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Newmont Australia- Boddington Gold Mine
Gold Mine Rd, Boddington

Threatened and Priority Flora search for Newmont Boddington Gold Mine within the Residue Dam Expansion Areas

Introduction

Mattiske Consulting Pty Ltd was commissioned by Newmont Boddington Gold Mine (Newmont) to conduct a threatened and priority flora search within a 200m buffer of the Residue Dam Expansion areas.

The Residue Expansion survey areas occur within the Northern Jarrah Forest subregion of the Southwest Botanical Province (Beard 1990), approximately 110 km south east of Perth, WA. The geology of the region comprises lateritic duricrust, with drainage lines and occasional granite hills. The Northern Jarrah Forest subregion is characterised by Jarrah (*Eucalyptus marginata*) forest on ironstone gravels and Marri-Wandoo (*Corymbia calophylla - Eucalyptus wandoo*) woodlands on loamy soils, with sclerophyll understoreys. The values on the main Residue areas were summarized in 2024 by Mattiske Consulting Pty Ltd.

Targeted survey efforts highlighted in this memorandum are primarily based on work undertaken by Mattiske Consulting in November 2024.

This region has been extensively mapped by Mattiske Consulting for both Newmont Boddington Gold Mine and South32 Worsley Alumina which meet the relevant state EPA and federal DCCEEW standards to enable coverage of the flora and vegetation values and conservation values associated with the flora and vegetation.

Methodology and Survey Effort

Targeted flora searches rely on the collation of potential species lists, an understanding of the lifeforms and appearances of the different species or taxa, specific search methodologies, an increased understanding of the site preferences of flora in relation to underlying landforms, soils and site conditions. In this context the depth of knowledge and field experience within the Mattiske ecologists assists Newmont Boddington Gold Mine (Newmont) in this project.

Targeted flora searches were undertaken by a team of three botanists from Mattiske Consulting from the 4th to the 7th of November within the Residue Dam expansion areas near Boddington. Parallel foot traverses were undertaken on regular grid systems whilst recording GPS locations along with number (or density categories) of plants, condition and reproductive state of the species. Initially transects were located at 20m apart and if any targeted species were recorded this was increased to 10m apart transects. All sites assessed were within remnant areas of native bushland, sites within areas that had been cleared for plantation or were currently cropped with plantation species were not assessed. The foot traverses are summarized in Figure 1.

All plant specimens collected during the field survey were dried and processed in accordance with the requirements of the Western Australian Herbarium (WAH). All plant specimens were identified through comparisons with pressed specimens housed at the WAH. Where appropriate, plant taxonomists with specialist skills were consulted. Nomenclature of the species recorded is in accordance with the WAH (1998-).

Summary of flora and vegetation values

A range of priority flora as listed by (DBCA 2025a and WAH 1998-) have been recorded within the wider Mt Saddleback Tree Farm (formerly known as Sotico and Bunnings properties) and Boddington Gold Mine areas surrounding the two residue areas (see Mattiske Consulting Pty Ltd 2024).

No threatened flora within current listings by the Department of Biodiversity, Conservation and Attractions (DBCA 2025a) and by the Department of Climate Change, Energy and the Environment and Water [DCCEEW] (2025a) under the EPBC Act 1999 were recorded in either of the residue areas in 2023 by Mattiske Consulting Pty Ltd (2024).

A range of priority flora as listed by (DBCA 2024a) and WA Herbarium (1998-) have been recorded within the wider Mt Saddleback Treefarm and Boddington Gold Mine areas surrounding the residue areas.

Two priority flora species were recorded in the residue areas (Mattiske Consulting Pty Ltd 2024), however despite searching these two priority species were not recorded in the 200m extension areas to the northern area as summarised in this memorandum.

- *Lasiopetalum cardiophyllum* (P4) – this species is relatively locally common within the Jarrah-Marri-Sheoak (*Eucalyptus marginata – Corymbia calophylla – Allocasuarina fraseriana*) communities near Boddington and as such is relatively restricted geographically. In view of the degree of clearing in the residue areas this species is relatively restricted to the fringes of the southern residue area.
- *Senecio leucoglossus* (P4) – this species is widespread in the northern Jarrah but occurs as scattered individuals. This species was recorded on the western fringes of the southern residue survey area.

One potential priority flora species (*Hibbertia ?hortiorum* P1) was recorded within the 200m fringes in the extension of the northern Residue area. This taxon was recorded at 32 locations with numbers ranging from 1 plant to 4 plants with a total of 51 plants, Appendix A. Several specimens of the collections of this species were checked by specialists at the State Herbarium and confirmed as *Hibbertia ?hortiorum*. The inability to confirm this species as *Hibbertia hortiorum* relates to the timing of the survey work after the flowering had occurred. This species has a more prostrate habit and has been recorded further west by the Mattiske team members and is known from collection just north of Albany Highway and north of Boddington (Florabase, WAH 1998-). *Hibbertia hortiorum* was one of the species identified when Thiele (2019) subdivided the broader *Hibbertia commutata* group. As such further specimens should be collected in late winter to spring months of 2025. It would be advisable to check progress on several locations to ensure survey efforts are optimized.

A total of 20 site-vegetation types, plus 2 cleared (ag – agriculture and other), 1 plantation (pine trees) and 1 plantation (agricultural areas) were defined and mapped in the Residue Expansion survey areas (Mattiske Consulting Pty Ltd 2024). The site-vegetation types were subdivided into four main groupings associated with site conditions which reflected landforms, soils and soil moisture levels. The site-vegetation types on the extreme sites such as on the valley systems, granite outcrop areas and the creeklines differ markedly from the forest and woodland areas on the slopes and ridges. A total of 14 site-vegetation types, plus 1 cleared (ag – agriculture and other), 1 plantation (pine trees) and 1 plantation (agricultural areas) were defined and mapped in the 200m areas on the northern Residue Expansion survey area (Figure 2). None of these site vegetation types are locally or regionally restricted; however the localised occurrence of the granite areas (G3) have species with potential similarities to the species on the granite PEC areas as defined to the south in the Mt Saddleback areas near Boddington (DBCA PEC Mount Saddleback Heath Communities PEC (P1), DBCA 2024b).

No Threatened Ecological Communities (TECs) occur in the Residue Expansion survey areas (DCCEEW 2025b, DBCA 2025b). There is potential that the granite areas (G1 and G3) as recorded in small areas in the Residue Expansion

survey areas (including the 200m area on the fringes of the areas summarized in Mattiske Consulting Pty Ltd 2024) may have values that overlap with the PEC defined for similar communities south of Boddington (DBCA PEC Mount Saddleback Heath Communities PEC (P1), DBCA 2025c).

Mattiske and Havel (1998) defined and described three vegetation complexes in the 200m extension areas: Pn (Pindalup), D4 (Dwellingup) and Ck (Coolakin). None of these are restricted to the survey areas; although the Coolakin valley systems are relatively restricted in protected areas.

The Residue Expansion survey areas occur within the Regional Forest Agreement (RFA) area of the southwest forests and as such was considered during the RFA process Western Australian Government and Commonwealth of Australia (1999).

Summary of Vegetation Condition

The vegetation varied in condition from completely degraded in the pine plantation areas to either very good or excellent in the less disturbed areas, despite historical harvesting activities, fires, dieback and some established tracks.

Old Growth Assessments

The assessment of old growth values was based on the approach defined in the Department of Parks and Wildlife (2017) for the procedures associated with assessing old growth values. This included an assessment of the following;

- Phytophthora dieback occurrence (if present this excludes consideration as defined as a significant disturbance);
- Other Disturbance including grazing, mining, and previous farming;
- Types of forest types;
- Harvest History (evident from logs, stumps and track disturbances);
- Other clearing activities for infrastructure and historical railway, tracks and bridges; and
- Fire history and mining history.

This survey effort was undertaken during the targeted flora survey on 20m part traverses or 10m apart traverses as defined above.

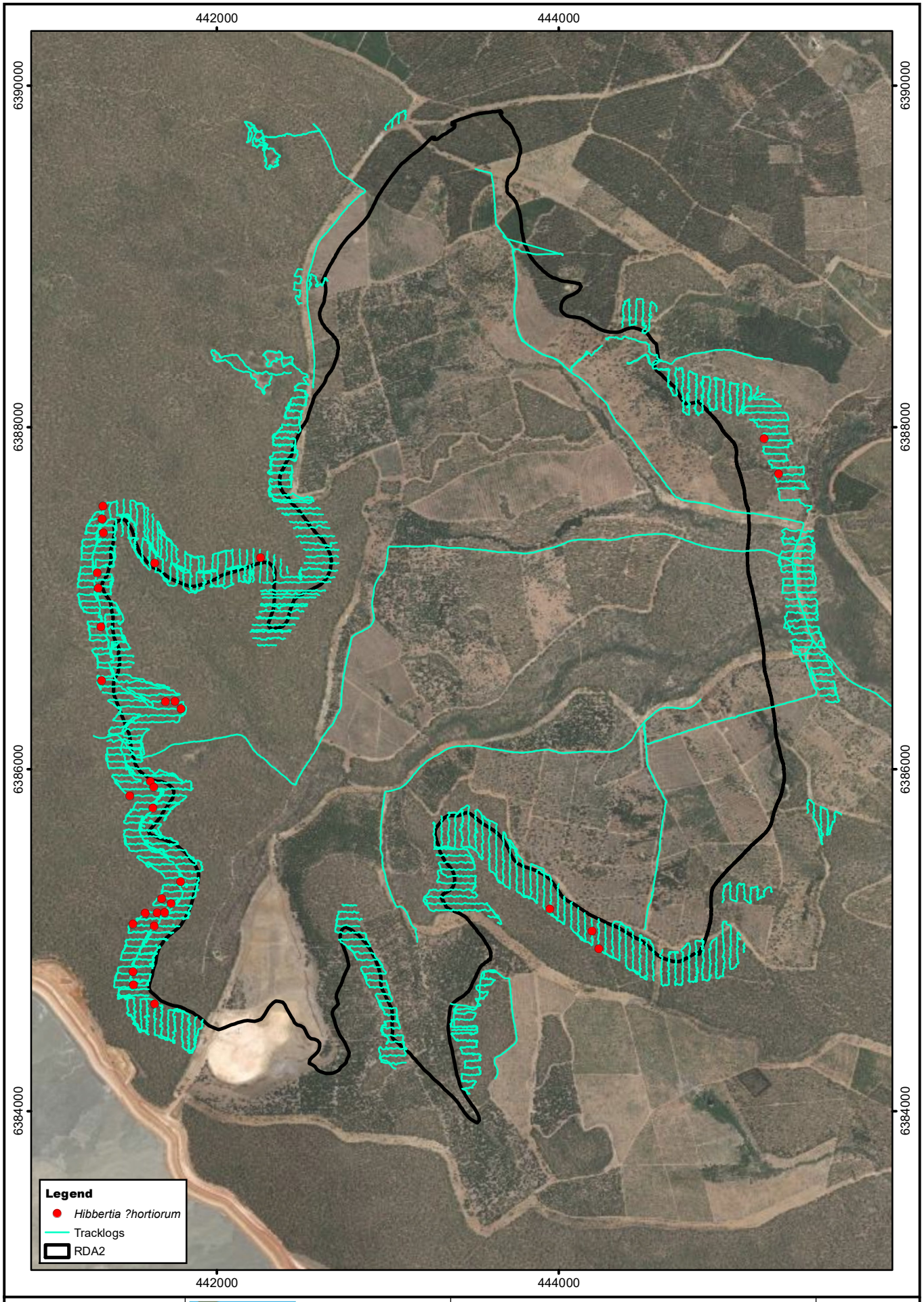
Findings on Old Growth

The areas that were adjacent to pine plantation areas did not support values that would support old growth forest values.

The areas in the low lying valleys and swamp areas have been subject to dieback ad other indirect disturbances and as such do not support old growth values.

The limited areas to the west within the 200m area adjoin the northern Residue areas that are in excellent condition rating have some potential for less disturbance and increase values in the forest areas. Although no Old Growth areas have been defined by DBCA in these less disturbed areas the condition of these forest areas should be taken into account in the valuation process (see Mattiske Consulting 2024 report on the residue areas).

As such whilst Old Growth values have not been defined, the areas of forest in excellent condition have less disturbance and as such have values not replicated in some nearby areas.



N

0 0.2 0.4 km

Scale: 1:30,000

MGA94 (Zone 50)

CAD Ref: g1881_F064_01

Date: February 2025 | Rev: A | A4

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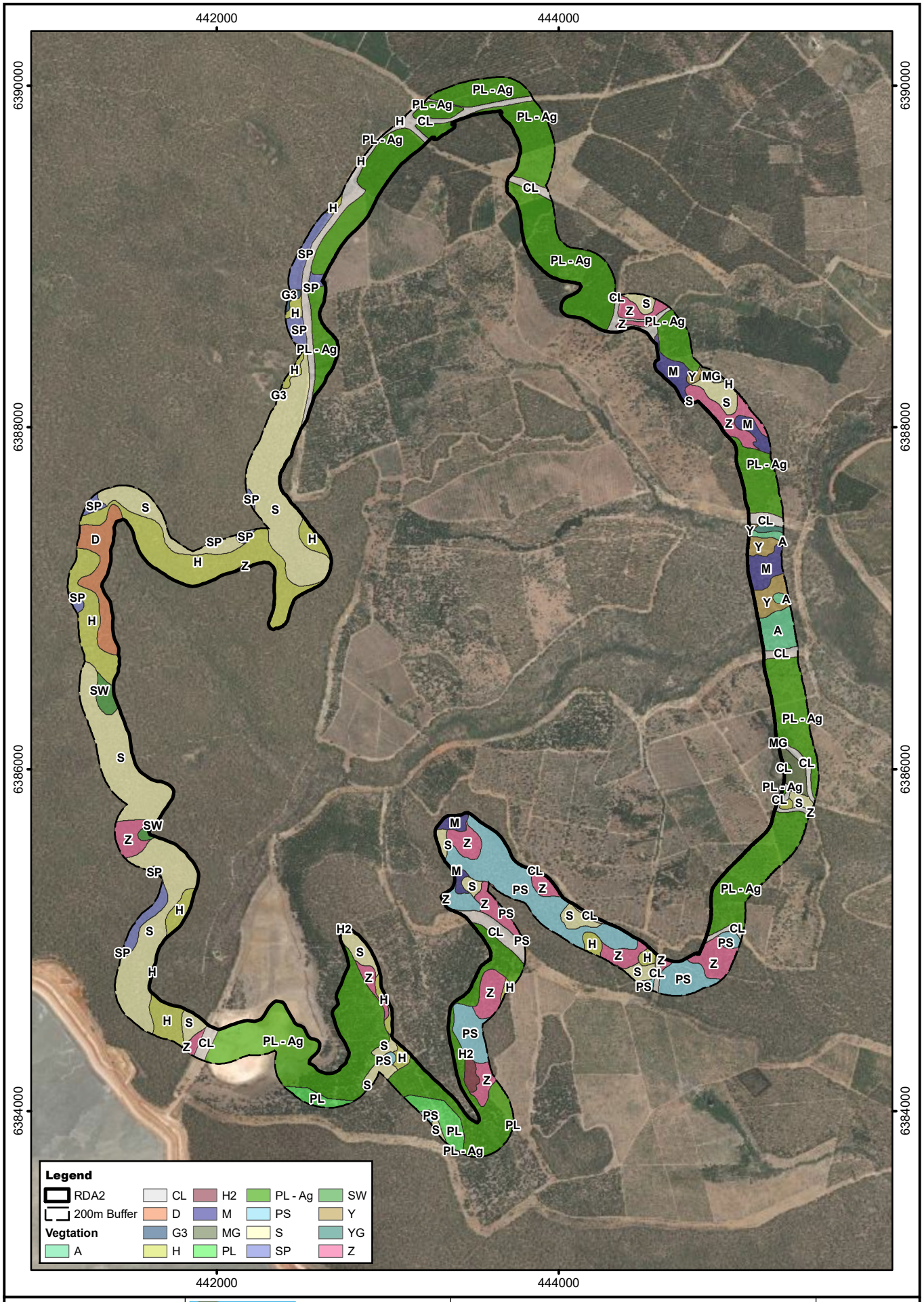
Residue Dam Survey Results

Figure: 1



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Residue Dam Vegetation

Figure: **2**

Overall of Findings

No threatened flora within current listings by the Department of Biodiversity, Conservation and Attractions (DBCA 2024) and by the Department of Climate Change, Energy and the Environment and Water [DCCEEW] (2024a) under the EPBC Act 1999 were recorded in either of the residue areas in 2023 by Mattiske Consulting Pty Ltd (2024).

One potential priority flora species (*Hibbertia ?hortiorum* P1) was recorded within the 200m fringes in the extension of the northern Residue area. Several specimens of the collections of this species were checked by specialists at the State Herbarium and confirmed as *Hibbertia ?hortiorum*. The inability to confirm this species as *Hibbertia hortiorum* relates to the timing of the survey work after the flowering had occurred. The habit of this species is relatively prostrate which assisted in the initial identification. As such further specimens should be collected in late winter to spring months of 2025. It would be advisable to check progress on several locations to ensure survey efforts are optimized.

No Threatened Ecological Communities (TECs) occur in the 200m extension of the northern Residue Expansion survey area.

A total of 14 site-vegetation types, plus 1 cleared (ag – agriculture and other), 1 plantation (pine trees) and 1 plantation (agricultural areas) were defined and mapped in the 200m areas on the northern Residue Expansion survey area (Mattiske Consulting Pty Ltd 2024). None of these site vegetation types are locally or regionally restricted; however the localised occurrence of the granite areas (G3) have species with potential similarities to the species on the granite PEC areas as defined to the south in the Mt Saddleback areas near Boddington (DBCA PEC Mount Saddleback Heath Communities PEC (P1), DBCA 2024b).

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APPENDIX A: SUMMARY OF LOCATIONS & POPULATIONS OF HIBBERTIA ?HORTIORUM (P1), 2024

Species	Easting	Northing	Datum	Population (5m x 5m)
Hibbertia ?hortiorum	441637	6384627	GDA94	2
Hibbertia ?hortiorum	441513	6384738	GDA94	2
Hibbertia ?hortiorum	441511	6384814	GDA94	2
Hibbertia ?hortiorum	444236	6384950	GDA94	2
Hibbertia ?hortiorum	444196	6385053	GDA94	1
Hibbertia ?hortiorum	441634	6385085	GDA94	1
Hibbertia ?hortiorum	441510	6385093	GDA94	3
Hibbertia ?hortiorum	441582	6385156	GDA94	1
Hibbertia ?hortiorum	441653	6385159	GDA94	2
Hibbertia ?hortiorum	441697	6385162	GDA94	2
Hibbertia ?hortiorum	443950	6385184	GDA94	1
Hibbertia ?hortiorum	441733	6385212	GDA94	1
Hibbertia ?hortiorum	441677	6385244	GDA94	1
Hibbertia ?hortiorum	441790	6385343	GDA94	2
Hibbertia ?hortiorum	441627	6385771	GDA94	1
Hibbertia ?hortiorum	441493	6385843	GDA94	3
Hibbertia ?hortiorum	441632	6385895	GDA94	1
Hibbertia ?hortiorum	441613	6385927	GDA94	1
Hibbertia ?hortiorum	441791	6386354	GDA94	2
Hibbertia ?hortiorum	441701	6386394	GDA94	2
Hibbertia ?hortiorum	441757	6386397	GDA94	3
Hibbertia ?hortiorum	441327	6386518	GDA94	1
Hibbertia ?hortiorum	441322	6386834	GDA94	1
Hibbertia ?hortiorum	441308	6387060	GDA94	2
Hibbertia ?hortiorum	441302	6387147	GDA94	1
Hibbertia ?hortiorum	441638	6387207	GDA94	1
Hibbertia ?hortiorum	442256	6387236	GDA94	1
Hibbertia ?hortiorum	441337	6387382	GDA94	4
Hibbertia ?hortiorum	441331	6387464	GDA94	1
Hibbertia ?hortiorum	441334	6387540	GDA94	1
Hibbertia ?hortiorum	445288	6387728	GDA94	1
Hibbertia ?hortiorum	445204	6387932	GDA94	1