

Pro Forma: Advice for Native Vegetation Clearing Permit amendment pathway

Application to extend clearing boundary

Department of Mines, Industry Regulation and Safety (DMIRS) requires that amendments to clearing permits, including administrative amendments, be reviewed. The purpose of the review is to clarify whether there have been any substantial changes in conservation values and/or impacts within the application area since the original assessment. Such changes may result in supporting surveys no longer being adequate to support the revised assessment and/or change the outcomes when assessed against the 10 Clearing Principles listed under Schedule 5 of the *Environmental Protection Act 1986*.

The purpose of this pro forma is to provide DMIRS with information on:

- changes in conservation values since the original assessment.
- the significance of those changes; and
- the appropriate approval pathway for the area in question.

Where demonstrated through this pro forma, that previous survey information meets current regulator expectations and no substantial changes to known conservation values and/or clearing impacts exist, Rio Tinto Iron Ore (RTIO) would not pursue further survey work to support the administrative amendment.

Where previous supporting surveys are no longer adequate to meet current regulator expectations, or there have been significant changes to the known conservation values since assessment was made, supplementary supporting information will accompany an amendment to the NVCP or new clearing permit application. Rio Tinto will seek confirmation from DMIRS on the appropriate pathway.

Current		Proposed	
CPS#	6689/6	CPS#	6689/7
No clearing after date	31/12/2025	No clearing after date	31/12/2027
Expiry date	31/12/2030	Expiry date	31/12/2035
Clearing approved (ha)	1490		
Clearing carried out to date (ha)	212.25		
Rehabilitation carried out to date (ha)	177.5		
Justification of extension and boundary change:	<p>CPS 6689 is required for ongoing exploration activities around the Mesa A mine.</p> <p>A proposed upgrade to the Mesa A construction camp is proposed to support future expansions works within the area.</p> <p>Boundary change of 29.1 ha (6.2 ha of native vegetation, and 22.9 ha of previously cleared areas) (referred to as the Amendment Area).</p> <p>Extension to the no clearing after date from 2025 through to 2027 and expiry date from 2030 through to 2035 for the area subject to CPS 6689/6.</p>		

To support this application a desktop assessment has been completed of biological values recorded within the Amendment Area. A number of biological surveys have been completed since the previous amendment in 2019, the desktop below also outlines where additional values have been identified with the CPS 6689 extent (Application Area) that were not known at the time of the previous amendment.

Bio Input/Desktop assessment

Date/s of field surveys:

Flora and vegetation survey (Biota, 2006a):

- 29 October 2006: vegetation mapping.
- 25 – 29 October 2006: targeted flora survey.

Targeted Night Parrot survey (Astron, 2017):

- 13 – 14 and 17 September 2017

Targeted Ghost Bat survey (Rio Tinto, 2017a):

- 17 – 19 October 2015
- 4 – 24 May 2016
- 11 – 15 July 2016
- 8 – 9 September 2016

Targeted Pilbara Leaf-nosed Bat survey (Rio Tinto, 2017b):

- 17 – 19 October 2015
- 14 – 15 January 2016
- 4 – 24 May 2016
- 26 – 27 May 2016
- 14 – 15 July 2016
- 30 April – 1 May 2017
- 29 – 31 May 2017
- 10 – 12 July 2017

Targeted Ghost Bat survey (Rio Tinto & Biologic, 2019):

- November 2018
- March 2019

Targeted *Abutilon* sp. Onslow (F. Smith s.n. 10/9/61) survey (Rio Tinto, 2019b):

- 13 – 15 June 2019

Targeted *Abutilon* sp. Onslow (F. Smith s.n. 10/9/61) survey (Rio Tinto, 2019a):

- 24 – 27 September 2019

Targeted *Abutilon* sp. Onslow (F. Smith s.n. 10/9/61) survey (Astron, 2020b):

- 23 October 2019

Targeted *Abutilon* sp. Onslow (F. Smith s.n. 10/9/61) survey (Astron, 2020a):

- 22 – 23 September 2020

Targeted *Abutilon* sp. Onslow (F. Smith s.n. 10/9/61) survey (Astron, 2022):

- 28 September – 1 October 2021

Targeted *Abutilon* sp. Onslow (F. Smith s.n. 10/9/61) survey (Biologic, 2022a):

- 18 – 23 July 2021

Targeted *Abutilon* sp. Onslow (F. Smith s.n. 10/9/61) survey (Biologic, 2022b):

- 18 – 22 July 2021

	<p>Flora and vegetation survey (Biologic, 2023):</p> <ul style="list-style-type: none"> - 24 – 31 October 2022: detailed flora and vegetation survey. Phase 1 dry season. - 6 – 10 February 2023: reconnaissance flora and vegetation survey. - 8 – 15 March 2023: detailed flora and vegetation survey. Phase 2 wet season. - 27 June – 4 July 2023: detailed and targeted flora and vegetation survey. Phase 2 dry season. - 11 – 20 July 2023: targeted flora survey.
<p>Survey type/s:</p>	<p>Biological assessments inclusive of the <u>Amendment Area</u> are detailed below and shown in Figure 1:</p> <ul style="list-style-type: none"> - Further Botanical Survey Work at Mesa A, Warramboos and Along the Fibre Optic Cable Corridor (Biota, 2006a): single-phase detailed flora and vegetation survey. - Mesa A Hub – Targeted Night Parrot Fauna Assessment, September 2017 (Astron, 2017): targeted Night Parrot survey. - Rio Tinto Ghost Bat surveys conducted in the vicinity of Mesa B and C June 2017 (Rio Tinto, 2017a): targeted Ghost Bat survey. - Rio Tinto Pilbara Leaf-nosed bat surveys conducted in the vicinity of Mesa B and C (Rio Tinto, 2017b): targeted Pilbara Leaf-nosed Bat survey. - Metadata Statement Vegetation Condition Mapping for Mesa A Hub Development Envelope (Rio Tinto, 2019c): desktop assessment. - Consolidated Fauna Habitat Mapping for the Mesa A Development Envelope 2018 (Rio Tinto, 2022): desktop assessment. - Robe Valley Next Steps Targeted Flora and Vegetation Interim Report: Survey Trip 6 (Biologic, 2023): multiple-phase detailed flora and vegetation survey. <p>In addition to the above, the broader <u>Application Area</u> includes the following biological assessments:</p> <ul style="list-style-type: none"> - Ghost Bats at Mesa F, November 2018 and March 2019 (Rio Tinto & Biologic, 2019): targeted Ghost Bat survey. - <i>Abutilon</i> sp. Onslow Warramboos Borefield Pre-clearance survey, September 2019 (Rio Tinto, 2019b): targeted flora survey. - <i>Abutilon</i> sp. Onslow Warramboos Borefield Pre-clearance Survey, October 2019 (Rio Tinto, 2019a): targeted flora survey. - Warramboos Targeted Survey <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61) (P1), October 2019 (Astron, 2020b): targeted flora survey. - Warramboos Borefield (3PN) WD Targeted <i>Abutilon</i> sp. Onslow Survey, September 2020 (Astron, 2020a): targeted flora survey. - Warramboos Borefield - <i>Abutilon</i> sp. Onslow Targeted Survey (Astron, 2022): targeted flora survey. - Targeted <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61) (P1) Searches (Biologic, 2022a): targeted flora survey. - Warramboos Borefield Targeted <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61) (P1) Searches (Biologic, 2022b): targeted flora survey. - Metadata Statement - Significant Fauna Areas at Mesa D (Rio Tinto, 2023): desktop assessment.
<p>Constraints / limitations:</p>	<p>Biota (2006a): negligible rainfall over the five months prior to the survey. Dry conditions not optimal for annual species collection. The species of conservation significance that were considered likely to occur in the area are perennial flora that would have been present despite the poor conditions.</p> <p>Astron (2017): conditions were dry with no seeding spinifex and very little seed remaining in the seed-heads of spinifex and other grasses. No rain-fed surface water was observed. These factors are not optimal for Night Parrot occurrence</p>

	<p>however they were not considered a major limitation given that the species is accepted as an arid and semi-arid specialist and would be adapted to long periods of drought. Additionally, habitat assessment was considered to be the critical component of the survey, as no survey technique can irrefutably demonstrate that Night Parrots are absent from a site (Department of Biodiversity, 2024).</p> <p>Rio Tinto (2017a): no limitations reported.</p> <p>Rio Tinto (2017b): no limitations reported.</p> <p>Rio Tinto (2019c): no limitations reported.</p> <p>Rio Tinto & Biologic (2019): no limitations reported.</p> <p>Rio Tinto (2019b): one seedling lacked identifiable features and was unable to be confirmed as <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61). Plants were in poor condition due to lack of rainfall in the month preceding the survey.</p> <p>Rio Tinto (2019a): nine individuals were unable to be confirmed as <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61). Plants were in poor condition due to lack of rainfall in the month preceding the survey.</p> <p>Astron (2020b): dry seasonal conditions.</p> <p>Astron (2020a): dry seasonal conditions and grazing.</p> <p>Astron (2022): the survey area was not comprehensively searched.</p> <p>Biologic (2022a): no limitations reported.</p> <p>Biologic (2022b): no limitations reported.</p> <p>Rio Tinto (2022): no limitations reported.</p> <p>Biologic (2023): Surveys are underway, therefore the report is in interim form, and results have not yet been finalised.</p> <p>Rio Tinto (2023): no limitations reported.</p>
<p>Have any additional field surveys been undertaken within the Permit area since the original application was submitted?</p>	<p>Yes, the following surveys were undertaken:</p> <ul style="list-style-type: none"> - Targeted Night Parrot survey in September 2017 (Astron, 2017). - Targeted Ghost Bat surveys between October 2015 and September 2016 (Rio Tinto, 2017a). - Targeted Pilbara Leaf-nosed Bat surveys between October 2015 and July 2017 (Rio Tinto, 2017b). - Targeted Ghost Bat surveys between November 2018 and March 2019 (Rio Tinto & Biologic, 2019). - Targeted <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61) survey in June 2019 (Rio Tinto, 2019b). - Targeted <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61) survey in September 2019 (Rio Tinto, 2019a). - Targeted <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61) survey in October 2019 (Astron, 2020b). - Targeted <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61) survey in September 2020 (Astron, 2020a). - Targeted <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61) survey between September and October 2021 (Astron, 2022). - Targeted <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61) survey in July 2021 (Biologic, 2022a, 2022b). - Flora and vegetation survey from October 2022 to July 2023 (Biologic, 2023).

<p>Presence of Threatened flora/fauna?</p>	<p><u>Amendment Area</u></p> <p>No Threatened flora species have been recorded within the Amendment Area, nor do any occur within a 20 km radius of the Amendment Area.</p> <p>Threatened fauna species records within 20 km of the Amendment Area are displayed in Figure 2.</p> <p>A Northern Quoll (EN, EN) record is present within the Amendment Area from 2015 in the form of secondary evidence (scats) at Mesa A Village. The next closest record of Northern Quoll is 687 m west of the Amendment Area, to the western side of North West Coastal Highway, and located in the vicinity of a breakaway.</p> <p>The following habitats are mapped within the Amendment Area (Figure 3):</p> <ul style="list-style-type: none"> - Low Hills and Slopes, 0.8 ha (2.9%). - Minor Drainage, 0.7 ha (2.6%). - Stony Plain, 4.6 ha (15.7%) - Disturbed, 22.9 ha (78.8%). <p>Northern Quoll has the potential to occur within the Amendment Area due to foraging and dispersal habitat (minor drainage), however it is not considered to rely on the habitats of the Amendment Area for its survival.</p> <p>The closest Threatened fauna record is approximately 570 m east of the Amendment Area and is for a Pilbara Leaf-nosed Bat (VU, VU), which was recorded at the base of Mesa A breakaway. No breakaways have been mapped over the Amendment Area, therefore it is unlikely that Pilbara Leaf-nosed Bats would rely on the habitats of the Amendment Area for their survival.</p> <p>Other Threatened fauna species occurring within 20 km of the Amendment Area include Ghost Bat (VU, VU) and Pilbara Olive Python (VU, VU) which are located 1.7 km east and 8.1 km east of the Amendment Area, respectively. None of the habitats of the Amendment Area are considered critical for the survival of these species.</p> <p><u>Application Area</u></p> <p>No Threatened flora species have been recorded within the Application Area, nor do any occur within a 20 km radius of the Application Area.</p> <p>Three Threatened fauna species have been previously recorded within the Application Area:</p> <ul style="list-style-type: none"> - Northern Quoll, <i>Dasyurus hallucatus</i> (EN, EN). This species was known at the time of CPS 6689/1 being granted by the Department of Mines and Petroleum (now Department of Energy, Mines, Industry Regulation and Safety, DEMIRS). - Ghost Bat, <i>Macroderma gigas</i> (VU, VU). This species was known when CPS 6689/1 was granted by DEMIRS, although it was listed as a Priority 4 species at the time. This species was listed as Vulnerable under the EPBC Act in 2016. Subsequent amendments to CPS 6689 discussed this species under the current listing. - Pilbara Leaf-nosed Bat, <i>Rhinoicteris aurantia</i> (VU, VU). This species was considered likely to occur within the Application Area when CPS 6689/1 was granted by DEMIRS. Subsequent changes to the clearing permit boundary enveloped records of this species. <p>An additional six Threatened fauna species occur within 20 km of the Application Area:</p> <ul style="list-style-type: none"> - Common Sandpiper, <i>Actitis hypoleucos</i> (MI, MI), recorded 19.5 km northeast of the Application Area. - Sharp-tailed Sandpiper, <i>Calidris acuminata</i> (MI, MI), recorded 19.5 km northeast of the Application Area. - Grey Falcon, <i>Falco hypoleucos</i> (VU, VU), recorded 10.9 km northeast of the Application Area.
--	---

	<ul style="list-style-type: none"> - Pilbara Olive Python, <i>Liasis olivaceus barroni</i> (VU, VU), recorded less than 1.0 km from the Application Area. - Blind Cave Eel, <i>Ophisternon candidum</i> (VU, VU), recorded 4 km east of the Application Area. - Wood Sandpiper, <i>Tringa glareola</i> (MI, MI), recorded 19.5 km northeast of the Application Area.
Presence of Priority flora/fauna?	<p><u>Amendment Area</u></p> <p>No Priority flora or fauna species have been recorded within the Amendment Area. Priority flora and fauna records within 20 km of the Amendment Area are shown in Figure 4 and Figure 2, respectively.</p> <p>The following vegetation types have been mapped over the Amendment Area (Figure 5):</p> <ul style="list-style-type: none"> - AiAaAbTw: <i>Acacia inaequilatera</i> scattered tall shrubs over <i>Acacia ancistrocarpa</i> and <i>A. bivenosa</i> open shrubland to shrubland over <i>Triodia wiseana</i> hummock grassland (4.6 ha, 15.7%). - ChAtuTwTe: <i>Corymbia hamersleyana</i> low open woodland over <i>Acacia tumida</i> var. <i>pilbarensis</i> tall open shrubland over <i>Triodia wiseana</i> and <i>T. epactia</i> open hummock grassland (0.7 ha, 2.6%). - ElAatAarTw: <i>Eucalyptus leucophloia</i> low scattered trees over <i>Acacia atkinsiana</i> (<i>A. arida</i>) open shrubland to tall shrubland over <i>Triodia wiseana</i> hummock grassland (0.8 ha, 2.9%). - Highly Modified: previously cleared areas devoid of native vegetation (22.9 ha, 78.8%). <p>The closest record of Priority flora species to the Amendment Area is <i>Rhynchosia bungarensis</i> (P4), located 7.7 km east of the Amendment Area. No suitable habitat for this species occurs within the Amendment Area (rock piles, gorges, alluvial soils amongst boulders), therefore it is unlikely that this species would occur.</p> <p>Other Priority flora records occurring within 20 km of the Amendment Area include:</p> <ul style="list-style-type: none"> - <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61) (P3): this taxon grows on flat hummock grassland with red-brown silty, clay loam or loamy sandplain (DBCA, 2024). The closest record is 10.1 km west of the Amendment Area. It is unlikely that this taxon would occur within the Amendment Area due to lack of suitable habitat. - <i>Eragrostis crateriformis</i> (P3): this taxon occurs on clayey loam or brown clay in creek banks and depressions (DBCA, 2024). The closest record is 10.4 km southwest of the Amendment Area. It is unlikely that this taxon would occur within the Amendment Area due to lack of suitable habitat. - <i>Euphorbia inappendiculata</i> var. <i>inappendiculata</i> (P2): this taxon occurs on red, brown clay or loam on plains (DBCA, 2024). The closest record is 16.3 km southeast of the Amendment Area. It is possible that this taxon would occur on the <i>Acacia</i> over spinifex plains of the Amendment Area (vegetation type AiAaAbTw). - <i>Indigofera rivularis</i> (P3): this taxon occurs in drainages, in high-energy creeklines, and along steep slopes. It grows on red-brown sandy clay loam, coarse alluvium, skeletal soils, and is associated with ironstone (DBCA, 2024). The closest record is 8.3 km southeast of the Amendment Area. It is considered possible that this taxon would occur in the minor drainage lines of the Amendment Area (vegetation type ChAtuTwTe). - <i>Solanum</i> sp. Red Hill (S. van Leeuwen et al. PBS 5415) (P3): this taxon grows high in landscape, on hill summits, on skeletal red brown gritty soil over Banded Iron Formation/shale (DBCA, 2024). The closest record is 18.4 km southeast of the Amendment Area. It is considered unlikely that this taxon would occur within the Amendment Area due to lack of suitable habitat.

	<ul style="list-style-type: none"> - <i>Triodia pisolitica</i> (P3): this taxon grows on skeletal soils on ironstone. It occurs on summits of mesas or other hilly areas, also recorded on midslopes and valleys, and is restricted to Robe pisolite (DBCA, 2024). The closest record is 7.8 km southeast of the Amendment Area. It is considered unlikely that this taxon would occur within the Amendment Area due to lack of suitable habitat. <p>The closest record of Priority fauna species to the Amendment Area is Western Pebble-mound Mouse (P4), which was recorded in the form of secondary evidence (a mound) 900 m west of the Amendment Area. It is likely that Western Pebble-mound Mouse occurs within the Amendment Area due to the presence of suitable habitat (Stony Plain).</p> <p>Other Priority fauna species occurring within 20 km of the Amendment Area include Brush-tailed Mulgara (P4), and Fortescue Grunter (P4), which were recorded 11.0 km southeast and 7.3 km east of the Amendment Area, respectively. The Brush-tailed Mulgara predominantly occurs in hummock grasslands (<i>Triodia</i> spp.) and shrublands on sandy soils (Menkhorst, 2021); it is unlikely that the Brush-tailed Mulgara would occur within the Amendment Area due to lack of sandy substrates. It is unlikely that the Fortescue Grunter would occur within the Amendment Area due to lack of permanent water features.</p> <p><u>Application Area</u></p> <p>One additional Priority flora species has been recorded within the Application Area since the previous amendment, <i>Eragrostis crateriformis</i> (P3). The location of Priority flora records are identified within Rio Tinto's internal works approval system as restricted areas. Wherever possible, works avoid impacting on these areas.</p> <p>The following Priority flora species have been recorded within the Application Area:</p> <ul style="list-style-type: none"> - <i>Eragrostis crateriformis</i> (P3): this species was not known to previously occur within the Application Area, and it was recently recorded north of Mesa G in 2023 (Biologic, 2023). An additional six records of this species are present within a 20 km radius of the Application Area. This species is known to grow in clayey loam or clay in creek banks and depressions. According to the Western Australian Herbarium, this species occurs in the Pilbara, Carnarvon, Great Sandy Desert, and Tanami regions (DBCA, 2024). - <i>Rhynchosia bungarensis</i> (P4): this species was known to occur within the Application Area when CPS 6689/1 was granted by DEMIRS. - <i>Triodia pisolitica</i> (P3): this species was known to occur within the Application Area when CPS 6689/1 was granted by DEMIRS, although under its previous name <i>Triodia</i> sp. Robe River (M.E. Trudgen et al. MET 12367).
<p>Presence of Threatened Ecological Communities?</p>	<p><u>Amendment Area</u></p> <p>No Threatened Ecological Communities (TECs) occur within the Amendment Area. The closest TEC is the <i>Themeda</i> grasslands on cracking clays (Hamersley Station, Pilbara) (VU), located 154.5 km southeast of the Amendment Area.</p> <p><u>Application Area</u></p> <p>No TECs occur within the Application Area. The closest TEC is the <i>Themeda</i> grasslands on cracking clays (Hamersley Station, Pilbara) (VU), which is located 125.6 km southeast of the Application Area.</p>
<p>Presence of Priority Ecological Communities?</p>	<p><u>Amendment Area</u></p> <p>The buffer of two Priority Ecological Communities (PECs) occurs within the Amendment Area (Figure 6):</p>

	<ul style="list-style-type: none"> - Subterranean invertebrate communities of mesas in the Robe Valley region (Priority 1). - Subterranean invertebrate community of pisolitic hills in the Pilbara (Priority 1). <p>Additionally, the Subterranean invertebrate community of pisolitic hills in the Pilbara PEC has also been mapped as occurring within the Amendment Area. Threats for these PECs include the removal of substrate for mining and associated hydrological changes.</p> <p><u>Application Area</u></p> <p>The buffer of four PECs occurs within the Application Area, all were known to occur at the time of the initial application for CPS 6689:</p> <ul style="list-style-type: none"> - Sand Sheet vegetation (Robe Valley) (Priority 1). This PEC was known to occur in the vicinity of the Application Area at the time that CPS 6689/1 was granted. - Subterranean invertebrate communities of mesas in the Robe Valley region (Priority 1). This PEC has also been mapped within the Application Area. This PEC was known to occur within the Application Area at the time that CPS 6689/1 was granted. - Subterranean invertebrate community of pisolitic hills in the Pilbara (Priority 1). This PEC was known to occur in the vicinity of the Application Area at the time that CPS 6689/1 was granted. - <i>Triodia pisolitica</i> (previously <i>Triodia</i> sp. Robe River) assemblages of mesas of the West Pilbara (Priority 3). This PEC has also been mapped within the Application Area. This PEC was known to potentially occur within the Amendment Area when CPS 6689/1 was granted, as vegetation analogous to the PEC was recorded.
<p>Have there been any changes to the conservation rank of species or communities identified in previous surveys?</p>	<p>During the Biota (2006a) flora surveys, the following species of conservation significance were recorded:</p> <ul style="list-style-type: none"> - <i>Abutilon trudgenii</i> ms.: previously listed as a P3 species, this is now known as <i>Abutilon</i> sp. Pilbara (W.R. Barker 2025), which is not listed as conservation significant. - <i>Sida</i> sp. Wittenoom (W.R. Barker 1962): previously listed as a P3 taxon, this is now known as <i>Sida arsiniata</i> (Barker, 2007), which is not listed as conservation significant. <p>During the Biologic (2023) flora surveys, the following species of conservation significance were recorded within the Application Area:</p> <ul style="list-style-type: none"> - <i>Rhynchosia bungarensis</i> (P4): this species was previously known as <i>Rhynchosia</i> sp. Bungaroo Creek (M.E. Trudgen 12402) and formally described in 2003. It was already listed as P4 under its previous name. <i>Rhynchosia bungarensis</i> (P4) was known to occur within the Application Area when CPS 6689/1 was granted by DEMIRS. The closest record to the Amendment Area is located 7.7 km east. It is considered unlikely that this taxon would occur within the Amendment Area due to lack of suitable habitat. - <i>Triodia pisolitica</i> (P3): this species was previously known as <i>Triodia</i> sp. Robe River (M.E. Trudgen et al. MET 12367) and was formally described in 2018 (Barrett & Trudgen, 2018). It was already listed as P3 under the previous name. <i>Triodia pisolitica</i> (P3) was known to occur within the Application Area when CPS 6689/1 was granted by DEMIRS, although under its previous name <i>Triodia</i> sp. Robe River (M.E. Trudgen et al. MET 12367). It is considered unlikely that this taxon would occur within the Amendment Area due to lack of suitable habitat.

	No changes to the conservation rank of fauna species recorded within the Application Area or Amendment Area have occurred.
Have any new species, communities or habitats of elevated environmental value been identified within the boundary of the clearing permit?	No new species, communities or habitats of elevated environmental value been identified within the Application and Amendment Areas.
Other changes relevant to conservation of significant biological values in the context of the impact assessment (e.g., changes in known species distributions, new threats etc.)?	<p><i>Velleia</i> was recently recircumscribed into <i>Goodenia</i> (Shepherd et al., 2020), and then a revision in 2023 recognised three new species, including one listed as a species of conservation concern, <i>Goodenia obscurata</i> (P3) (Shepherd & Lepschi, 2023). Records of <i>Velleia connata</i>, the closest occurring 1.3 km from the Application Area and Amendment Area, may represent <i>G. obscurata</i> (P3) or the commonly occurring <i>G. aluta</i> according to Shepherd and Lepschi (2023).</p> <p><i>Goodenia obscurata</i> (P3) occurs on floodplains or low rocky ridges, growing in red-brown sandy clay or lateritic loam over banded ironstone. It is associated with low open woodland of <i>Acacia</i> over <i>Triodia</i>, or open shrubland with a sparse overstorey of <i>Corymbia hamersleyana</i> and <i>Hakea chordophylla</i> over <i>Triodia</i>.</p> <p><i>Goodenia aluta</i> grows on red sandy gravel over sandstone, sandplains between dunes or rarely on lateritic plains, and is associated with low mallee or <i>Acacia</i> shrublands over <i>Triodia</i>.</p> <p>The records of <i>Velleia connata</i> in the vicinity of the Application and Amendment Areas are located over the Sand Sheet vegetation (Robe Valley) (Priority 1) PEC. Due to the sandy substrate the records are located on, it is likely that these are representative of the commonly occurring <i>Goodenia aluta</i>.</p>
Is a field survey required to validate desktop assessment? Why / why not?	A field survey is not required. The desktop assessment has indicated good overall coverage with few survey limitations.
Is a new survey required? Why / why not?	A new survey is not required. The current survey coverage provides a sufficient level of environmental information for the Application Area.

Based on the above information the risk of significant impacts to ecological values (flora, fauna, and ecological communities) due to extending the 'no clearing', expiry date and permit boundary is considered low.

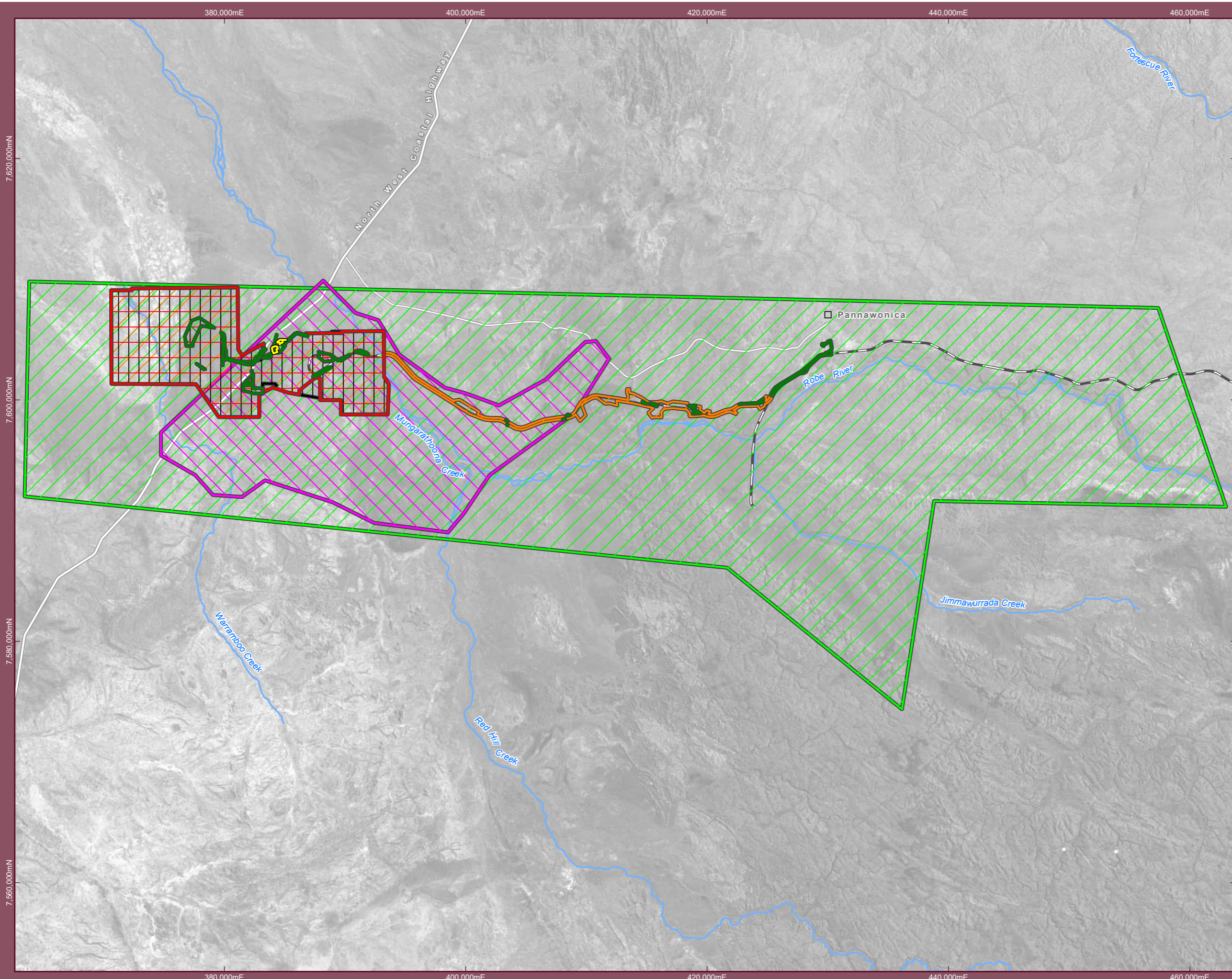
RTIO proposes an administrative amendment to extend the 'no clearing after' date, expiry date and permit boundary. DMIRS Native Vegetation Branch to advise if this approach is considered appropriate.

Desktop Assessment Completed by:

Name: Bridget Duncan
Title: Botanist Advisor

Review Completed by:

Name:
Title:

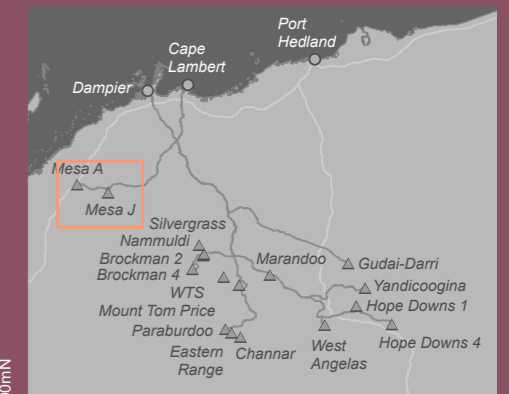


Legend

- Amendment Area
- Biological Assessment**
- Astron Environmental Services, 2017
- Biota Environmental Sciences, 2006
- Biologic Environmental Survey, 2023
- Rio Tinto, 2017
- Rio Tinto, 2019
- Rio Tinto, 2022
- Town
- Highway
- Major Road
- Rio Tinto Railway
- Major Creek

Drawn: M.Ludovico
 Plan: RTIO_1052776v1
 Date: May 2024

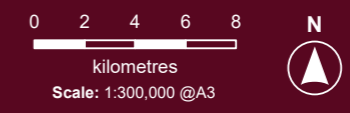
Checked by: L.F.
 Proj: GDA 1994 MGA Zone 50
 GIS.Team@riotinto.com

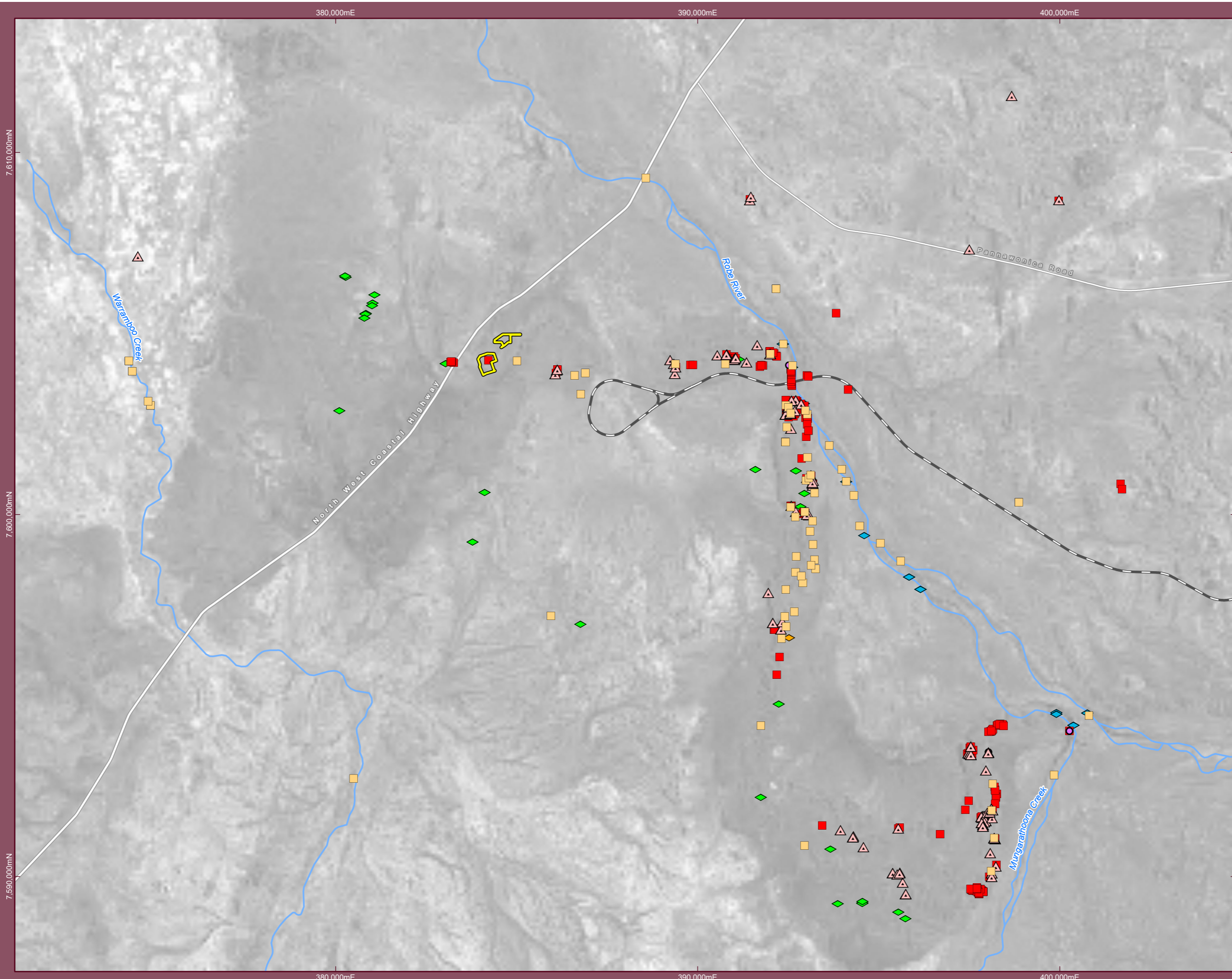


Disclaimer: Copyright in this document is owned by or is licensed to the relevant Rio Tinto Group member(s) and may contain confidential information of the relevant Rio Tinto Group member(s). This document has been prepared to the appropriate level of accuracy as required for its purposes. Reproduction, distribution or disclosure of this document in whole or in part by any means is strictly prohibited without the express written approval of the relevant Rio Tinto Group member(s). Any unauthorised use or disclosure of this document may result in loss or damage to the relevant Rio Tinto Group member(s). Further this document may not be referred to, quoted or relied upon for any purpose whatsoever without the written approval of the relevant Rio Tinto Group member(s). To the maximum extent permitted by law, the relevant Rio Tinto Group member(s): (a) will not be liable to a third party for any loss, damage, liability or claim arising out of or incidental to a third party using or relying on the content contained in this document, whether such use was authorised or not; and (b) disclaims all risk, representations and warranties (express or implied), and the third party assumes all risk and releases and indemnifies and agrees to keep indemnified the relevant Rio Tinto Group member(s) from any loss, damage, claim or liability arising directly or indirectly from the use or reliance on this document.



Figure 1: Previous Biological Assessments Inclusive of the Amendment Area



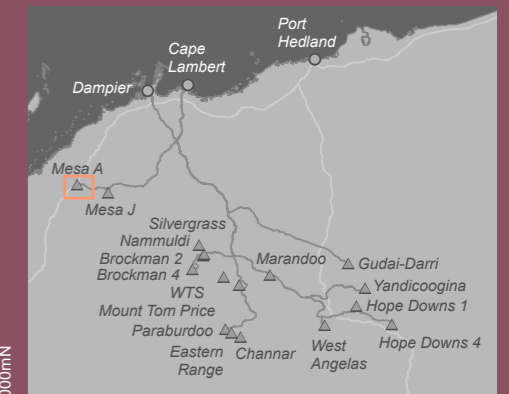


Legend

- Amendment Area
- Tier 1 Fauna**
 - *Dasyurus hallucatus*, EN, EN
 - *Liasis olivaceus barroni*, VU, VU
 - ▲ *Macroderma gigas*, VU, VU
 - *Rhinonicteris aurantia*, VU, VU
- Tier 2 Fauna**
 - ◆ *Dasyercus blythi*, P4
 - ◆ *Leiopotherapon aheneus*, P4
 - ◆ *Pseudomys chapmani*, P4
- Town
- Highway
- Major Road
- Rio Tinto Railway
- Major Creek

Drawn: M.Ludovico
 Plan: RTIO_1052776v1
 Date: May 2024

Checked by: L.F.
 Proj: GDA 1994 MGA Zone 50
 GIS.Team@riotinto.com



Disclaimer: Copyright in this document is owned by or is licensed to the relevant Rio Tinto Group member(s) and may contain confidential information of the relevant Rio Tinto Group member(s). This document has been prepared to the appropriate level of accuracy as required for its purposes. Reproduction, distribution or disclosure of this document in whole or in part by any means is strictly prohibited without the express written approval of the relevant Rio Tinto Group member(s). Any unauthorised use or disclosure of this document may result in loss or damage to the relevant Rio Tinto Group member(s). Further this document may not be referred to, quoted or relied upon for any purpose whatsoever without the written approval of the relevant Rio Tinto Group member(s). To the maximum extent permitted by law, the relevant Rio Tinto Group member(s), (a) will not be liable to a third party for any loss, damage, liability or claim arising out of or incidental to a third party using or relying on the content contained in this document, whether such use was authorised or not; and (b) disclaims all risk, representations and warranties (express or implied), and the third party assumes all risk and releases and indemnifies and agrees to keep indemnified the relevant Rio Tinto Group member(s) from any loss, damage, claim or liability arising directly or indirectly from the use or reliance on this document.

Figure 2: Conservation Significant Fauna Taxa Recorded within 20 km of the Amendment Area





Legend

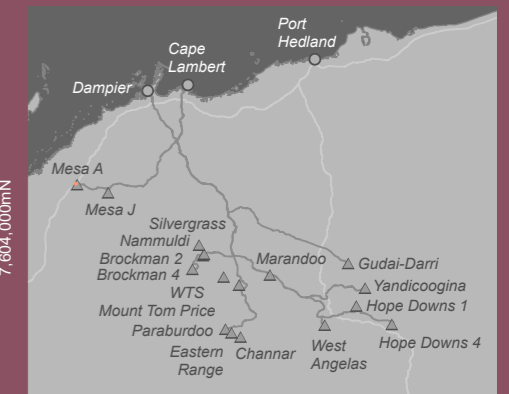
- Amendment Area

Fauna Habitat

- Disturbed
- Low Hills and Slopes
- Minor Drainage
- Stony Plain

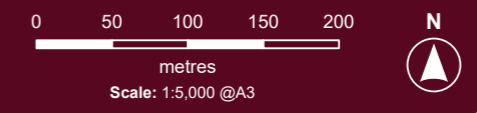
Drawn: M.Ludovico
 Plan: RTIO_1052776v1
 Date: May 2024

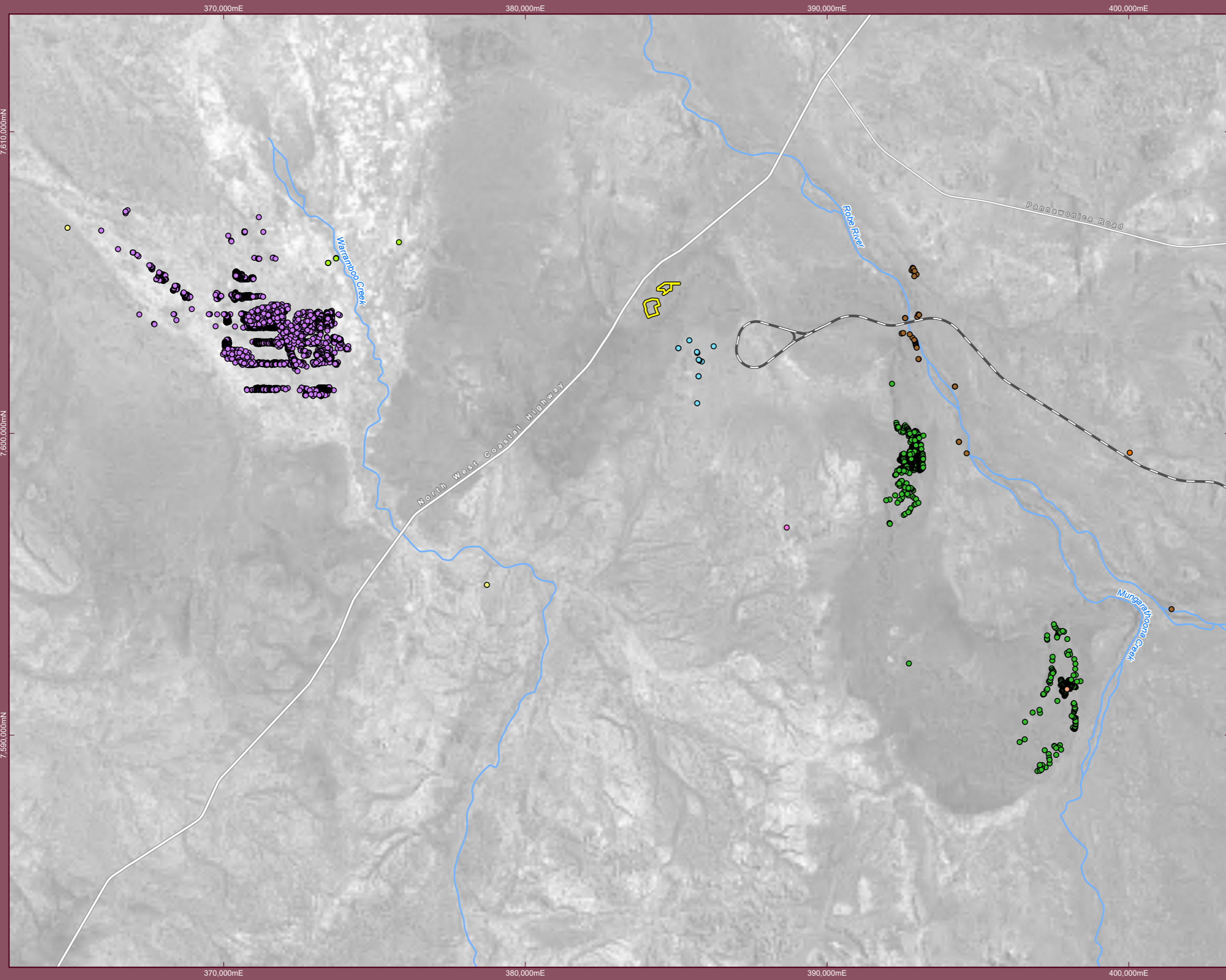
Checked by: L.F.
 Proj: GDA 1994 MGA Zone 50
 GIS.Team@riotinto.com



Disclaimer: Copyright in this document is owned by or is licensed to the relevant Rio Tinto Group member(s) and may contain confidential information of the relevant Rio Tinto Group member(s). This document has been prepared to the appropriate level of accuracy as required for its purposes. Reproduction, distribution or disclosure of this document in whole or in part by any means is strictly prohibited without the express written approval of the relevant Rio Tinto Group member(s). Any unauthorised use or disclosure of this document may result in loss or damage to the relevant Rio Tinto Group member(s). Further this document may not be referred to, quoted or relied upon for any purpose whatsoever without the written approval of the relevant Rio Tinto Group member(s). To the maximum extent permitted by law, the relevant Rio Tinto Group member(s), (a) will not be liable to a third party for any loss, damage, liability or claim arising out of or incidental to a third party using or relying on the content contained in this document, whether such use was authorised or not; and (b) disclaims all risk, representations and warranties (express or implied), and the third party assumes all risk and releases and indemnifies and agrees to keep indemnified the relevant Rio Tinto Group member(s) from any loss, damage, claim or liability arising directly or indirectly from the use or reliance on this document.

Figure 3: Fauna Habitats of the Amendment Area





Legend

- Amendment Area
- Flora Tier 2**
- *Abutilon* sp., PSI
- *Abutilon* sp. Onslow (F. Smith s.n. 10/9/61), P3
- *Eragrostis crateriformis*, P3
- *Euphorbia inappendiculata* var. *inappendiculata*, P2
- *Goodenia* sp., PSI
- *Indigofera rivularis*, P3
- *Rhynchosia bungarensis*, P4
- *Solanum* sp. Red Hill (S. van Leeuwen et al. PBS 5415), P3
- *Triodia pisolitica*, P3
- Town
- Highway
- Major Road
- Rio Tinto Railway
- Major Creek

Drawn: M.Ludovico
 Plan: RTIO_1052776v1
 Date: May 2024

Checked by: L.F.
 Proj: GDA 1994 MGA Zone 50
 GIS.Team@riotinto.com



Disclaimer: Copyright in this document is owned by or is licensed to the relevant Rio Tinto Group member(s) and may contain confidential information of the relevant Rio Tinto Group member(s). This document has been prepared to the appropriate level of accuracy as required for its purposes. Reproduction, distribution or disclosure of this document in whole or in part by any means is strictly prohibited without the express written approval of the relevant Rio Tinto Group member(s). Any unauthorised use or disclosure of this document may result in loss or damage to the relevant Rio Tinto Group member(s). Further this document may not be referred to, quoted or relied upon for any purpose whatsoever without the written approval of the relevant Rio Tinto Group member(s). To the maximum extent permitted by law, the relevant Rio Tinto Group member(s) (a) will not be liable to a third party for any loss, damage, liability or claim arising out of or incidental to a third party using or relying on the content contained in this document, whether such use was authorised or not; and (b) disclaims all risk, representations and warranties (express or implied), and the third party assumes all risk and releases and indemnifies and agrees to keep indemnified the relevant Rio Tinto Group member(s) from any loss, damage, claim or liability arising directly or indirectly from the use or reliance on this document.

Figure 4: Conservation Significant Flora Taxa recorded within 20 km of the Amendment Area



Legend

Amendment Area

Vegetation Code

AIaAbTw

ChAtuTwTe

EIaAtAarTw

Highly Modified

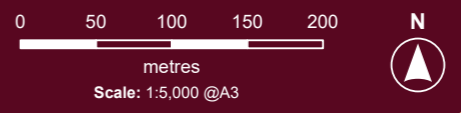
Drawn: M.Ludovico
 Plan: RTIO_1052776v1
 Date: May 2024

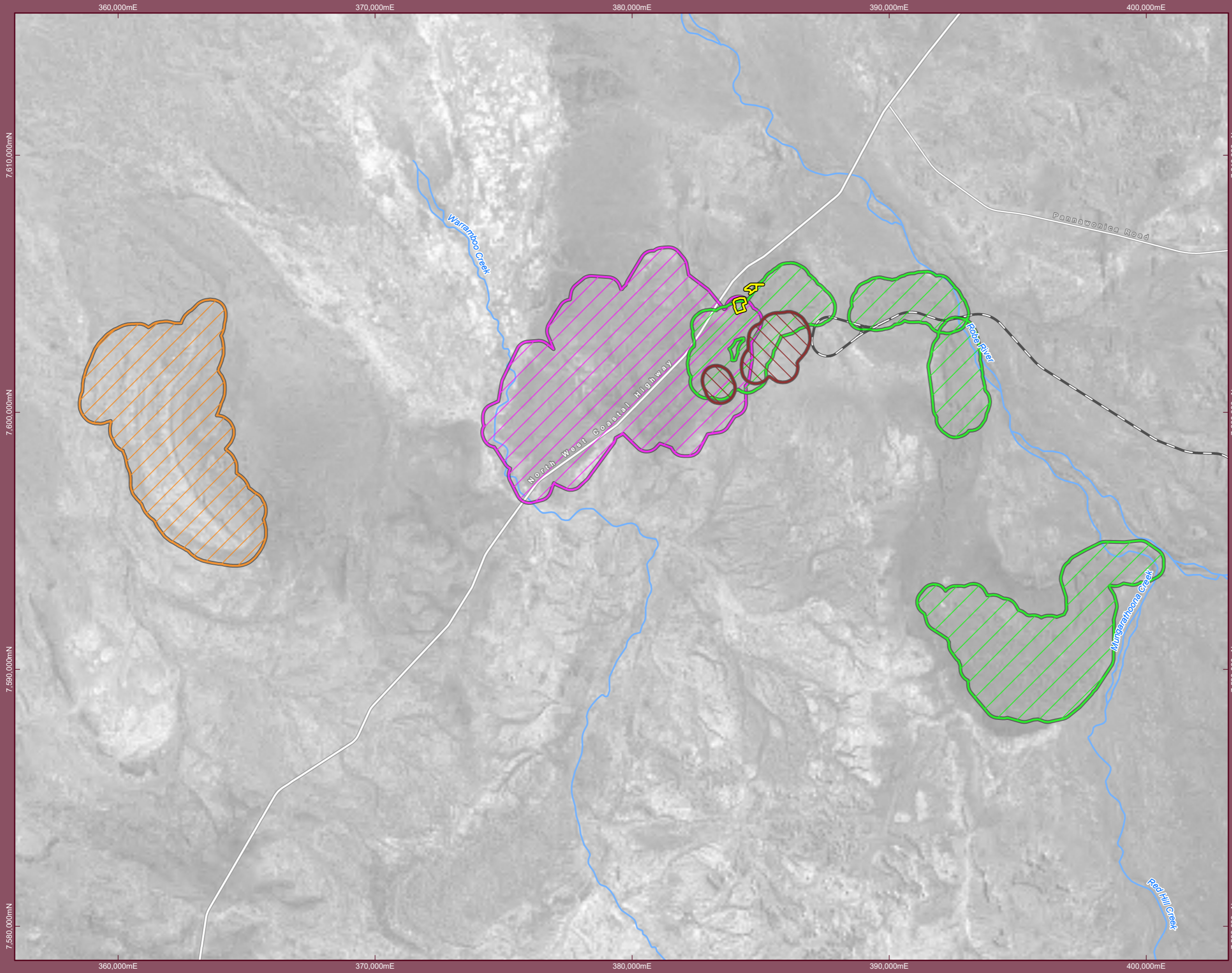
Checked by: DvH
 Proj: GDA 1994 MGA Zone 50
 GIS.Team@riotinto.com



Disclaimer: Copyright in this document is owned by or is licensed to the relevant Rio Tinto Group member(s) and may contain confidential information of the relevant Rio Tinto Group member(s). This document has been prepared to the appropriate level of accuracy as required for its purposes. Reproduction, distribution or disclosure of this document in whole or in part by any means is strictly prohibited without the express written approval of the relevant Rio Tinto Group member(s). Any unauthorised use or disclosure of this document may result in loss or damage to the relevant Rio Tinto Group member(s). Further this document may not be referred to, quoted or relied upon for any purpose whatsoever without the written approval of the relevant Rio Tinto Group member(s). To the maximum extent permitted by law, the relevant Rio Tinto Group member(s), (a) will not be liable to a third party for any loss, damage, liability or claim arising out of or incidental to a third party using or relying on the content contained in this document, whether such use was authorised or not; and (b) disclaims all risk, representations and warranties (express or implied), and the third party assumes all risk and releases and indemnifies and agrees to keep indemnified the relevant Rio Tinto Group member(s) from any loss, damage, claim or liability arising directly or indirectly from the use or reliance on this document.

Figure 5: Vegetation Types of the Amendment Area



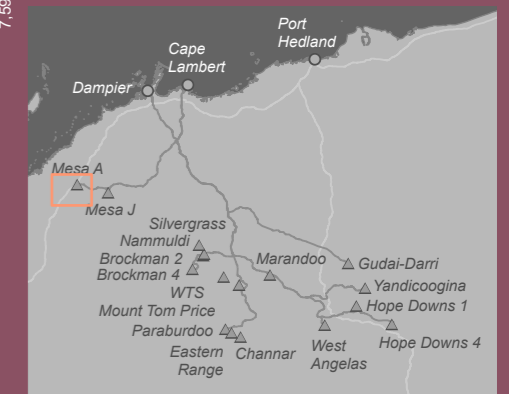


Legend

- Amendment Area
- Priority Ecological Community**
 - Sand Sheet Vegetation (Robe Valley)
 - Subterranean Invertebrate Communities of Mesas in the Robe Valley Region
 - Subterranean Invertebrate Community of Pisolitic Hills in the Pilbara
 - Tanpool Land System
- Highway
- Major Road
- Rio Tinto Railway
- Major Creek

Drawn: M.Ludovico
 Plan: RTIO_1052776v1
 Date: May 2024

Checked by: DvH
 Proj: GDA 1994 MGA Zone 50
 GIS.Team@riotinto.com



Disclaimer: Copyright in this document is owned by or is licensed to the relevant Rio Tinto Group member(s) and may contain confidential information of the relevant Rio Tinto Group member(s). This document has been prepared to the appropriate level of accuracy as required for its purposes. Reproduction, distribution or disclosure of this document in whole or in part by any means is strictly prohibited without the express written approval of the relevant Rio Tinto Group member(s). Any unauthorised use or disclosure of this document may result in loss or damage to the relevant Rio Tinto Group member(s). Further this document may not be referred to, quoted or relied upon for any purpose whatsoever without the written approval of the relevant Rio Tinto Group member(s). To the maximum extent permitted by law, the relevant Rio Tinto Group member(s), (a) will not be liable to a third party for any loss, damage, liability or claim arising out of or incidental to a third party using or relying on the content contained in this document, whether such use was authorised or not; and (b) disclaims all risk, representations and warranties (express or implied), and the third party assumes all risk and releases and indemnifies and agrees to keep indemnified the relevant Rio Tinto Group member(s) from any loss, damage, claim or liability arising directly or indirectly from the use or reliance on this document.

Figure 6: Priority Ecological Communities within 20 km of the Amendment Area

References

- Anderson, B., Thiele, K., & Barrett, M. (2017). A revision of the *Triodia basedowii* species complex and close relatives (Poaceae: Chloridoideae). *Australian Systematic Botany*, 30, 197.
<https://doi.org/10.1071/SB17011>
- Astron. (2015). *Middle Robe and East Deepdale Level 2 Vegetation and Flora Assessment*. Unpublished report prepared for Rio Tinto Iron Ore. <http://iodms/iodms/drl/objectId/090188a3809b2967>
- Astron. (2017). *Mesa A Hub – Targeted Night Parrot Fauna Assessment, September 2017*. Unpublished report prepared for Rio Tinto Iron Ore. <http://iodms/iodms/drl/objectId/090188a380b048a1>
- Astron. (2020a). *Warramboe Borefield (3PN) WD Targeted Abutilon sp. Onslow Survey, September 2020*. Unpublished report prepared for Rio Tinto Iron Ore.
<http://iodms/iodms/drl/objectId/090188a380c15fb4>
- Astron. (2020b). *Warramboe Targeted Survey Abutilon sp. Onslow (F. Smith s.n. 10/9/61) (P1), October 2019*. Unpublished report prepared for Rio Tinto Iron Ore.
<http://iodms/iodms/drl/objectId/090188a380be2df0>
- Astron. (2022). *Warramboe Borefield - Abutilon sp. Onslow Targeted Survey*. Unpublished report prepared for Rio Tinto Iron Ore. <http://iodms/iodms/drl/objectId/090188a380c766ff>
- Barker, R. M. (2007). Two newly described species and a draft key to the species of *Sida* s. lat. from Western Australia. *Nuytsia: journal of the Western Australian Herbarium*, 17, 13-30.
- Barrett, M. D., & Trudgen, M. E. (2018). *Triodia pisoliticola* (Poaceae), a new species from the Pilbara region, Western Australia, and a description for *T. sp. Mt Ella* (M.E. Trudgen MET 12739). *Nuytsia: journal of the Western Australian Herbarium*, 29, 271-281. <https://doi.org/10.58828/nuy00872>
- Biologic. (2022a). *Targeted Abutilon sp. Onslow (F. Smith s.n. 10/9/61) (P1) Searches*. Unpublished report prepared for Rio Tinto Iron Ore. <http://iodms/iodms/drl/objectId/090188a380c7aea4>
- Biologic. (2022b). *Warramboe Borefield Targeted Abutilon sp. Onslow (F. Smith s.n. 10/9/61) (P1) Searches*. Unpublished report prepared for Rio Tinto Iron Ore.
<http://iodms/iodms/drl/objectId/090188a380c7cf59>
- Biologic. (2023). *Robe Valley Next Steps Targeted Flora and Vegetation Interim Report: Survey Trip 6*. Unpublished report prepared for Rio Tinto Iron Ore.
https://riotinto.sharepoint.com/sites/IODMSBusinessAdministration/Corporate_Relations_Approvals_2/Forms/AllItems.aspx?id=%2Fsites%2FIODMSBusinessAdministration%2FCorporate%5FRelations%5FApprovals%5F2%2FRTIO%2D1025383%2Epdf&parent=%2Fsites%2FIODMSBusinessAdministration%2FCorporate%5FRelations%5FApprovals%5F2
- Biota. (2006a). *Further Botanical Survey Work at Mesa A, Warramboe and Along the Fibre Optic Cable Corridor*. Unpublished report prepared for Rio Tinto Iron Ore.
<http://iodms/iodms/drl/objectId/090188a380088187>
- Biota. (2006b). *A Vegetation and Flora Survey of the proposed Mesa A Transport Corridor, Warramboe Deposit and Yarraloola Borefield*. Unpublished report prepared for Rio Tinto Iron Ore.
<http://iodms/iodms/drl/objectId/090188a3800349b8>
- Biota. (2015). *Yandi Vegetation and Flora Integration Report*. Unpublished report prepared for Rio Tinto Iron Ore. <http://iodms/iodms/drl/objectId/090188a3808d0a35>
- DBCA, Department of Biodiversity Conservation and Attractions. (2024). *FloraBase: the Western Australian Flora* (
- Department of Biodiversity, C. a. A. (2024). *Guidelines for determining the likely presence and habitat usage of night parrot (Pezoporus occidentalis) in Western Australia*.
- Menkhorst, P., & Knight, F. . (2021). *A field guide to the mammals of Australia*. Oxford University Press.
- Rio Tinto. (2012). *Flora and Vegetation Assessment of the Koodaideri Exploration Drilling Area*. Unpublished report prepared for Rio Tinto Iron Ore. <http://iodms/iodms/drl/objectId/090188a380442a27>
- Rio Tinto. (2017a). *Rio Tinto Ghost Bat surveys conducted in the vicinity of Mesa B and C_June 2017*. Unpublished report prepared for Rio Tinto Iron Ore.
<http://iodms/iodms/drl/objectId/090188a380aabb7>
- Rio Tinto. (2017b). *Rio Tinto Pilbara Leaf-nosed bat surveys conducted in the vicinity of Mesa B and C*. Unpublished report prepared for Rio Tinto Iron Ore.
<http://iodms/iodms/drl/objectId/090188a380aabb42>
- Rio Tinto. (2018a). *Addendum to Robe River Report: Groundwater Dependent Vegetation distribution within Jimmawurrada Creek – Targeted Riparian Vegetation Survey*. Unpublished report prepared for Rio Tinto Iron Ore. <http://iodms/iodms/drl/objectId/090188a380b18547>

- Rio Tinto. (2018b). *Assessment of Groundwater Dependent Vegetation distribution on the Robe River - Targeted Riparian Vegetation Survey – Stage 1*. Unpublished report prepared for Rio Tinto Iron Ore. <http://iodms/iodms/drl/objectId/090188a380b0d08b>
- Rio Tinto. (2019a). *Abutilon sp. Onslow Warramboe Borefield Pre-clearance Survey, October 2019*. Unpublished report prepared for Rio Tinto Iron Ore. <http://iodms/iodms/drl/objectId/090188a380b9cbf4>
- Rio Tinto. (2019b). *Abutilon sp. Onslow Warramboe Borefield Pre-clearance survey, September 2019*. Unpublished report prepared for Rio Tinto Iron Ore. <http://iodms/iodms/drl/objectId/090188a380b7e441>
- Rio Tinto. (2019c). *Metadata Statement Vegetation Condition Mapping for Mesa A Hub Development Envelope*. Unpublished report prepared for Rio Tinto Iron Ore. <http://iodms/iodms/drl/objectId/090188a380ba023c>
- Rio Tinto. (2022). *Consolidated Fauna Habitat Mapping for the Mesa A Development Envelope 2018*. Unpublished report prepared for Rio Tinto Iron Ore. https://riotinto.sharepoint.com/sites/IODMSBusinessAdministration/_layouts/15/Doc.aspx?sourcedoc=%7BA01B5EF0-A560-4956-BF17-37D5FC7F3F28%7D&file=RTIO-
- Rio Tinto. (2023). *Metadata Statement - Significant Fauna Areas at Mesa D*. Unpublished report prepared for Rio Tinto Iron Ore. https://riotinto.sharepoint.com/sites/IODMSBusinessAdministration/_layouts/15/DocIdRedir.aspx?ID=RTIOBA-145275381-88712
- Rio Tinto & Biologic. (2019). *Ghost Bats at Mesa F, November 2018 and March 2019*. Unpublished report prepared for Rio Tinto Iron Ore. <http://iodms/iodms/drl/objectId/090188a380b5ba11>
- Shepherd, K. A., & Lepschi, B. J. (2023). Revision of the connate bract group allied to *Goodenia panduriformis* (Goodeniaceae) including recognition of three new species. *Nuytsia: journal of the Western Australian Herbarium*, 34, 227-254.
- Shepherd, K. A., Lepschi, B. J., Johnson, E. A., Gardner, A. G., Sessa, E. B., & Jabaily, R. S. (2020). The concluding chapter: recircumscription of *Goodenia* (Goodeniaceae) to include four allied genera with an updated infrageneric classification. *PhytoKeys*, 152, 27-104.