on red-brown sandy loam on low rocky hills

L6 ChElTeTw — *Corymbia hamersleyana* and *Eucalyptus leucophloia* subsp. *leucophloia* open woodland over *Triodia epactia* and *T. wiseana* open hummock grassland on low hills[3]

L7 EgAeAp AhTw — *Eucalyptus gamophylla* scattered mallees over *Acacia exilis, A. pruinocarpa* and *A. hamersleyensis* high open shrubland over *Triodia wiseana* open hummock grassland on red-brown sandy clay on low rocky hills

L8 ElApAe AbTw — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia pruinocarpa, A. exilis* and *A. bivenosa* low scattered shrubs over *Triodia wiseana* very open hummock grassland on red-brown sandy loam on low hills

L9 ElEg ErTw — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees to low open woodland over *E. gamophylla* and/or *E. repullulans* very open mallee over *Triodia wiseana* open hummock grassland on red-brown silty clay on low hills

CLIENT: Rio Tinto Iron Ore | JOB NO.: J100907
AUTHOR: K. McMaster | DRAWN: M. Mikkonen | DATE: 25-01-2013
SCALE: N/A @ A3 | PROJECTION: N/A

[1] Based on Mapping by Lindbeck and Associates 2007
[2] Based on Mapping by Mattiske 1990
[3] Based on Mapping by Pilbara Flora 2008
[4] Based on Mapping by Biota 2009

Vegetation Associations Legend Part A
Tom Price Life of Mine Flora, Vegetation and Fauna Assessment
FIGURE 16a

Plains

P1 ElApTw — *Eucalyptus leucophloia* subsp. *leucophloia* and *Acacia pruinocarpa* low woodland over *Triodia wiseana* open hummock grassland on terraced plains[1]

P2 AapAp AayTw — *Acacia aptaneura, A. pruinocarpa* and *A. ayersiana* high shrubland to low woodland over *Triodia wiseana* scattered hummock grasses rehabilitated community on red-brown sandy loam on rocky plains

P3 ErAapAco ApTwTm — *Eucalyptus repullulans* very open mallee over *Acacia aptaneura, A. colei* var. *colei* and *A. pruinocarpa* high shrubland over *Triodia wiseana* and *T. melvillei* very open hummock grassland on red-brown sandy clay on rocky plains

P4 AapRe CHRfCc — *Acacia aptaneura* open scrub over *Rhagodia eremaea* low open shrubland over *Chrysopogon fallax* and **Cenchrus ciliaris* tussock grassland on red-brown sandy clay on alluvial plains

P5 AxTl — *Acacia xiphophylla* high shrubland over *Triodia longiceps* very open hummock grassland on red-brown clay loam on a rocky plain

P6 ApAapDla TlARin — *A. pruinocarpa* and *A. aptaneura* open shrubland over *Dipteracanthus australasicus* subsp. *australasicus* low open shrubland over *Triodia longiceps* scattered hummock grassland over *Aristida ingrata, Themeda triandra* and *Sporobolus australasicus* very open tussock grassland on red-brown silty clay on alluvial plains

P7 AapAay ApAkTm — *Acacia aptaneura, A. ayersiana* and *A. pruinocarpa* shrubland to low woodland over *A. ayersiana* and *A. kempeana* scattered tall shrubs over *Triodia melvillei* open hummock grassland on red-brown silty clay on low hills

P8 AsAbTl ARiTHt — *Acacia synchronicia* and *A. bivenosa* scattered shrubs over *Triodia longiceps* very open hummock grassland over *Aristida latifolia* and *Themeda triandra* open tussock grassland rehabilitated community on soft red-brown sandy clay on rocky plains

Drainage Lines

D1 EgAatTwTHt — *Eucalyptus gamophylla* scattered mallees over *Acacia atkinsiana* open scrub over *Triodia wiseana* open hummock grassland over *Themeda triandra* very open tussock grassland on red-brown clayey loam in minor drainage lines

D2 ElPlGrAcTHt ERlm — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Petalostylis labicheoides, Gossypium robinsonii* and *Acacia citrinoviridis* open scrub over *Themeda triandra* and *Eriachne mucronata* open tussock grassland on red-brown sandy clay in minor drainage lines

D3 ElAayApAc TwTe — *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia ayersiana, A. pruinocarpa* and *A. citrinoviridis* high open shrubland over *Triodia wiseana* and *T. epactia* open hummock grassland on red-brown sandy clay in minor drainage lines

D4 EluElEkTl ARiTHt — *Eucalyptus lucasii, E. leucophloia* subsp. *leucophloia* and *E. kingsmillii* subsp. *kingsmillii* very open mallee over *Triodia longiceps* open hummock grassland over *Aristida inaequiglumis* and *Themeda triandra* open tussock grassland on red-brown sandy clay loam in drainage lines

D5 EvExAcTHt CEc — *Eucalyptus victrix* open woodland over *E. xerothermica* scattered low trees over *Acacia citrinoviridis* high open shrubland over *Themeda triandra* and **Cenchrus ciliaris* tussock grassland on red-brown sandy clay in minor drainage lines

D6 ExAtTwCEc — *Eucalyptus xerothermica* and *E. leucophloia* subsp. *leucophloia* open woodland over *Acacia tumida* var. *pilbarensis, A. maitlandii* and *Stylobasium spathulatum* high open shrubland over *Triodia wiseana* and *T. angusta* scattered hummock grasses over **Cenchrus ciliaris* and *Themeda triandra* tussock grassland on red-brown sandy clay in drainage lines

Impacted Areas

I1 CD — Completely degraded/ cleared areas including mining infrastructure and tracks

I2 *LI*Cc — **Leucaena leucocephala* low woodland over **Cenchrus ciliaris* tussock grassland on red-brown sandy clay on plains in previously cleared areas

I3 *TAa — **Tamarix aphylla* high shrubland to low open forest on red-brown cracking clay of tailings dam

I4 TYd — *Typha domingensis* sedgeland on red-brown cracking clay of tailings dam

I5 D'AapAayAp ElTmCc — Degraded *Acacia aptaneura, A. ayersiana, A. pruinocarpa* and *Eucalyptus leucophloia* subsp. *leucophloia* high open shrubland to low open woodland over *Triodia melvillei* open hummock grassland over **Cenchrus ciliaris* open tussock grassland on red-brown clay on rocky plains and low rocky hills

CLIENT: Rio Tinto Iron Ore | JOB NO.: J100907
AUTHOR: K. McMaster | DRAWN: M. Mikkonen | DATE: 25-01-2013
SCALE: N/A @ A3 | PROJECTION: N/A

[1] Based on Mapping by Lindbeck and Associates 2007
[2] Based on Mapping by Mattiske 1990
[3] Based on Mapping by Pilbara Flora 2008
[4] Based on Mapping by Biota 2009

Vegetation Associations Legend Part B
Tom Price Life of Mine Flora, Vegetation and Fauna Assessment
FIGURE 16b

Appendix F. Mapped areas of clearing and rehabilitation under the current permit

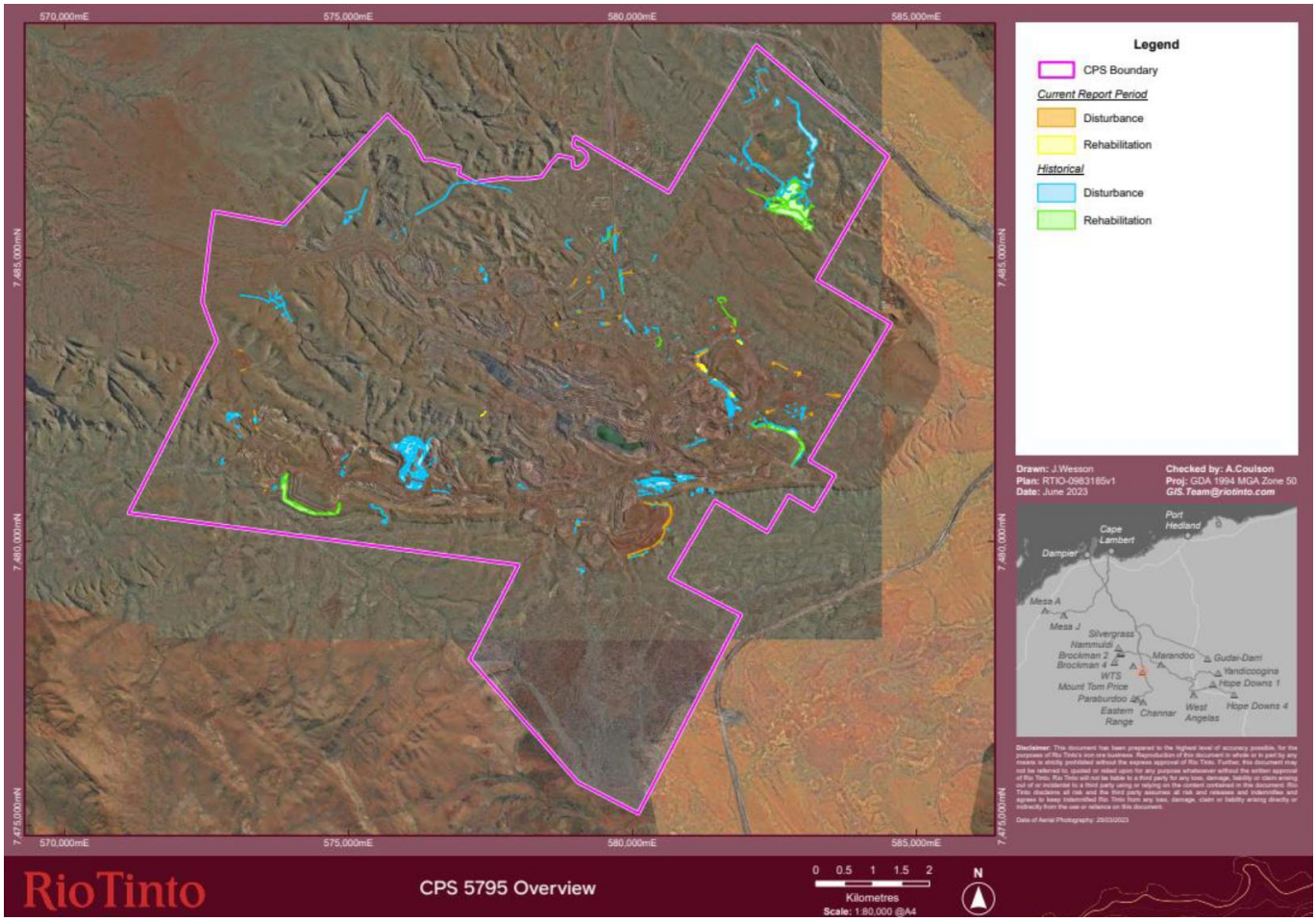

Figure 2: Mapped areas of clearing and rehabilitation under the current permit (Rio Tinto, 2023b)

Appendix G. Athel pine (*Tamarix aphylla)* within the waste fines storage facility

Photo 9: DEMIRS site inspection (March 2018) of athel pine in waste fines storage facility.

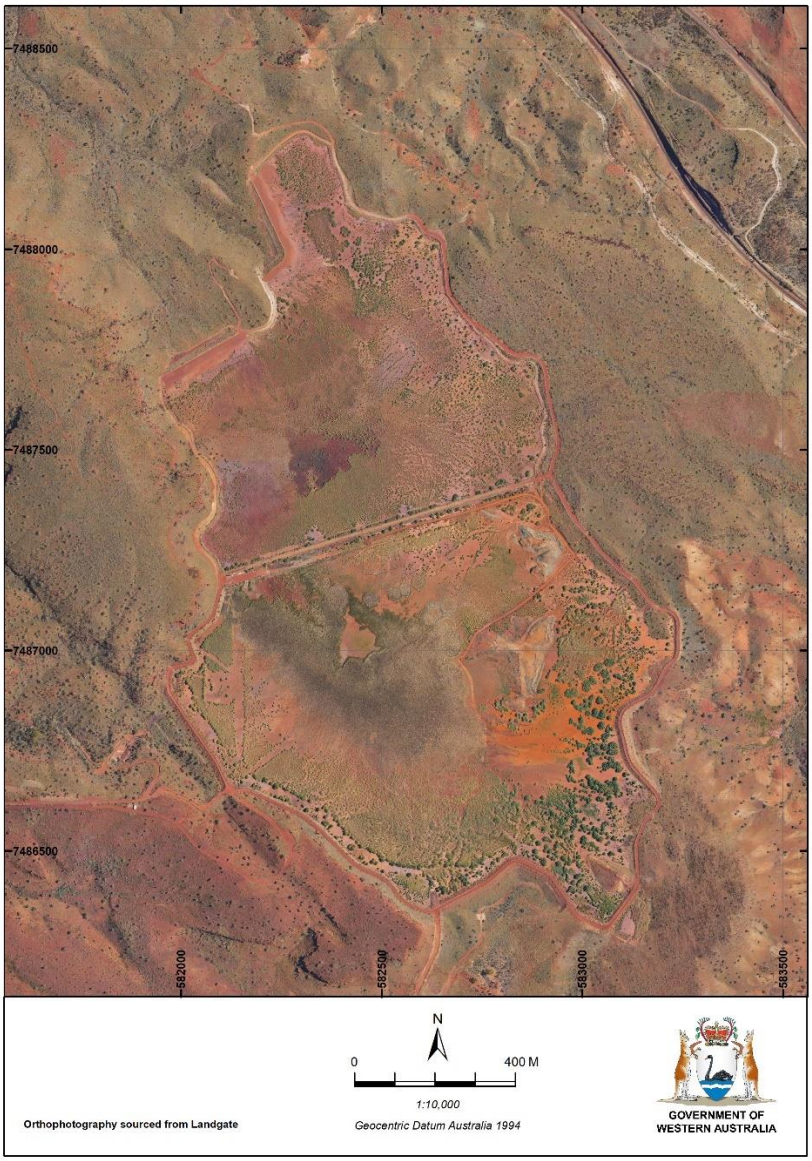

Figure 3. Aerial imagery of waste fines storage facility.

Appendix H. Sources of information

H.1. GIS databases

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

- 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)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)

- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

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

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4. Glossary

Acronyms:

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

Definitions:

{DBCA (2023) 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 the species of fauna that are listed as critically endangered, endangered or vulnerable threatened species.

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

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

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

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

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

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

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

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

Extinct Species:

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

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

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

Specially protected species:

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

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

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

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

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

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

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

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

P **Priority species:**

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

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

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

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

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

P1 **Priority One - Poorly-known species – known from few locations, none on conservation lands**
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, for example, agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation.

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

P2 **Priority Two - Poorly-known species – known from few locations, some on conservation lands**
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, for example, national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation.

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

P3 **Priority Three - Poorly-known species – known from several locations**
Species that are known from several locations and the species does not appear to be under imminent threat or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat.

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

P4 **Priority Four - Rare, Near Threatened and other species in need of monitoring**
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that are

close to qualifying for vulnerable but are not listed as a conservation dependent specially protected species.
(c) Species that have been removed from the list of threatened species or lists of conservation dependent or other specially protected species, during the past five years for reasons other than taxonomy.
(d) Other species in need of monitoring.

Principles for clearing native vegetation:

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

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

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

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

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

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

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

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

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

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