Mount Gibson Mining

Extension Hill Pty Ltd

MT GIBSON IRON ORE MINE AND INFRASTRUCTURE PROJECT

ANNUAL ENVIRONMENTAL REPORT

Mt Gibson Iron Ore Mine and Infrastructure Project

October 2022 – September 2023

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October 2022 – September 2023

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Peter Kerr	Wayne Ennor
Chief Executive Officer	Environmental Consultant
Mount Gibson Mining Limited	Extension Hill Pty Ltd

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1. INTRODUCTION

This Annual Environmental Report outlines the status and environmental compliance of the Mt Gibson Iron Ore Mine and Infrastructure Project (the Project) for the reporting period, 1st October 2022 to 30th September 2023.

Table 1 identifies the specific compliance requirements addressed by this document and the regulatory agencies responsible for administering each approval. The DWER Prescribed Premises Licence is the sole responsibility of MGM. The proponents are jointly responsible for the other approvals (Table 1).

The Project incorporates both the Extension Hill Hematite Operation (EHHO) managed by Mount Gibson Mining Limited (MGM) and the Magnetite Operation managed by Extension Hill Pty Ltd (EHPL).

MGM's hematite transport (road and rail) component of the Extension Hill Hematite Operation is addressed in a separate report to the Department of Water and Environmental Regulation (DWER) under Ministerial Statement 786. Also, the Mt Gibson Range Mine Operations Iron Hill Deposits Project is addressed in a separate report to DWER under Ministerial Statement 1045 and a separate report to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) under EPBC Act Ref 2015/7514.

Table 1 Approval Conditions

Regulator	Approval	Condition Number	Responsible Company
Department of Water and Environmental Regulation (DWER)	Ministerial Statement 753	Conditions 4-1 to 4-3	MGM & EHPL
Department of Water and Environmental Regulation (DWER)	Licence L8495/2010/2	Conditions 5.1.3, 5.2.1 & 5.2.2	MGM
Department of Climate Change, Energy, the Environment and Water (DCCEEW)	EPBC Act Ref 2005/2381	Condition 3	MGM & EHPL
Department of Water and Environmental Regulation (DWER)	Mine Closure Plan v5.0	S8.0: Completion Criteria	MGM & EHPL
Department of Mines, Industry Regulation and Safety (DMIRS)	Mine Closure Plan v5.0	S8.0: Completion Criteria	MGM & EHPL

Some sections of this report are relevant to only some regulators due to differences in the reporting requirements for the various approvals. Table 2 identifies the sections of the report that are relevant to each regulator. Each company's endorsement of this report applies only to the sections relevant to the approvals for which they are responsible, either jointly or individually.

Table 2 Report Sections Relevant to Regulators

Report Section	Relevant Regulator
1. Introduction	All
2. Project Summary	All
3. Compliance	
3.1 Department of Water and Environmental Regulation (Ministerial Statement 753)	DWER
3.2 Department of Water and Environmental Regulation (Licence L8495/2010/2)	DWER
3.3 Department of Climate Change, Energy, the Environment and Water (EPBC2005/2381)	DCCEEW
3.4 Incidents	All
4. Environmental Management and Monitoring	
4.1 Weather Monitoring	DWER
4.2 Dust Monitoring	DWER
4.3 Groundwater Monitoring	DWER
4.4 Vegetation Monitoring	All
4.5 Malleefowl Management and Monitoring	All
4.6 General Fauna Monitoring	DWER
5. Rehabilitation and Closure Planning	DWER DMIRS
6. Stakeholder Consultation and Biodiversity Offsets	All
7. Future Work Program	DWER

2. PROJECT SUMMARY

2.1. Approvals Summary

The Project received approval from the Western Australian Minister for the Environment under Part IV of the *Environmental Protection Act 1986* on the 24th October 2007 (Ministerial Statement 753). Subsequent minor amendments to the Project were approved on the 20th February 2008, 26th August 2008, 2nd June 2009, 31st March 2010, 2nd February 2011, 28th August 2012 and 14th December 2016. Ministerial Statement 889 was issued on 28th February 2012 to amend condition 13 and remove condition 15 of Ministerial Statement 753. Mount Gibson Mining Ltd (MGM) and Extension Hill Pty Ltd (EHPL) are separate companies without any common ownership and each is nominated as a joint proponent of MS753.

The Commonwealth Department of Environment, Water, Heritage and the Arts (now the Department of Climate Change, Energy, the Environment and Water) approved the Project on the 18th December 2007 (EPBC ref 2005/2381). On 21st October 2011, a variation was approved to align the reporting dates of this approval with the other approvals included in this report. Jointly, the approval is held by MGM and EHPL.

In December 2012, a wastewater treatment plant (Category 85) registration (R2336/2012/1) was issued to EHPL under Part V of the *Environmental Protection Act 1986* in order to service the exploration village ('Little Gunduwa') on tenement G59/41.

Approval to operate a sewage facility, landfill and ore beneficiation facility under Part V of the *Environmental Protection Act 1986* was granted to MGM by the Department of Environment and Conservation (now the Department of Water and Environmental Regulation) on 20th January 2011 with the issuing of Prescribed Premises Licence L8495/2010/1. This licence, held by MGM, was reissued in the Department's REFIRE format on 16th January 2014 (L8495/2010/2). A number of amendments to the licence have been approved over the life of the Project, with the most recent being issued on the 3rd January 2019. The licence now includes an additional Category 63 Class 1 inert landfill site at the ROM pad to facilitate burial of inert waste as part of mine rehabilitation and closure.

Version 5.0 of the Mine Closure Plan (MCP) Extension Hill Hematite Operation was submitted to DMIRS for review on 3 June 2020. On 22 June 2022, EHPL received notification from DMIRS that the MCP had been assessed as "low risk" and the next revision was not required for submission to DMIRS until 31 October 2023.

The Iron Hill Deposits Project was approved under Part IV of the *Environmental Protection Act 1986* on the 8th December 2016 (Statement 1045). Approval under the *Environment Protection and Biodiversity Conservation Act 1999* was issued on the 8th February 2017. Each of these two approvals are held only by MGM. While the Iron Hill Deposits Project utilised certain infrastructure approved under Ministerial Statement 753, it is reported separately under Ministerial Statement 1045 and EPBC 2015/7514.

2.2. Project Overview

The Project is located approximately 350km northeast of Perth in Western Australia (Figure 1). The site is immediately adjacent to the Great Northern Highway, approximately 80km north of Wubin.

The hematite mining component of the Project controlled and operated by MGM has been completed. This component of the Project previously involved the re-handling and on site crushing and screening of hematite ore. Licence L8495/2010/2 continued to be held for the project to allow entrainment of class I and class II wastes generated by the progressive closure and rehabilitation into the approved landfill sites. Transport of the direct shipping grade ore product previously occurred via road haulage to the Perenjori Rail Siding and rail transport to the Geraldton Port. Transport aspects of the Project

were assessed and approved by the Western Australian Minister for the Environment in a separate proposal (Ministerial Statement 786 issued to MGM) and are not covered in this report.

Mine infrastructure required for the Project includes administration areas, workshops, crusher, processing plant, and accommodation camp. The infrastructure for the Hematite Operation is shown in Figure 2. This infrastructure was used to support the Iron Hill Deposits Project (Statement 1045) and to previously process the remaining sub-grade ore from the hematite component of the Project.

In May 2023, EHPL entered into an agreement with a mining company (Terra Mining Pty Ltd) to commence mining of high-grade direct ship ore (DSO) magnetite from the Extension Hill Project. Mining operations recommenced in June 2023 with drilling occurring in the Extension Hill pit. Mining of DSO magnetite commenced in late September 2023. Mining of DSO magnetite uses the same mining and ore processing methods as for the previous haematite project, largely within the same mine footprint and with the same water use requirement. It is anticipated that approximately 10 million tonnes of magnetite ore will be mined over a period of three to four years. It should be noted that this will not trigger implementation of the larger magnetite component of the Project.

The approved vegetation clearing for the Project is not to exceed 1,179 hectares at the mine site, 112 hectares for the services corridor, and 39 hectares for a power line corridor between the mine site and the South West Interconnection System grid near Three Springs.

In July 2023, MGM sold its assets, rights and obligations to a subsidiary company of Fenix Resources Pty Ltd. MGM will have no future interest in development nor operations at EHHO and will move to transfer its proponency of approval instruments to owner parties in due course.

Figure 1 Project Location

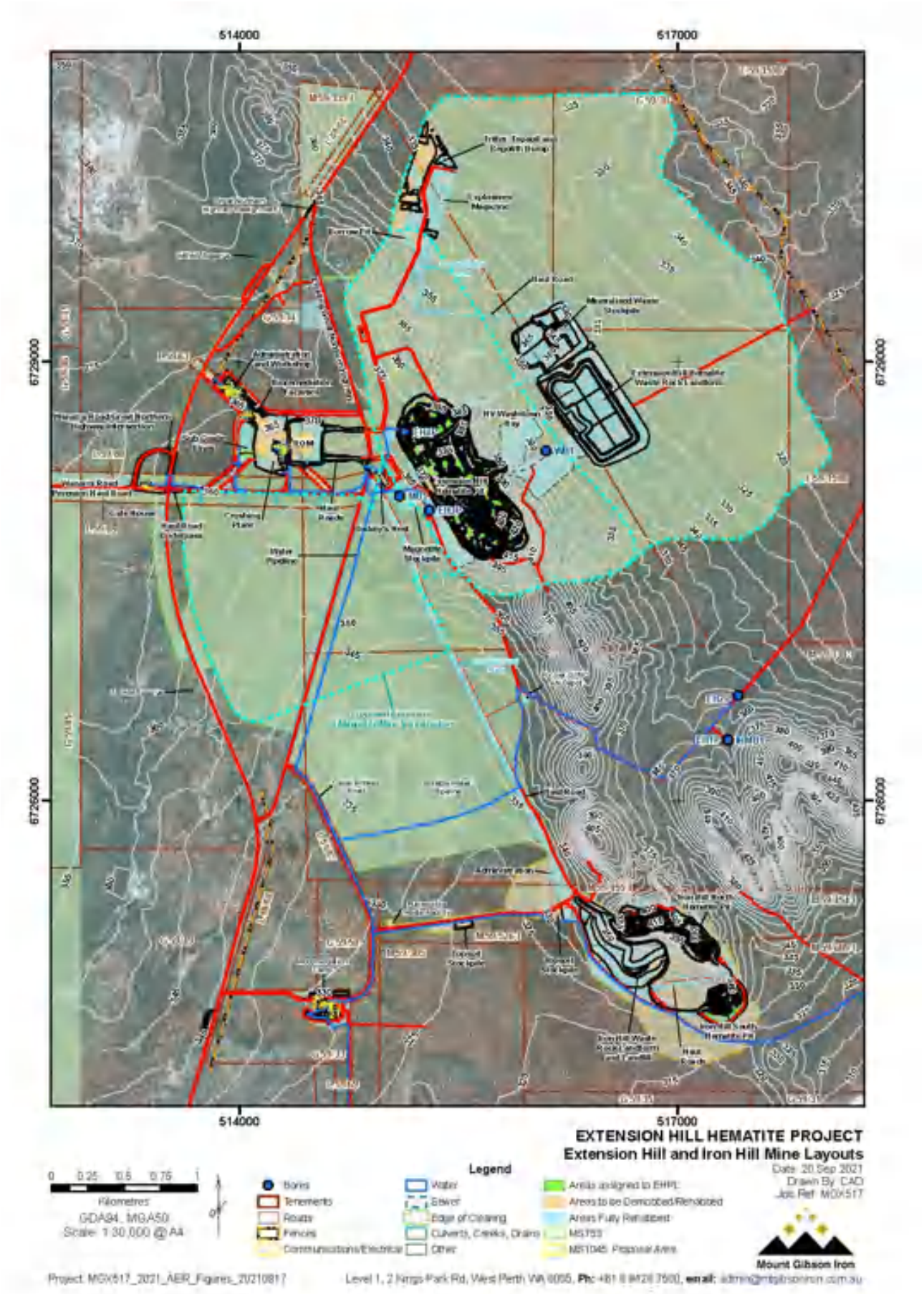


Figure 2 EHHO Site Layout

Hematite Operation

After starting in 2011, hematite mining from the Extension Hill mine pit (EHHO) first ceased in November 2016. Whilst mining was being undertaken, material was separated into three categories; hematite ore (with categories based on ore grade), sub-grade ore and waste. Waste material was transferred to a created waste rock landform (WRL). Sub-grade ore was stockpiled separately in a mineralised waste stockpile at the northern end of the Extension Hill WRL. This sub-grade ore was processed by mid-2020. Three additional areas of sub-grade ore, comprised of shallow detrital hematite, were mined using free-dig methods in late 2020. These sources of detrital hematite at Extension Hill were exhausted 9 months prior to the start of the current reporting period.

The ore was processed by crushing and screening to separate lump (6.3 - 32.0mm) and fines material (<6.3mm). The processed ore was then loaded onto road trains for transport to the Perenjori Rail Siding. The infrastructure approved for the Project was not utilised during this reporting period. Other infrastructure such as the administration offices, workshops and bulk fuel storage containers were previously decommissioned. A contaminated sites investigation of these three areas was completed by an external consultant during the reporting period (ABEC, 2022). In June 2023, rights to the Hematite project including Iron Hill were sold to Fenix and are currently being on-sold to EHPL.

The total land area for the Project to date is 239.70ha[1], including exploration activities. The hematite operation was only a small part of the approved development area (1,179ha). No further rehabilitation was undertaken during this reporting period, however the following was conducted:

- collection and removal of assorted scrap steel and metal from the workshop and laydown precinct and waste water treatment area ;
- excavation and remediation of hydrocarbons in soils in the workshop precinct for landfill disposal after screening.

The cumulative total vegetation clearing to date also includes existing access roads, such as Great Northern Highway and Wanarra Road.

Cleared and developed by MGM	199.86ha
Rehabilitated by MGM	232.88ha
Assigned to EHPL (tenement owner)	68.96ha
Area remaining un-rehabilitated	33.02ha

2.3. Magnetite Operation

Magnetite exploration activities for the reporting period were focused on the Extension Hill magnetite deposit and included an RC drilling program to improve the local resource confidence and determine potential product specifications. Drilling took place between the 1st of June and 20th of August 2023 and a total of 119 holes were drilled. Note, no vegetation clearing was undertaken as the activity occurred in the established pit.

3. COMPLIANCE

3.1. Department of Water and Environmental Regulation (Ministerial Statement 753)

Appendix A presents the findings of an internal audit of compliance with the approval conditions of Ministerial Statement 753. The compliance status, as defined in OEPA (2012), of each condition was assessed. All items were found to be 'Compliant', 'Completed' or 'Not required at this stage'.

Conditions 6.3 and 7.3 requiring the submission of Recovery Plans for *Darwinia masonii* and *Lepidosperma gibsonii* remain listed as 'in process' with DWER. The Plans were initially submitted in previous periods and have subsequently been revised following ongoing consultation with and after a written request of DWER. The proponents re-submitted the latest version of the two rare species plans to DWER on 20 June 2023.

Condition 13 of Ministerial Statement 753 (items 753:M13.1 – 753:M13.12) are all classified as 'No longer relevant'. These conditions are all superseded by Condition 13 (items 889:M13.1 – 889:M13.10) of Ministerial Statement 889 (MS889). These conditions have been added to the audit table in Appendix A but are not required at this stage as the construction of the services corridor is yet to commence.

Condition 15 of Ministerial Statement 753 (items 753:M15.1 – 753:M15.3) was removed in its entirety with the issuing of MS889 and is 'No longer relevant'.

3.2. Department of Water and Environmental Regulation (Licence L8495/2010/2)

The Annual Audit Compliance Report required under condition 5.1.3 of Licence L8495/2010/2 is included in Appendix B. All licence conditions were found to be 'Compliant' during the reporting period.

The treated washdown bay water was decommissioned during this period so there were no emissions to land and the emission monitoring required under condition 2.5.1 was not applicable during this period.

There were no community complaints relating to the mine site during the reporting period.

3.3. Department of Climate Change, Energy, the Environment and Water

An assessment of compliance against the approval conditions (EPBC Act Ref 2005/2381) is included in Appendix C. There were no non-compliances identified during this reporting period.

There were no external audits undertaken against the EPBC Act approval, Ref 2005/2381 during the reporting period.

3.4. Incidents

There were no environmental incidents recorded for the Project during the period.

4. ENVIRONMENTAL MANAGEMENT AND MONITORING

4.1 Weather Monitoring

The nearest Bureau of Meteorology (BOM) weather stations are located at Dalwallinu and Paynes Find. Dalwallinu is approximately 100km south of the project and Paynes Find is approximately 100km north of the project. The Dalwallinu BOM data set was used in the previous report, however the Paynes Find station was chosen as representative of the Project area in this report.

Rainfall

The average annual rainfall at the Bureau of Meteorology (BoM) station at Paynes Find is 278.6 mm and average monthly rainfalls range from 10.3 mm in October to 40.1 mm in June (Table 4). Average pan evaporation at Paynes Find exceeds the average rainfall during every month of the year, with mean monthly pan evaporation ranging from 99 mm in June to 477 mm in January.

The total annual rainfall in 2022 was 370.2 mm, 59.9 mm above the annual average. The rainfall for October 2022 to the end of September 2023 was 188.4 mm, which is 90.2 below the average of 244.4 mm for that period.

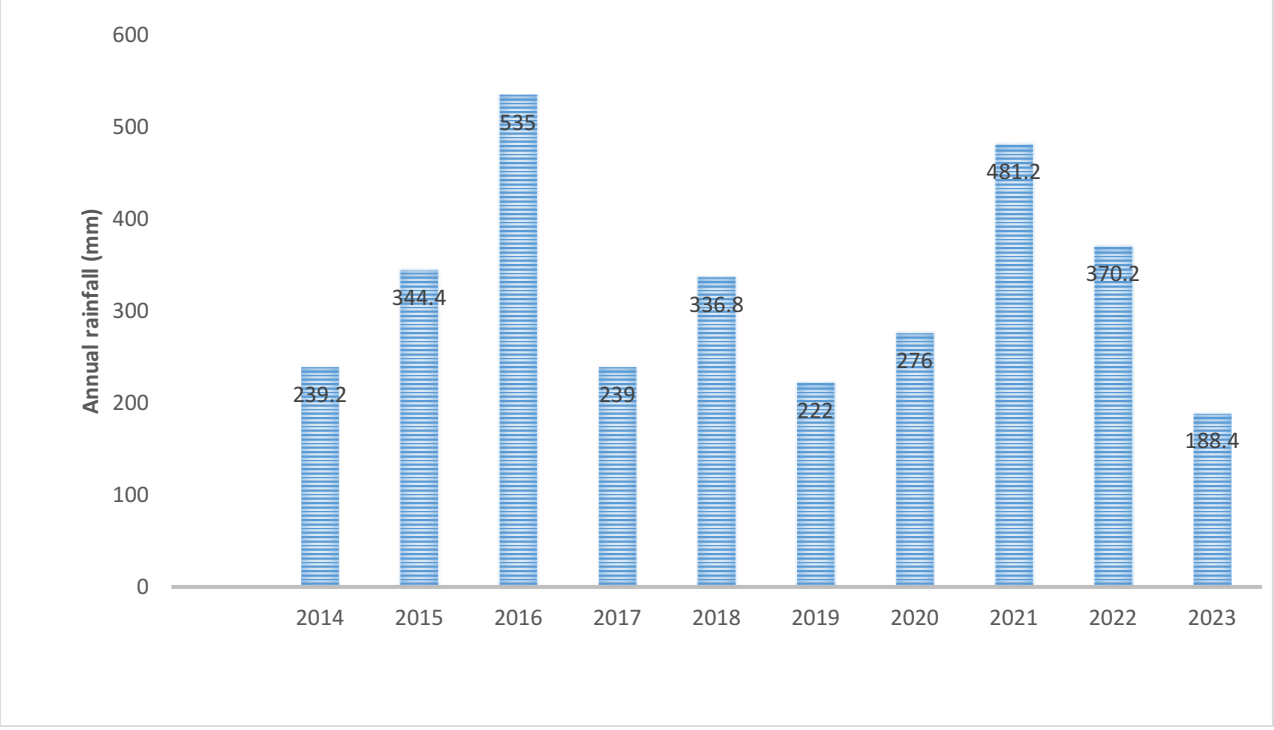


Figure 3 Annual Rainfall Data Summary

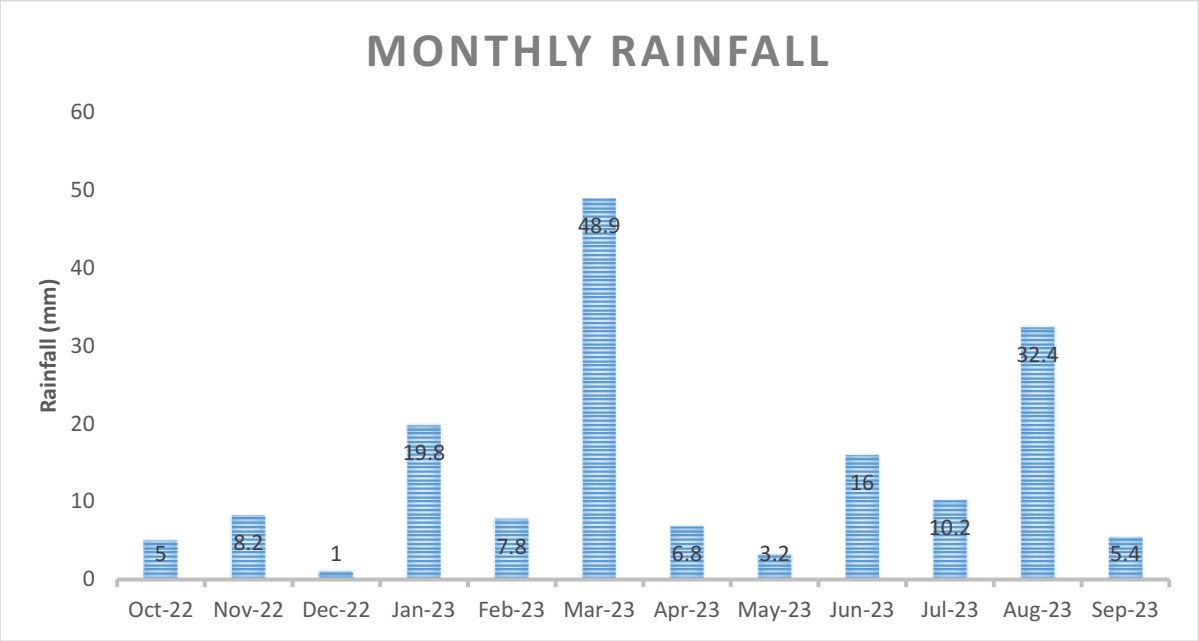


Figure 4 Monthly Rainfall Data

Temperature

The temperature range generally remained consistent with previous reporting periods. The maximum temperature was 45.1^{0}C recorded on 20th February 2023 and the minimum temperature was 0.1^{0}C recorded on 18th June 2023.

Wind Data

Wind data has remained generally consistent with the previous reporting period. The average wind speed over this period was 19.9 km/hr. The wind in the morning was typically blowing from an easterly and north easterly direction. The wind in the afternoon was typically blowing from the south-west and west north-westerly direction. The monthly wind data are summarised in Table 3.

Table 3 Monthly Wind Data Summary

Month	Average Wind Speed (km/hr)	Range of Wind Direction (by month)
October 2021	8	SSW-E
November 2021	11	SE-SSW
December 2021	11	S-WSW
January 2022	10	SE; NNE
February 2022	1	W-SE
March 2022	9	SW-ESE
April 2022	6	SSW-SE
May 2022	7	WSW-ESE
June 2022	4	W; SE
July 2022	6	WSW-NE
August 2022	5	SSE-WSW
September 2023	9	SSE-SSW

4.2 Dust Monitoring

The hematite project's final dust deposition monitoring round was undertaken quarterly October 2022. Monitoring sites had been established at locations within populations of declared rare flora species (*Lepidosperma gibsonii* and *Darwinia masonii*) south of the operation and at selected north, east and west boundary points (Figure 5), to monitor the rate of dust deposition on native vegetation.

Following the approval of the Iron Hill Deposits Project (Ministerial Statement 1045), additional dust deposition gauges were installed around the Iron Hill Deposits Project south of Extension Hill. The results for the Iron Hill Deposits dust deposition gauges were reported separately under Ministerial Statement 1045.

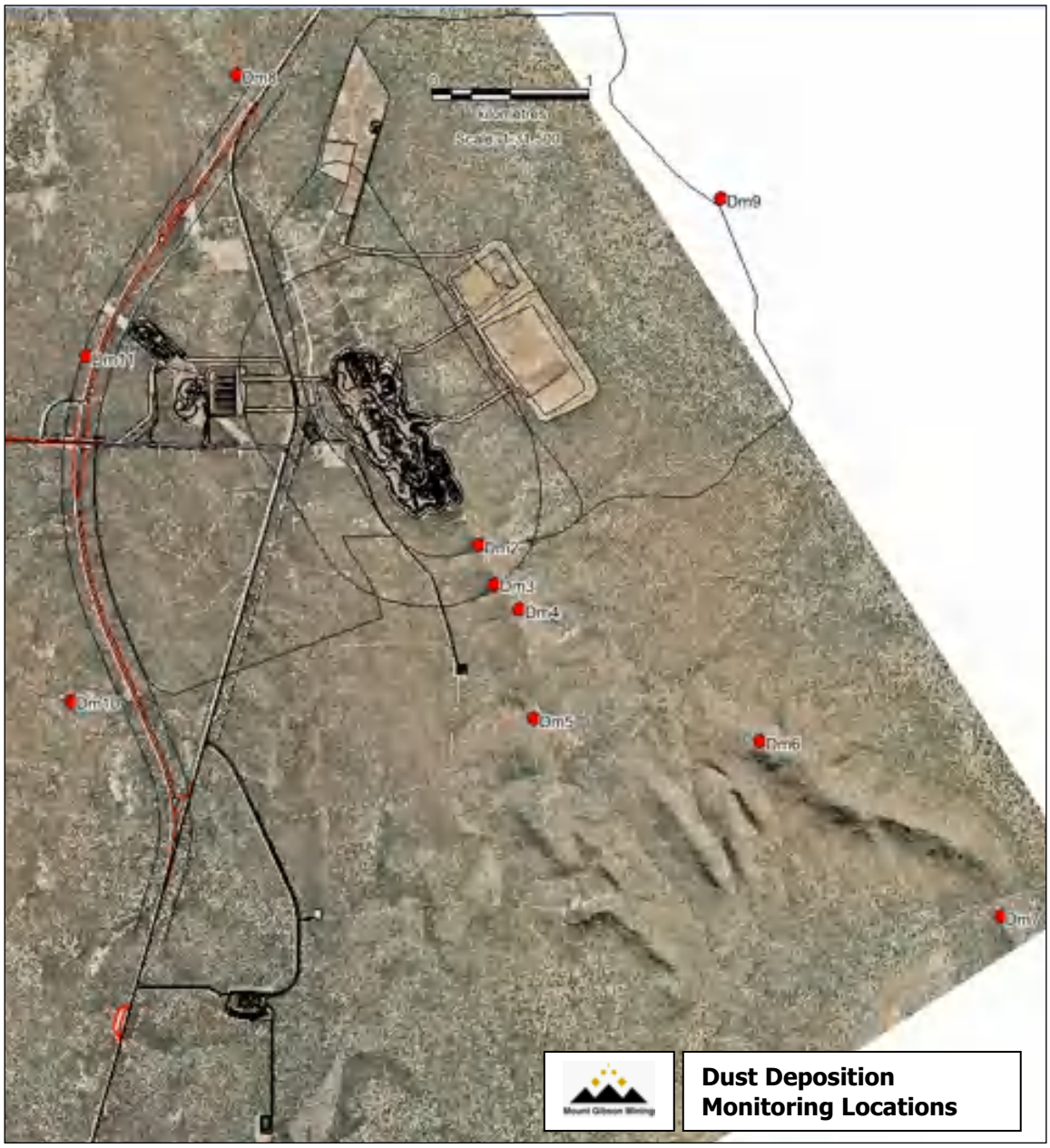


Figure 5 Dust Monitor Locations

As stated in MGM (2020), dust deposition monitoring data was only required to be collected and reviewed for one year following cessation of EHHO mining operations, and if no impacts were detected during that final period, the monitoring would cease. No impacts were detected so all dust deposition gauges were decommissioned in October 2022. The results for the preceding final year are shown in Figure 6; these show low ambient levels of dust accumulation all around the EHHO site.

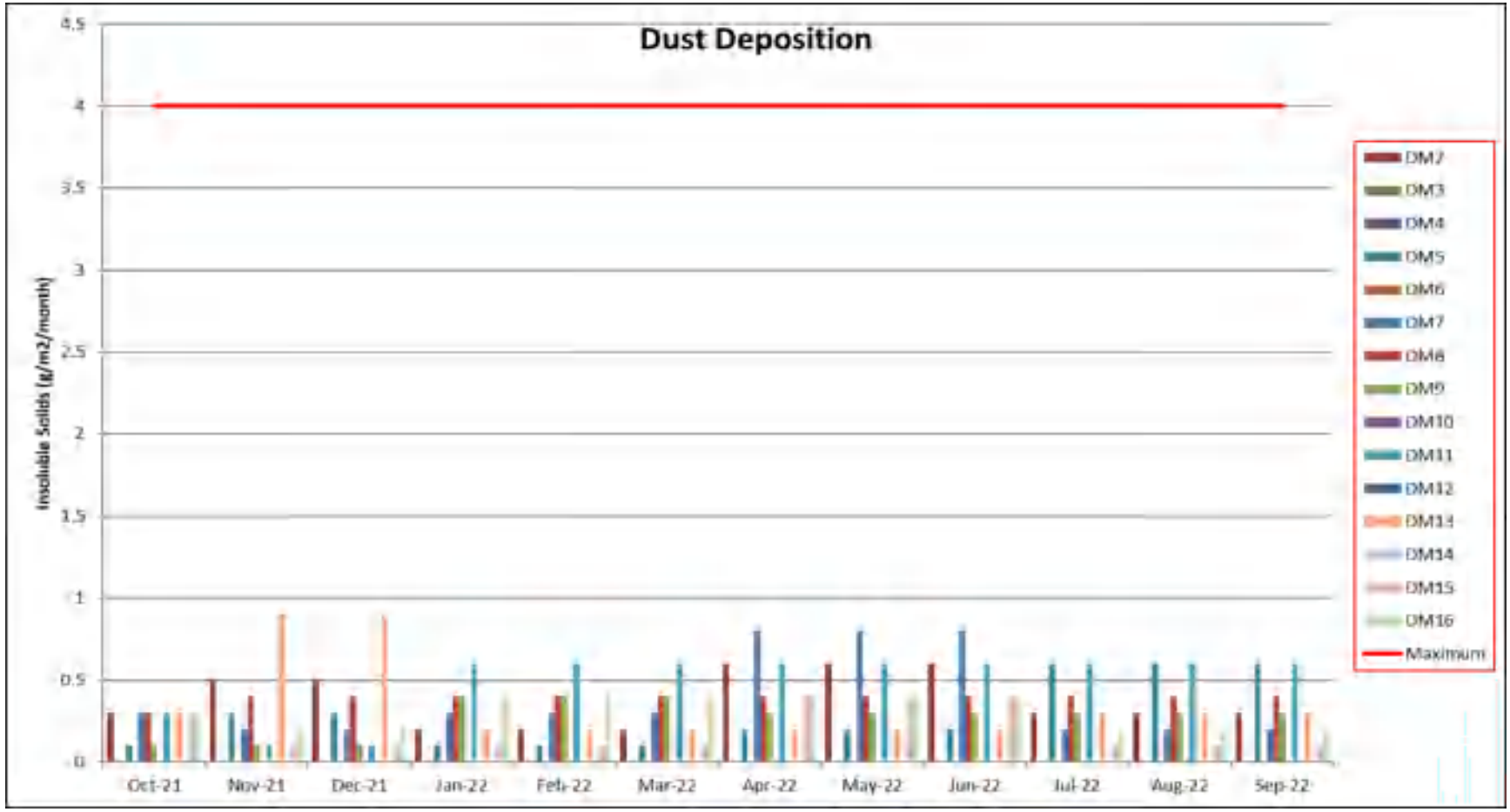


Figure 6 Dust Deposition Data in the final year of site monitoring

4.3 Groundwater Monitoring

Groundwater abstraction is licensed by the Department of Water and Environmental Regulation under groundwater licences GWL 166067 and 156426, which are held by EHPL. A separate groundwater summary report covering the period 1st September to 31st August is provided to the Department of Water and Environmental Regulation annually.

All water previously used on site during hematite mining operations, was sourced from on-site groundwater production bores (EH1P, EH2P, EH3P and EH4P). Post closure of the hematite project, approval was given to reduce monitoring frequency of the production and the monitoring bores (WB1, IHMB1 and MB1), to quarterly, with the last monitoring round for that project, conducted in October 2022, however EHPL conducted another round in May/June of 2023.

PB1 bore in a nearby borefield was not required during the period. Groundwater abstraction from PB1 ceased in December 2018. Previous use of this bore triggered a requirement under the Department of Water and Environmental Regulation Groundwater Licence to also monitor bores MGB8, PB1, PB2, PB3, PB7, OB1, OB3, OB5, OB6, OB10, OB11 and A1P. Monitoring was only required to be completed twice during the reporting period. The locations of all groundwater bores are illustrated in Figure 7.

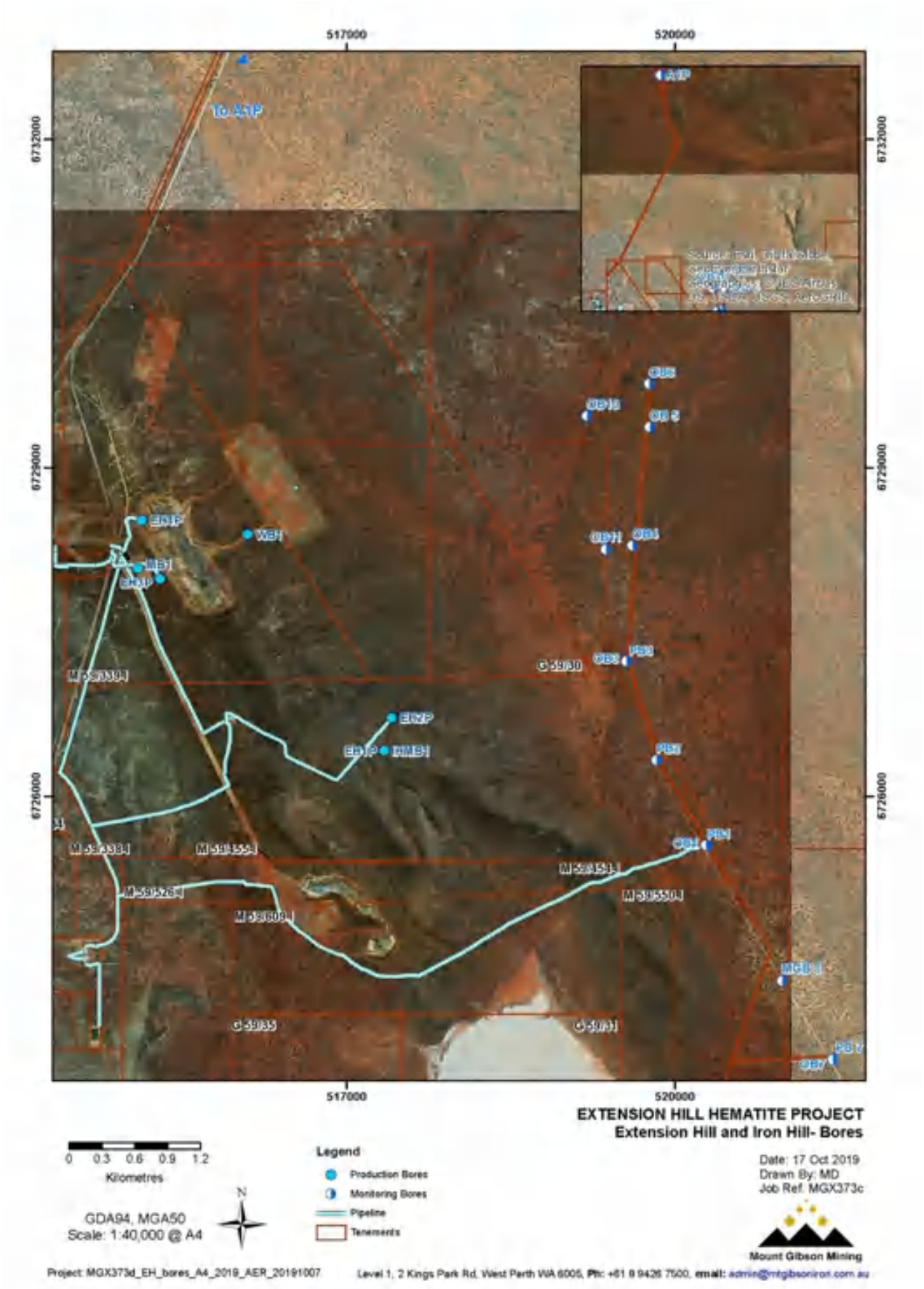


Figure 7 Groundwater Bore Locations

The standing water level (SWL) of each bore, recorded in metres below the top of the bore casing (mBTOC), is shown in Figure 8 and Figure 9. All on-site production and monitoring bores saw a gradual increase in standing water levels over the reporting period (Figure 8). Production for hematite operations ceased from all bores in early 2021 and the corresponding increase in water levels afterwards demonstrates that the local aquifer is recharging.

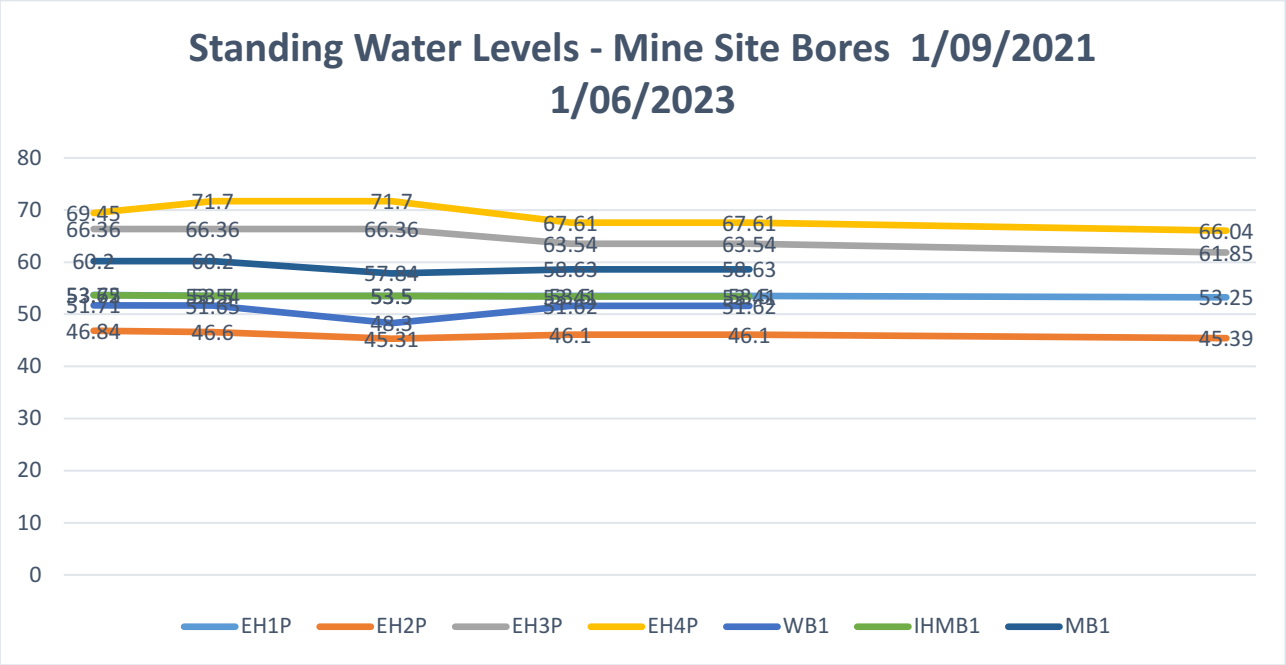
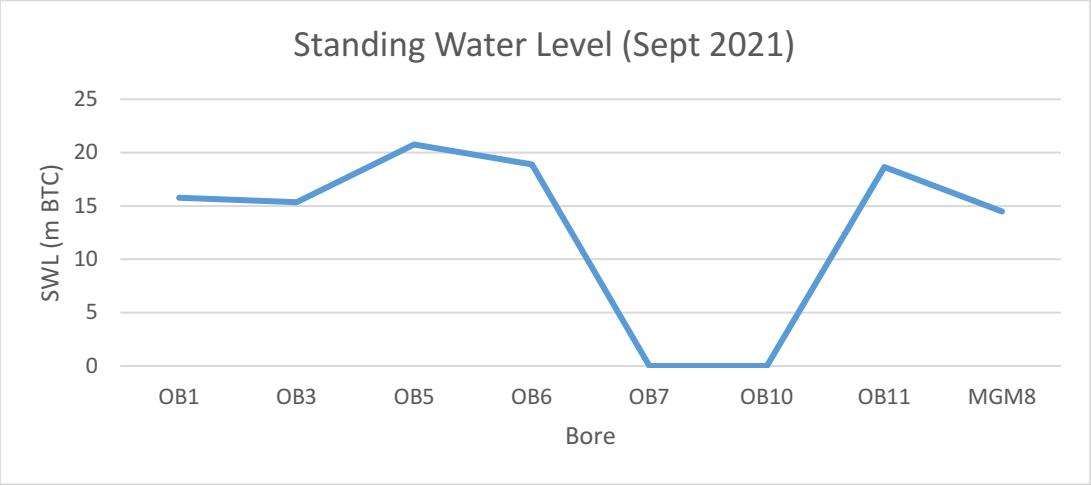


Figure 8 Standing Water Levels (m BTOC) – Mine Site Bores

Abstraction from the only off site bore (PB1) ceased in December 2018. The SWL in PB1 rebounded by 1.35m within two months of the bore being decommissioned and remained stable throughout the reporting period as illustrated in Figure 9. Monthly monitoring ceased in March 2019 and data collection is now once every 6 months by the license holder, EHPL. Observation bores 7 and 10 were blocked at 11.82m and 18.36m respectively. EHPL has received advice from Rockwater Hydrogeological Consultants that airlifting of the bores is recommended. Subject to the availability of an appropriate contractor, EHPL will carry out this procedure before the March 2023 round of monitoring.



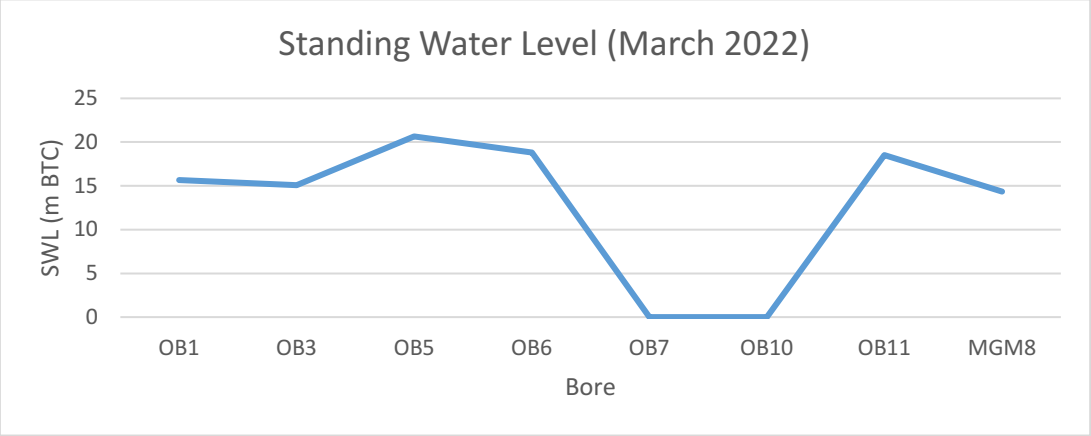


Figure 9 Standing Water Levels – Off Site Bores

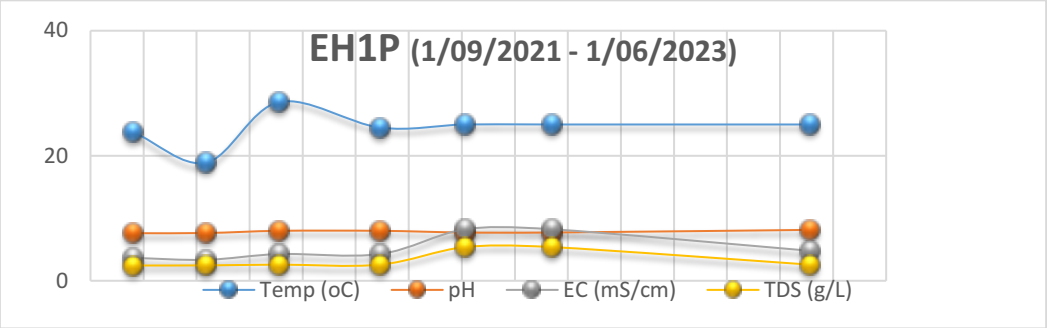
Field analysis – physical parameters (mine site bores)

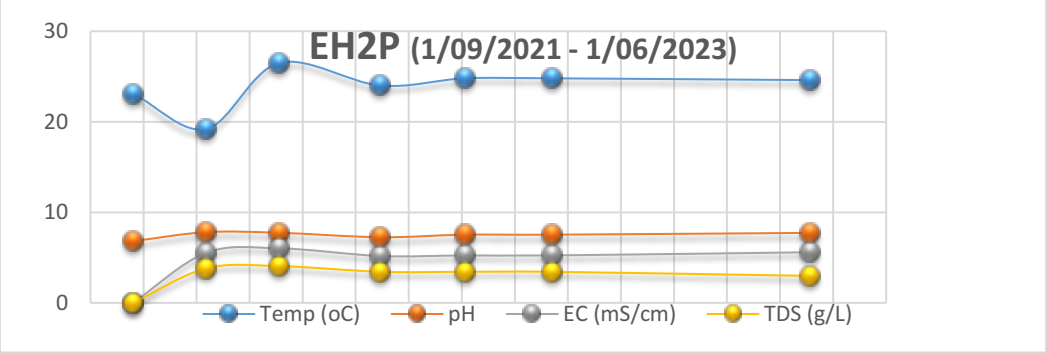
The temperature, pH, electrical conductivity and total dissolved solids (TDS) were measured quarterly in the bores using a YSI Professional Plus field testing water quality meter (Figure 10)

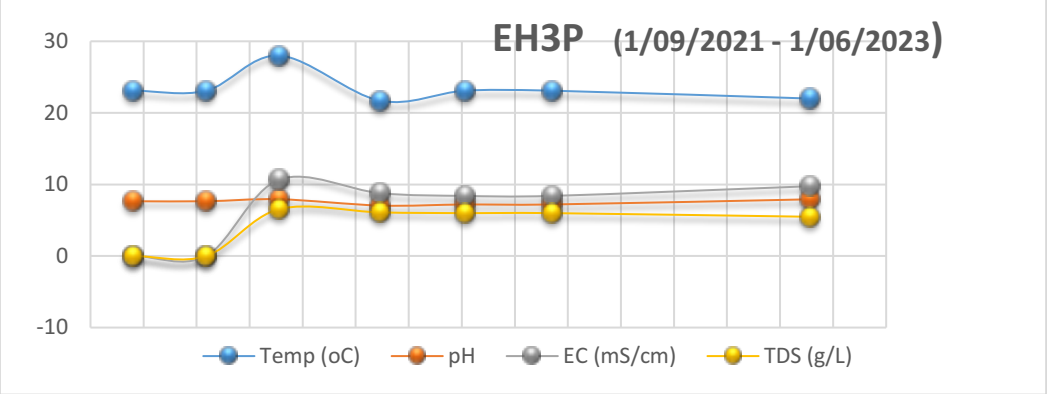
The groundwater is brackish with salinity levels ranging from 2,580 mg/L TDS in EH1P, 2,980mg/L TDS in EH2P, 5,480 mg/L TDS in EH3P and 4,720 mg/L TDS in EH4P during the reporting period. Groundwater pH from the production bores indicates mildly alkaline conditions (pH ranges from 7.73 to 8.72) during the reporting period.

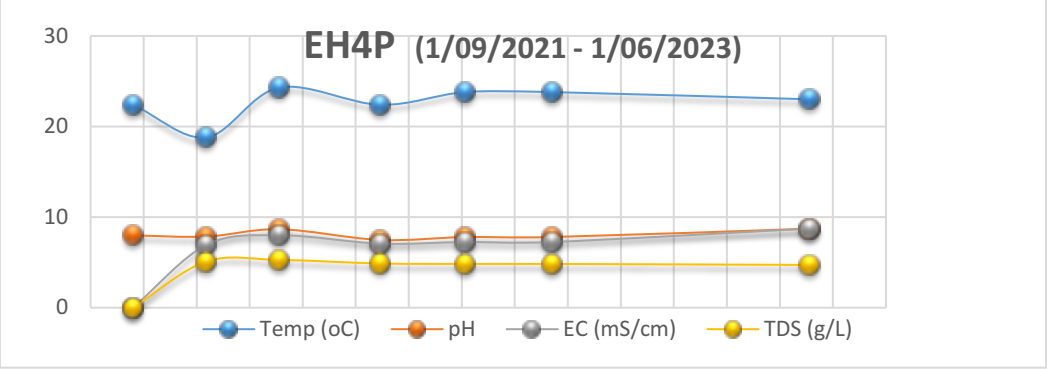
TDS and electrical conductivity in three production bores (EH2P, EH3P and EH4P) generally continued a slight, gradual reduction throughout the reporting period. Bore EH1P in the previous reporting year, showed a slight increase in TDS and electrical conductivity when samples were collected in July 2022. Results from the June 2023 monitoring round indicated a return to the previous decreasing trajectory.

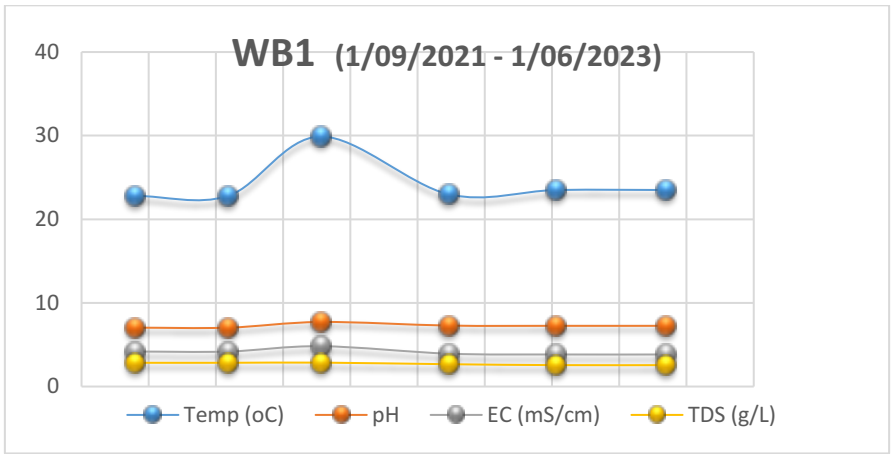
Independent laboratory analysis of groundwater samples was conducted July 2023. The laboratory reports are included in Appendix D. while Table 4. shows a summary of the analysis results.

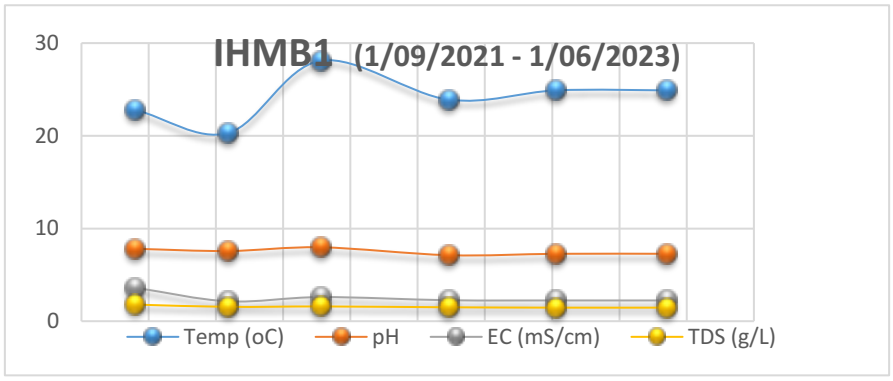

EH1P (1/09/2021 - 1/06/2023)
40
20
0
Temp (oC)
pH
EC (mS/cm)
TDS (g/L)


EH2P (1/09/2021 - 1/06/2023)
30
20
10
0
Temp (oC)
pH
EC (mS/cm)
TDS (g/L)


EH3P (1/09/2021 - 1/06/2023)
30
20
10
0
-10
Temp (oC)
pH
EC (mS/cm)
TDS (g/L)


EH4P (1/09/2021 - 1/06/2023)
30
20
10
0
Temp (oC)
pH
EC (mS/cm)
TDS (g/L)





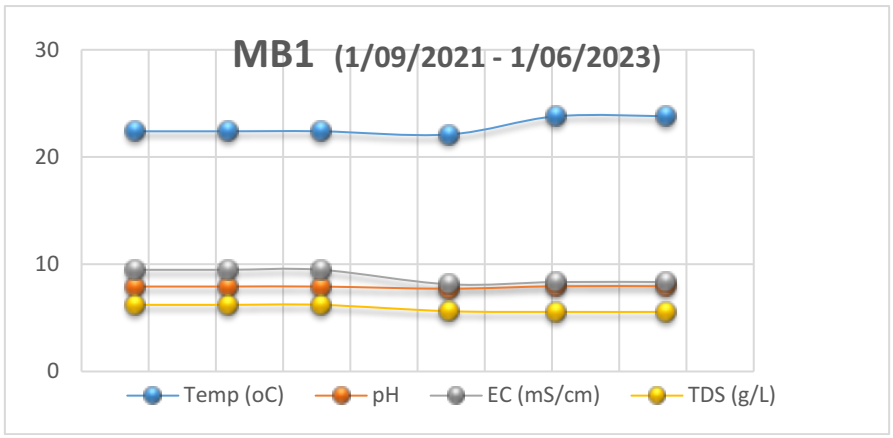
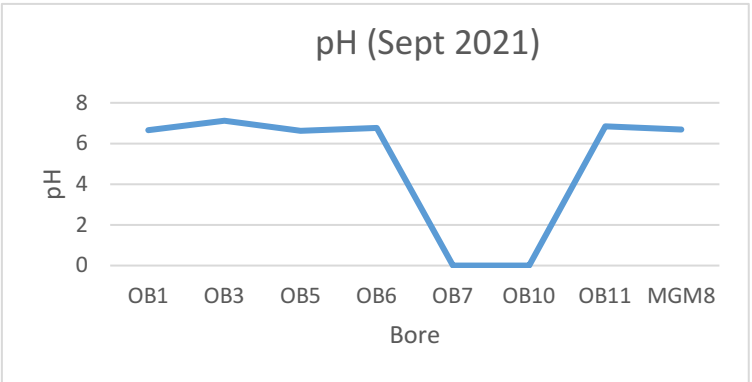


Figure 10 Field Analysis – physical parameters (on-site bores)

Analyte	Units	EH1P	EH2P	EH3P	EH4P
pH	pH Unit	8.14	7.73	7.92	8.72
Total Dissolved Solids	mg/L	2580	2980	5480	4720
Total Hardness as CaCO3	mg/L	408	319	794	661
Carbonate Alkalinity as CaCO3	mg/L	<1	<1	<1	88
Total Alkalinity as CaCO3	mg/L	226	311	344	384
Sulphate	mg/L	290	338	540	414
Chloride	mg/L	1230	1470	2680	2420
Calcium	mg/L	38	330	36	34
Magnesium	mg/L	76	63	171	0.111
Sodium	mg/L	852	1100	1830	1660
Potassium	mg/L	38	40	66	58
Aluminium	mg/L	0.02	<0.01	<0.01	<0.01
Arsenic	mg/L	0.006	<0.001	<0.001	<0.001
Cadmium	mg/L	<0.0001	0.0003	0.0012	0.0004
Chromium	mg/L	<0.001	0.002	<0.001	<0.001
Manganese	mg/L	0.257	0.018	0.37	0.111
Lead	mg/L	<0.001	0.008	0.011	0.002
Zinc	mg/L	0.032	0.445	1.41	0.289
Iron	mg/L	<0.05	<0.05	0.08	0.09
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
Ammonia as N	mg/L	0.06	<0.01	0.01	0.01
Nitrite as NO2	mg/L	<0.01	<0.01	<0.01	<0.01
Nitrate as NO3	mg/L	0.28	1.94	<0.01	<0.01
Total Phosphorus as P	mg/L	0.14	0.02	0.12	0.03

Table 4 Summary of Laboratory Results

Groundwater at all offsite monitoring bores associated with the Legends borefield showed very minor fluctuations in pH and electrical conductivity during the reporting period (Figure 11).



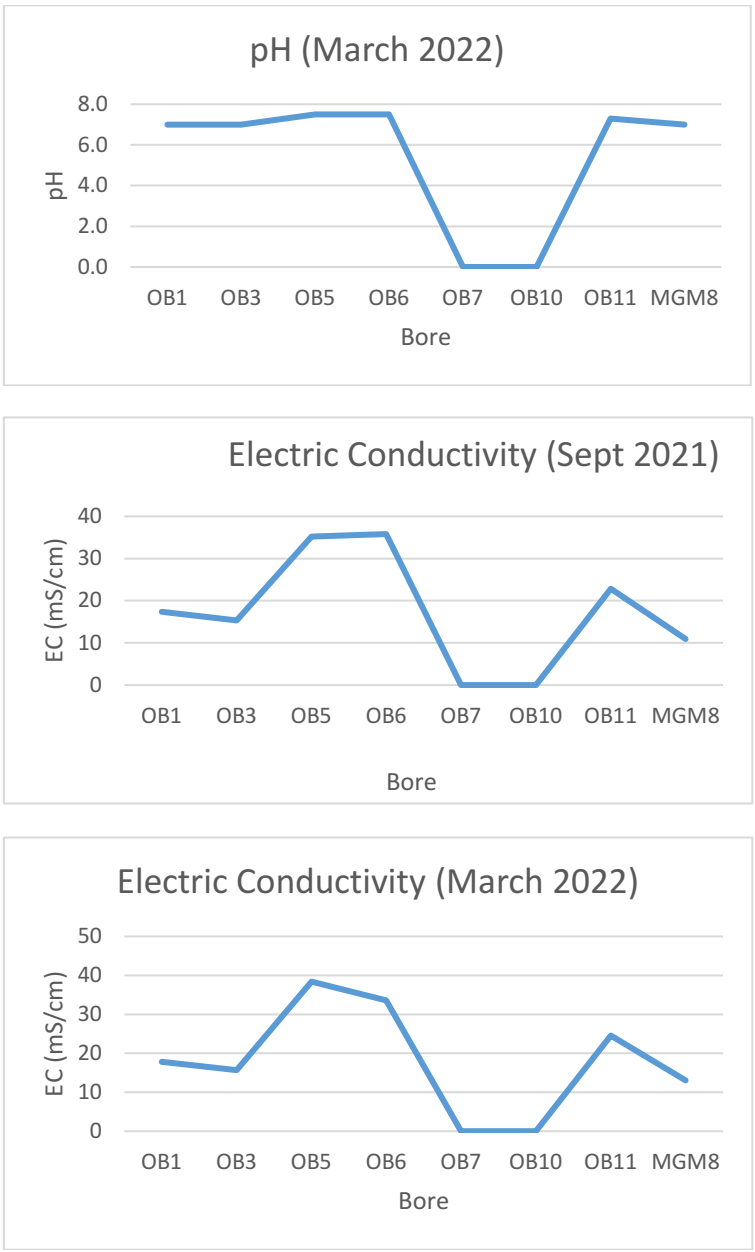


Figure 11 Field analysis – physical parameters (off site bores)

4.4 Vegetation Monitoring

2021 Declared Rare Flora Annual Monitoring Summary

The annual Declared Rare Flora monitoring survey was conducted in November 2022 by Emerge Associates at sites shown in Figure 16. The plant health rating scores used to complete this survey are shown in Tables 4 and 5. As mentioned previously, all hematite mining activities had ceased at EHHO in late 2020.

Emerge (2023) reached the following conclusion from the 2022 survey data:

"Emerge Associates personnel conducted a field survey in November 2022 during which 35 Darwinia masonii plots and 15 Lepidosperma gibsonii plots were monitored according to MGM's Site Work Instruction (SWI) for vegetation monitoring (SWI 385) (MGX 2015).

Outcomes of the 2022 monitoring include the following:

- *The threatened flora monitoring programme continues to satisfy requirements to monitor at least 715 individuals of D. masonii and L. gibsonii.*
- *The monitored populations of D. masonii and L. gibsonii appear to be stable and plant health remains consistent with the results from the 2021 survey. Observations from ongoing monitoring suggest that previous mining operations and rehabilitation activities at the Extension Hill Hematite Operation have not adversely impacted populations of either species.*
- *No apparent indirect impacts to either species from mining as a result of excessive dust deposition or weed invasion have been observed.*
- *No apparent impacts to the health or persistence of either species as a result of grazing by introduced or native animals have been observed.*
- *The 2022 results do not indicate any significant changes to populations of either species that would warrant additional investigation by MGM.*

Sufficient numbers of individuals were monitored within each plot to achieve the number requirement with Plans for both species. The full Emerge (2023) report has been attached as Appendix E.

Table 5 ***Darwinia masonii*** **vegetation health and condition scoring matrix**

Score	Plant vigour	Canopy	Leaf colour	New growth
0 Near death	Dead or nearly	Absent or nearly	Yellow/brown	Absent
1 Poor	Very low	Thin	Yellow/brown	Absent
2 Poor	Moderate	Moderate-full	Grey-green some yellow-brown	Absent
3 Fine	Good	Full	Blue-green	Present

Table 6*Lepidosperma gibsonii* **plant health and condition scoring matrix**

Score	Plant vigour	Leaf colour	New growth	Reproduction
0 Near death	Dead or nearly	Yellow/brown	Absent	Little or none
1 Poor	Very low	Yellow/brown	Absent	Few inflorescences
2 Good	Moderate	Grey-green some yellow-brown	Absent	Many inflorescences

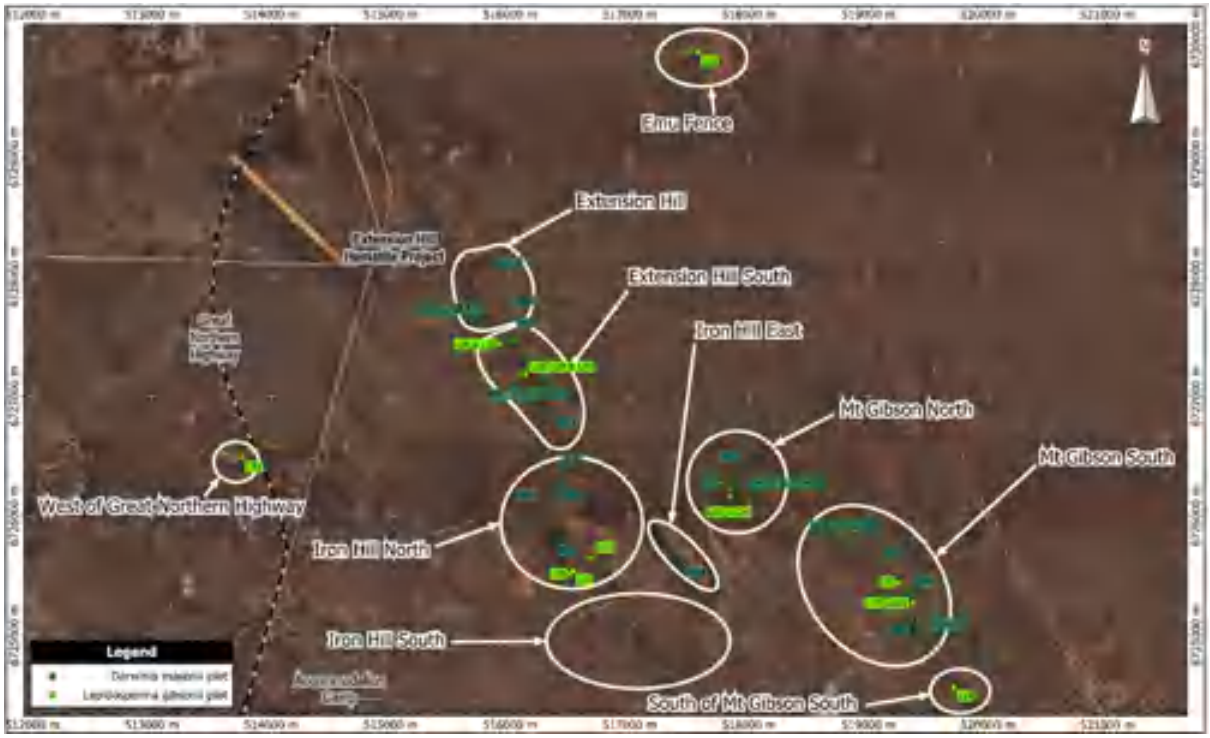


Figure 12 DRF monitoring sites

Normalised Difference Vegetation Index (NDVI)

Hydrobiology WA Pty Ltd (2022) conducted a remote sensing analysis of vegetation quality on and around the Extension Hill (EH) Waste Rock Landform (WRL) (and Iron Hill (IH)) (Figure 13). A complete copy of the report is attached as Appendix F. Over the course of years, the analysis examined:

- revegetation and its progression through time on the EH WRL from a largely unvegetated yet rehabilitated surface to an area abundant in native vegetation; and

- the time series in quality of standing vegetation within a mining domain before, during and after mining activity.

Sentinel-2 multispectral imagery was acquired on a monthly basis from January 2016 to October 2022 to capture potential changes in vegetation quality at reference (ie. natural) and test (direct and indirectly disturbed) areas. The Normalised Difference Vegetation Index (NDVI) was calculated as a proxy for vegetation cover and foliage quality as it provides a reliable and consistent measure of chlorophyll content. The assigned areas of similar setting, shape and areas are shown in Figure 13. The rehabilitated areas (landforming; dressing; ripping; seeding) were completed from 2015 onwards, so up to six years of progression in revegetation is evident.

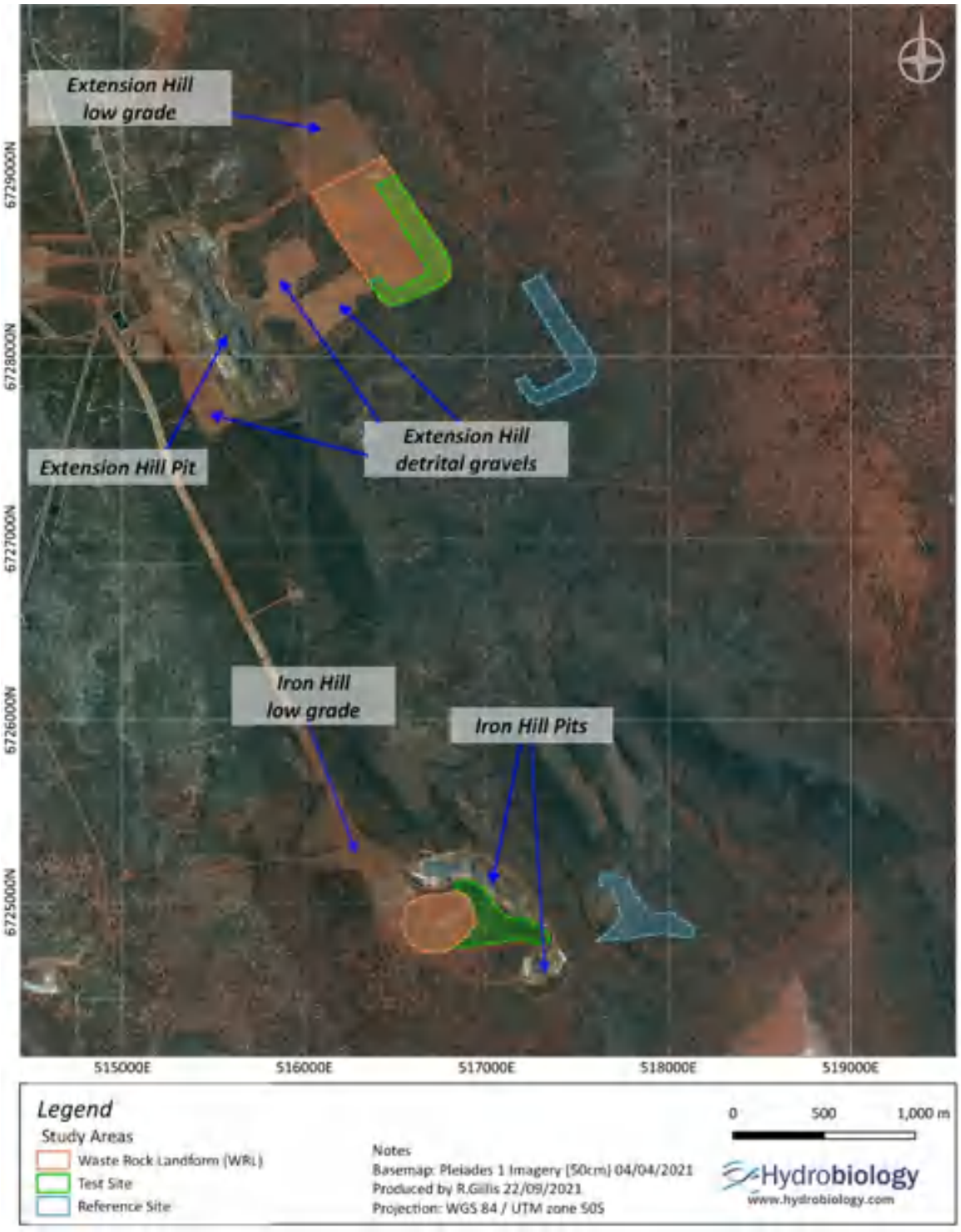


Figure 13 Overview of Extension Hill and Iron Hill sites.
Waste rock landform, test and reference areas are depicted by dashed lines.

NDVI results at Extension Hill are presented in Figure 14 and raw data (per month) in Appendix F. The increase in vegetative quality and progression of rehabilitation from late-July 2016 to October 2023 can be seen by time series analysis in Figure 14.

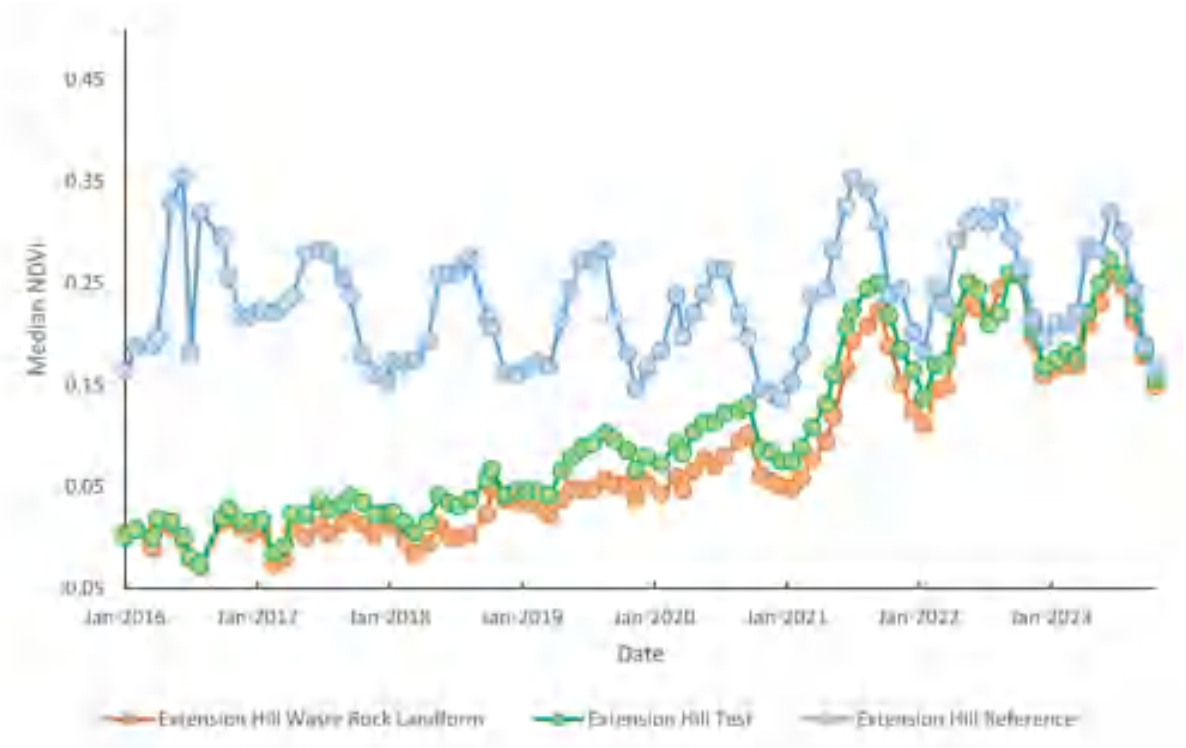


Figure 14 Extension Hill (EH) median NDVI results over time for the Waste Rock Landform – orange is WRL flat top, green is outer slope and blue is adjacent natural woodland Reference area

Figure 15 shows a false colour rendering of the cover of different vegetation densities. The effect of rehabilitation and vegetative regrowth is clearly evident over the course of six years.

Figure 15 Comparison of vegetative quality (NDVI) in late October 2016 to October 2022 at the Extension Hill study areas (dark green shows highest foliage cover; grey/yellow is bare land).

From Hydrobiology (2022), the results of the assessment can be summarised as follows:

Rehabilitation of vegetation at the Extension Hill waste rock landform progressed steadily in the period under assessment. A substantial increase in vegetation cover and quality was observed. This can be attributed to above-average rainfall in the region.

Based on a simple linear regression, rehabilitation at the EH WRL and EH Test is forecasted to meet the average NDVI at the reference area within the next several months (NDVI=0.266, October 2021 – October 2022).

Annual Weed Survey and control

Although a reduced post-closure environmental monitoring regime continued during the reporting period, weed hygiene practices were followed by all company and contracted personnel involved in monitoring.

MBS Environmental were commissioned to oversight weed control work undertaken on the species and areas identified upon survey. The final control work was conducted in October 2021, preceding this reporting period.

4.5 Malleefowl Management and Monitoring

As previously flagged, the Malleefowl mound survey completed in 2021, was the last survey commissioned for the MGM hematite component of Extension Hill operations. The intention to cease annual survey's was endorsed by DCCEEW in June 2022 based on the amended plan (Version 2). MGM and EHPL await feedback from DWER on the Version 2 Malleefowl Management Plan.

For Spring 2023, EHPL had arranged NMRT for the malleefowl monitoring on the associated tenements. Survey results are pending at the time of this report.

Malleefowl Mound Monitoring (EPBC Act Ref 2005/2381 conditions 2c)I and 2c)ii

MGM engaged the National Malleefowl Recovery Team (NMRT) to conduct a round of malleefowl mound monitoring in October 2021. The NMRT monitored all mounds away from mining activities and also some closer to previously active operations. The survey signified the final round of monitoring to MGM's hematite phase of the project.

Malleefowl Sightings or Mortalities

MGM was not made aware of any malleefowl sightings or mortalities on the tenements during the reporting period.

4.6 Waste Management

In the previous reporting period, as part of the decommissioning and DSI process initiated by MGM for the administration and workshop domains, any metal materials (scrap; deconstructed fabrications) that could be recycled were stockpiled for collection and removal, while other waste materials were classified by ABEC (2022) as either suitable for re-use on-site, suitable for disposal to the on-site class II landfill, or requiring further treatment at the existing bioremediation facility.

Previously, approximately 1000m3 of hydrocarbon and metal-affected materials were excavated from discrete areas within former EHHO operational areas of the Extension Hill Mine site (ABEC Environmental Consulting Pty Ltd, 2022). The material was not immediately suitable for disposal within

the onsite Class 2 landfill and was left to bioremediate for approximately 18 months. Upon testing at the end of a suitable bioremediation period, the contaminant load was sufficiently reduced to allow onsite disposal of all 1000m3 to the licensed Class 2 landfill.

5. REHABILITATION AND CLOSURE PLANNING

Rehabilitation status

No further areas of the project were progressively rehabilitated during this previous reporting period. The total rehabilitated area on site to date is 125.91ha. In previous years, seeding of all newly rehabilitated areas was conducted soon after deep ripping on the contour was complete. Figure 2 illustrates areas that have been rehabilitated to date.

Emerge Associates were engaged by MGM to conduct rehabilitation monitoring at Extension Hill. A field survey was undertaken in October 2022 during which ecosystem function analysis was conducted at previously established transects and associated quadrats within rehabilitated areas of different age and analogue sites. This monitoring combined the use of both landscape function analysis ('LFA') and vegetation assessments. The following is an extract of the main conclusions from Emerge (2023):

"

- In 2022, a total of 102 native species were recorded within rehabilitated areas of the WRL, 38 native species were recorded within the flats rehabilitated areas and 63 native species were recorded within the analogue sites.
- Three non-native (weed) species were recorded within rehabilitated areas and none were recorded within the analogue sites.
- Three priority flora species were recorded in 2022. Acacia cerastes (P1) was recorded within rehabilitated areas and Acacia ?trinalis (P1) was recorded within analogue sites. Hibbertia cockertoniana (P3) was recorded for the first time on rehabilitated areas and suspected to have also been recorded within the analogue sites.

Outcomes of the rehabilitation monitoring at Extension Hill indicate the following:

- Post-mining landforms are satisfying completion criteria for stability, infiltration and nutrient indices.
- Rehabilitated areas are satisfying completion criteria for native species richness and density, and weed cover. "

> It is notable in the previous annual period, based on spring 2021 results, that there was a *total of 68 native species recorded within WRL rehabilitated areas and a total of 25 native species recorded within the flats rehabilitated areas The increasing native species richness in time on rehabilitated plan is evident by comparing 2021 to 2022.*

For the rehabilitation on site to date (more than 50% of footprint), based on the permanent monitoring transect results, **all targets as adopted for all six landscape parameters have been met**.

This shows:

- that landform function and stability including floral richness and vegetation cover targets have been met within several years of rehabilitation at the EHHO areas under rehabilitation;

- the methods adopted at Extension Hill are applicable in promoting progressive land rehabilitation and ultimately meeting closure outcomes.

- 2022 survey results showed that rehabilitation had improved in all eleven categories tested since the 2021 monitoring. Additionally, the criteria have met the completion criteria since 2018 and continue to meet all closure criteria based on the updated analogue comparison.

Closure Planning

A Mine Closure Plan for the EHHO was approved by the Department of Mines and Petroleum (now the Department of Mines, Industry Regulation and Safety) in February 2016. It was submitted to the Office of the Environmental Protection Authority (now DWER) in March 2016. This Plan was revised and re-submitted to the Department of Mines and Petroleum (DMIRS) in October 2016.

A further revision of the plan (v5.0) was submitted to DMIRS and DWER in mid-2020. At the end of the reporting period, MGM had not received any review comments on v5.0 from either DMIRS or DWER. In addition, EHPL received notification from DMIRS on 22 June 2022 that the MCP had been determined as "lower risk" and therefore the next revision was not required until 31 October 2023. Given the currently occurring change in ownership of the MGM rights and obligations, it will be EHPL's responsibility to address the MCP.

The Project has been in a care and maintenance phase following the cessation of mining in late 2020. Remaining Infrastructure which includes the crushing and screening infrastructure, and the accommodation village, are currently transferring to EHPL from Fenix.

The quantity of rehabilitation material available is listed in Table 11.

Table 7 Cover Material Stores

Location	Component	Volume* (m^3)
EH Waste Dump	Tritter	4,894
	Topsoil	10,900
	Subsoil	57,418
Waste Dump Cell 1	Subsoil	0
Mine Pit (Community FCT 10-01)	Tritter	2,656
	Topsoil	2,153
	Regolith/Subsoil	0
Mine Pit (Community FCT 10-02)	Tritter	0
	Topsoil	0
	Subsoil	10,374
Village	Topsoil/subsoil	8,273
Sewage pond	Topsoil/subsoil	1,685
Admin/workshop/crusher	Topsoil/subsoil	21,168
Admin/crusher rd.	Topsoil/subsoil	792
Turkeys nest	Topsoil/subsoil	0
Magnetite stockpile area	Topsoil/subsoil	2,063
Magnetite village	Topsoil/subsoil	2,880
Loadout (old GNH)	Topsoil/subsoil	5,215
IH camp road stockpile	Topsoil	10,041
IH infrastructure stockpile	Topsoil	10,233
	Total	**150,745**

*Volume available as confirmed by final survey data as of January 2019. All tritter, topsoil and subsoil materials previously placed on the EH low grade stockpile landform were harvested and re-used during the reporting period.

Research

Monitoring of the *Darwinia masonii* trial translocation to the Extension Hill WRL discontinued during the reporting period. To recap, the trial was commenced in June 2015 by translocating 15 *Darwinia masonii* that were naturally growing in topsoil stockpiles to the WRL and including five additional *Darwinia masonii* juveniles that were grown in a nursery from cuttings as control plants. Nineteen plants are still alive and 18 were recorded flowering on the 7th September 2022. The average total growth from the commencement of the trial to 7th September 2022 was **111cm**. The results to date indicated that *Darwinia masonii* is capable of surviving transplantation of wild grown seedlings and that the WRL cover material is suitable for the survival of these plants.

A separate *Darwinia masonii* translocation trial was established at a plot (Plot 23) located approximately 1km south east of the Extension Hill mine pit in September 2016. The trial differed to the WRL trial as it is located on an area previously disturbed by historical exploration activities but other on BIF ridge top. The substrate is very different to that of the WRL with very little topsoil cover and hard, intact ground. Approximately 309 juveniles grown from cuttings collected from the Extension Hill *Darwinia masonii* population were planted at Plot 23 in September 2016 and monitored for survival monthly. The plants were watered with irrigation on at least a weekly basis. In September 2018, 147 of these plants were still alive. The plot is not fenced and the high mortality was attributed to:

1. Native animals chewing on the irrigation feeding water to the plants during dry periods over summer, inadvertently trampling the seedlings, and;

2. The ground cover varies however the majority is hard and rocky which seems to be inhibiting plant's growth compared to other trials, established later.

To date, indications are that this method of translocation is possible, however site selection, fencing and suitable ground cover aids success. Comparing the two trials, the WRL substrate and/or the methodology applied in the WRL trial may be more suitable due to the much higher rate of survival. Several *Darwinia masonii* and *Lepidosperma gibsonii* translocation plots have been established via the Iron Hill Deposits Project, predominantly as an approved offset. The results of this rare plant research and offsets translocations is reported separately in relation to MS1045.

Other research and conservation opportunities are sponsored indirectly through past funding provided by the Proponents to the Gunduwa Regional Conservation Association.

6. STAKEHOLDER CONSULTATION AND BIODIVERSITY OFFSETS

MGM first advised its key stakeholders, including by letter in early 2019, of the planned suspension of mining operations at the EHHO during 2019. However, by Q2 2019, because of favourable market conditions for sale of previously mined low grade ore, processing and hauling of mined materials continued through the course of 2019 and into 2020 from mine site to Perenjori Rail Siding. The final withdrawal of MGM from EHHO and its associated transport movements through to Perenjori Rail Siding was advised by liaison with and letters to listed stakeholders in late 2020.

Stakeholders continue to be Australian Wildlife Conservancy, Pindiddy Aboriginal Corporation, Bush Heritage Australia, Wanarra Station, Badimia Bandi Barna Aboriginal Corporation, Rangelands NRM, Northern Agricultural Catchments (NAC) Council; each of the Shires of Perenjori and Yalgoo, the Department of Water and Environmental Regulation, the Department of Biodiversity, Conservation and Attractions, the Department of Mines, Industry Resources and Safety, and Extension Hill Pty Ltd (the tenement holders). Many of the community and NGO members also attend Gunduwa Regional Conservation Association (GRCA) and MGM has been proud to have been a Steering Committee member for the duration of its incorporation over almost ten years. MGM and EHPL both held positions on the Gunduwa Committee, notwithstanding the care and maintenance state of the site and the completion of the EHHO. As proponents those appointments continue into 2023/24.

The key environmental issues discussed included malleefowl management, introduced species, weeds, rare flora management, fire, offsets and mine closure planning.

As the site has not been operational, Badimia Monitoring and Liaison Committee meetings were not held in the preceding period; however payment obligations continue into the Badimia Trust.

Biodiversity offsets funding to Bush Heritage Australia, Pindiddy Aboriginal Corporation and Australian Wildlife Conservancy for this period was paid to the recipient organisations for purposes of on-ground projects, which included management of introduced flora and fauna, re-introduction of native fauna and fire management, on land in the areas immediately surrounding the Project.

The Proponents have continued or arranged to fund in accordance with Schedule 2 of Statement 753 as follows:

- Department of Biodiversity, Conservation and Attractions during this reporting period.
- The Proponents implemented an executed Agreement with GRCA relating to funding upon active mining. The Agreement includes a response for the period of time when mining does not actively occur on the tenements under Statement 753.

7. FUTURE WORK PROGRAM

Hematite Operation

MGM considers that the Project has exhausted its economic hematite reserves via EHHO and has been in a care and maintenance phase. This followed the cessation of mining after final detrital ores on the eastern and western sides of the Extension Hill pit were processed in late 2020.

As a result of the change of ownership of EHHO , the future work program will, from this point onwards be developed and communicated by EHPL, as the lead joint proponent under Statement 753 and EPBC ref 2005/2381.

Magnetite Operation

Exploration, resource development and planning activities will continue at the Extension Hill tenements into 2023. A drilling campaign for magnetite is being planned to inform potential mining options.

8. REFERENCES

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ATA Environmental, GHD Pty Ltd, Maunsell Australia Pty Ltd, Mount Gibson Mining Limited, Extension Hill Pty Ltd (2008), *Extension Hill & Extension Hill North Environmental Management Plan*, Management Plan prepared for Mount Gibson Mining Limited and Extension Hill Pty Ltd.

BGPA (2019), *Interim report on Darwinia masonii fruit and seed production 2018*, prepared for Mount Gibson Mining Limited and Extension Hill Pty Ltd.

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DEC (2005), *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*, Department of Environment and Conservation, Government of New South Wales.

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MBS Environmental (2020), *Weed Survey 2020*, memorandum prepared for Mount Gibson Mining Limited.

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APPENDIX A

Ministerial Statement 753 Audit Table

Office of the Environmental Protection Authority

GOVERNMENT OF WESTERN AUSTRALIA

AUDIT TABLE

Proposal Implementation Monitoring Section

PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO

PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Note:

- Phases that apply in this table = **Pre-Construction, Construction, Operation, Decommissioning, Overall (several phases)**
- This audit table is a summary and timetable of conditions and commitments applying to this project. Refer to the Minister's Statement for full detail/precise wording of individual elements.
- Code prefixes: M = Minister's condition; P = Proponent's commitment; A = Audit specification; N = Procedure.
- Any elements with status = "Audited by proponent only" are legally binding but are not required to be addressed specifically in compliance reports, if complied with.
- Acronyms list:- Min for Env = Minister for the Environment; CEO = Chief Executive Officer of DEC; DEC = Department of Environment and Conservation; DMP = Department of Mining and Petroleum (formerly DoIR = Department of Industry and Resources); EPA = Environmental Protection Authority; DoAF= Department of Agriculture and Food; DoH = Department of Health; DoW = Department of Water; LGA = local Government Authority; AWH = Australian Wildlife Conservancy; ABHF = Australian Bush Heritage Fund; BGPA = Botanic Parks & Gardens Authority; EHPL = Extension Hill Pty Ltd; PAC = Pindiddy Aboriginal Corporation; MGI = Mount Gibson Iron.

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
753:G					Min for Env				
753:M1.1	**Proposal Implementation**	The proponent shall implement the proposal as documented and described in schedule 1 of this statement subject to the conditions and procedures of this statement.	Project implemented in accordance with these criteria	Compliance Report (CR)			Overall		Compliant
753:M2.1	**Proponent Nomination and Contact Details**	The proponent for the time being nominated by the Minister for the Environment under sections 38(6) or 38(7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal.			Min for Env		Overall		Compliant
753:M2.2	**Proponent Nomination and Contact Details**	The proponent shall notify the Chief Executive Officer of the Department of Environment and Conservation (CEO) of any change of the name and address of the proponent for the serving of a notice or other correspondence within 30 days of such change.	Letter notifying the CEO of any change in proponent contact details.	Letter notifying the CEO of any change in proponent contact details.	CEO		Overall	Within 30 Days of such Change	Not required at this stage
753:M3.1	**Time Limit of Authorisation**	The authorisation to implement the proposal provided for in this statement shall lapse and be void within five years after the date of this statement if the proposal to which this statement relates is not substantially commenced.			Min for Env		Construction	Five years after the date of statement 753 if the proposal to which this statement relates is not substantially commenced	Completed
753:M3.2	**Time Limit of Authorisation**	The proponent shall provide the CEO with	Letter notifying the CEO that the proposal has substantially commenced.	Letter notifying the CEO that	CEO		Construction	On or before the expiration	Completed

AUDIT TABLE

Proposal Implementation Monitoring Section
PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
		written evidence which demonstrates that the proposal has substantially commenced on or before the expiration of five years from the date of this statement.		the proposal has substantially commenced.				of five years from the date of statement 753 (24 October 2007).	
753:M4.1	**Compliance Reporting**	The proponent shall submit to the CEO environmental compliance reports annually reporting on the previous twelve-month period, unless required by the CEO to report more frequently.	Submit to the CEO annual compliance reports, covering the conditions of this audit table.	CR	CEO		Overall	Annually unless required by the CEO to report more frequently	Compliant
753:M4.2	**Compliance Reporting – Prepare Audit Program**	The environmental compliance reports shall address each element of an audit program approved by the CEO and shall be prepared and submitted in a format acceptable to the CEO.	The annual compliance reports will cover the conditions of this audit table.	CR	CEO		Overall	Annually	Compliant
753:M4.3	**Compliance Reporting**	Submit to the CEO environmental compliance reports annually	The environmental compliance reports shall: 1. be endorsed by signature of the proponent's Managing Director or a person, approved in writing by the CEO, delegated to sign on behalf of the proponent's Managing Director; 2. state whether the proponent has complied with each condition and procedure contained in this statement; 3. provide verifiable evidence of compliance with each condition and procedure contained in this statement; 4. state whether the proponent has complied with each key action contained in any environmental management plan or program required by this statement; 5. provide verifiable evidence of conformance with each key action contained in any environmental management plan or program required by this statement; 6. identify all non-compliances and non-conformances and describe the corrective and preventative actions taken in relation to each non-compliance or non conformance; 7. provide an assessment of the effectiveness of all corrective and preventative actions taken; and 8. describe the state of implementation of the proposal.	CR	CEO		Overall	Annually unless required by the CEO to report more frequently	Compliant
753:M4.4		The proponent shall make the environmental compliance reports required by condition 4-1 publicly available in a manner approved by the CEO.	The compliance reports will be made publicly available in the manner described in OEPA (2012).	CR	CEO		Overall		Compliant
753:M5.1	**Performance Review**	The proponent shall submit a Performance Review report every five years after the start of ground-disturbing activities to the	Addresses: 1. the major environmental issues associated with implementing the project; the environmental objectives for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those objectives; 2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best	Performance Review report	EPA		Overall	Every five years after the start of ground-disturbing activities	Compliant, next 5 yearly review due 23 June 2025.

AUDIT TABLE

Proposal Implementation Monitoring Section
PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
		Environmental Protection Authority,	available technology where practicable; 3. significant improvements gained in environmental management, including the use of external peer reviews; 4. stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and 5. the proposed environmental objectives over the next five years, including improvements in technology and management processes.						
753:M5.2	**Performance Review**	The proponent shall make the Performance Review reports required by condition 5-1 publicly available in a manner approved by the CEO.	The Performance Review reports will be made publicly available in the manner described in OEPA (2012).	CR	CEO		Overall		Compliant
753:M6.1	***Darwinia masonii* Research and Recovery Plans**	Prior to the commencement of ground-disturbing activities for the mine site, the proponent shall prepare a *Darwinia masonii* Research Plan to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority and the and the Department of Environment and Conservation.	This Plan shall set out a timetable, objectives and methodologies for research and measures to: 1. monitor the numbers of individuals of the species, their health, and reproductive success; 2. investigate the requirements for maintaining or improving the viability of the population through genetic and ecological factors relating to the conservation, management, restoration, propagation and translocation of the species; 3. provide a scientifically robust analysis of the habitat requirements of the species; 4. offset the direct impacts of the proposal on the local population of the species by regeneration, re-establishment or translocation of additional plants or subpopulations on suitable un-impacted areas of banded ironstone formations in the Mt Gibson area; and 5. provide information which, combined with the results of monitoring activities required by condition 8, assists in ensuring that mining and other activities of the proposal, particularly the generation of dust, do not lead to a further decline in the local population of the species.	Conservation and Restoration Research Proposal *Darwinia masonii* and *Lepidosperma gibsonii*	Min for Env	EPA, DEC	Pre-Construction	Prior to the commencement of ground-disturbing activities for the mine site	Completed
753:M6.2	***Darwinia masonii* Research and Recovery Plans**	Prior to the commencement of ground-disturbing activities for the mine site, the proponent shall prepare an Interim Recovery Plan for *Darwinia masonii*, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority and the Department of Environment and Conservation.	This Plan shall include a timetable for and actions to: 1. locate and report any additional populations of the species; 2. enhance the survival of existing populations of the species; and 3. expand the existing populations or establish new populations; based on currently available information and the results of early research and experimentation undertaken in accordance with condition 6-1.	*Darwinia masonii* Interim Recovery Plan	Min for Env	EPA, DEC	Pre-Construction	Prior to the commencement of ground-disturbing activities for the mine site	Completed
753:M6.3	***Darwinia masonii* Research and Recovery Plans**	Within four years following the commencement of ground-disturbing activities for the mine site, the proponent shall prepare a Recovery Plan for *Darwinia masonii* to the requirements of the Minister for the	This Plan shall identify: 1. habitats which are critical to the survival of the species and the actions needed to protect those habitats; 2. threats to the species, and areas and populations under threat; 3. objectives to be achieved; 4. criteria against which achievement of the objectives is to be measured; 5. management actions, based on the outcomes of the implementation of the Research Plan referred to in Condition 6-1 and the Interim Recovery Plan referred to in Condition 6-2 that will remediate the impacts of the project and provide for a net improvement on the pre-mining conservation status of the species; and 6. further research required into the management or recovery of the species, and shall	*Darwinia masonii* Recovery Plan	Min for Env	EPA, DEC	Construction	Within four years following the commencement of ground-disturbing activities for the mine site	Compliant

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
		Environment on advice of the Environmental Protection Authority and the Department of Environment and Conservation.	be consistent with the requirements of the current version of the "Recovery Plan Guidelines for Nationally Listed Threatened Species and Ecological Communities under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*" (published on the Commonwealth Department of Environment and Heritage website).						
753:M6.4	***Darwinia masonii* Research and Recovery Plans**	The proponent shall implement the *Darwinia masonii* Research Plan required by condition 6-1.	BGPA has been commissioned to undertake the Research outlined in the Conservation and Restoration Research Proposal *Darwinia masonii* and *Lepidosperma gibsonii.*	CR, BGPA reports.	Min for Env		Overall		Compliant
753:M6.5	***Darwinia masonii* Research and Recovery Plans**	The proponent shall implement the Interim Recovery Plan for *Darwinia masonii* required by condition 6-2.	Implementation of the relevant recovery actions, as detailed in the *Darwinia masonii* Interim Recovery Plan.	CR	Min for Env		Overall		Compliant
753:M6.6	***Darwinia masonii* Research and Recovery Plans**	The proponent shall implement the Recovery Plan for Darwinia masonii required by condition 6-3.	Implementation of the relevant recovery actions, as detailed in the *Darwinia masonii* Recovery Plan.	CR	Min for Env		Overall		Not required at this stage
753:M6.7	***Darwinia masonii* Research and Recovery Plans**	The proponent shall review and revise the *Darwinia masonii* Research and Recovery Plans required by conditions 6-1, 6-2 and 6-3 as and when directed by the CEO.	The proponent will review and revise the Conservation and Restoration Research Proposal *Darwinia masonii* and *Lepidosperma gibsonii; Darwinia masonii* Interim Recovery Plan and *Darwinia masonii* Recovery Plan, as and when directed by the CEO.	Conservation and Restoration Research Proposal *Darwinia masonii* and *Lepidosperma gibsonii; Darwinia masonii* Interim Recovery Plan; *Darwinia masonii* Recovery Plan	CEO		Overall	When directed by the CEO.	Not required at this stage
753:M6.8	***Darwinia masonii* Research and Recovery Plans**	The proponent shall implement revisions of the *Darwinia masonii* Research and Recovery Plans required by condition 6-7.	The revised Conservation and Restoration Research Proposal *Darwinia masonii* and *Lepidosperma gibsonii; Darwinia masonii* Interim Recovery Plan and *Darwinia masonii* Recovery Plan, will be implemented if and when these revisions are finalised.	CR	CEO		Overall		Not required at this stage

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Proposal Implementation Monitoring Section
PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
753:M6.9	***Darwinia masonii* Research and Recovery Plans**	The proponent shall make the *Darwinia masonii* Research Plan required by condition 6-1 and revisions required by condition 6-7 publicly available in a manner approved by the CEO.	The Conservation and Restoration Research Proposal *Darwinia masonii* and *Lepidosperma gibsonii* is publicly available on MGI's website.	CR, Access to the plan from the MGI website	CEO		Overall		Compliant
753:M6.10	***Darwinia masonii* Research and Recovery Plans**	The proponent shall make the Interim Recovery Plan for *Darwinia masonii* required by condition 6-2 and revisions required by condition 6-7 publicly available in a manner approved by the CEO.	The *Darwinia masonii* Interim Recovery Plan is publicly available on MGI's website.	CR, Access to the plan from the MGI website	CEO		Overall		Compliant
753:M6.11	***Darwinia masonii* Research and Recovery Plans**	The proponent shall make the Recovery Plan for *Darwinia masonii* required by condition 6-3 and revisions required by condition 6-7 publicly available in a manner approved by the CEO.	The *Darwinia masonii* Recovery Plan will be made publicly available in the manner described in OEPA (2012).	CR, Access to the plan from the MGI website	CEO		Overall		Not required at this stage.
753:M7.1	***Lepidosperma* sp. Mt Gibson - Research and Recovery Plans**	Prior to the commencement of ground-disturbing activities for the mine site, the proponent shall prepare a *Lepidosperma* sp. Mt Gibson Research Plan to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority and the Department of Environment and Conservation.	This Plan shall set out a timetable, objectives and methodologies for research and measures to: 1. monitor the numbers of individuals of the species, their health, and reproductive success; 2. investigate the requirements for maintaining or improving viability of the population through genetic and ecological factors relating to the conservation, management, restoration, propagation and translocation of the species; 3. provide a scientifically robust analysis of the habitat requirements of the species; 4. offset the direct impacts of the proposal on the local population of the species by regeneration, re-establishment or translocation of additional plants or subpopulations on suitable un-impacted areas of banded ironstone formations in the Mt Gibson area; and 5. provide information which, combined with the results of monitoring activities required by condition 8, assists in ensuring that mining and other activities of the proposal, particularly the generation of dust, do not lead to a further decline in the local population of the species.	Conservation and Restoration Research Proposal *Darwinia masonii* and *Lepidosperma gibsonii* Plan	Min for Env	EPA, DEC	Pre-Construction	Prior to the commencement of ground-disturbing activities for the mine site	Completed
753:M7.2	***Lepidosperma* sp. Mt Gibson - Research and Recovery Plans**	Prior to the commencement of ground-disturbing activities for the mine site, the proponent shall prepare an Interim Recovery Plan for *Lepidosperma* sp. Mt Gibson, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority and the Department of Environment and	This Plan shall include a timetable for and actions to: 1. locate and report any additional populations of the species; 2. enhance the survival of existing populations of the species; and 3. expand the existing populations or establish new populations; based on currently available information and the results of early research and experimentation undertaken in accordance with condition 7-1.	*Lepidosperma gibsonii* Interim Recovery Plan	Min for Env	EPA, DEC	Pre-Construction	Prior to the commencement of ground-disturbing activities for the mine site	Completed

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PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
		Conservation.							
753:M7.3	***Lepidosperma* sp. Mt Gibson - Research and Recovery Plans**	Within four years following the commencement of ground-disturbing activities for the mine site, the proponent shall prepare a Recovery Plan for *Lepidosperma* sp. Mt Gibson to the requirements of the Minister for the Environment on advice of the Environment Protection Authority and the Department of Environment and Conservation.	This Plan shall identify: 1. habitats which are critical to the survival of the species and the actions needed to protect those habitats; 2. threats to the species, and areas and populations under threat; 3. objectives to be achieved; 4. criteria against which achievement of the objectives is to be measured; 5. management actions, based on the outcomes of the Research Plan referred to in Condition 7-1 and the Interim Recovery Plan referred to in Condition 7-2 that will to remediate the impacts of the project and provide for a net improvement on the pre-mining conservation status of the species; and 6. further research required into the management or recovery of the species, and shall be consistent with the requirements of the current version of the "Recovery Plan Guidelines for Nationally Listed Threatened Species and Ecological Communities under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*" (published on the Commonwealth Department of Environment and Heritage website).	*Lepidosperma gibsonii* Recovery Plan	Min for Env	EPA, DEC	Construction	Within four years following the commencement of ground-disturbing activities for the mine site	Compliant.
753:M7.4	***Lepidosperma* sp. Mt Gibson - Research and Recovery Plans**	The proponent shall implement a *Lepidosperma* sp. Mt Gibson Research Plan required by condition 7-1.	BGPA has been commissioned to undertake the Research outlined in the Conservation and Restoration Research Proposal *Darwinia masonii* and *Lepidosperma gibsonii.*	CR, BGPA reports.	Min for Env		Overall		Compliant
753:M7.5	***Lepidosperma* sp. Mt Gibson - Research and Recovery Plans**	The proponent shall implement the Interim Recovery Plan for *Lepidosperma* sp. Mt Gibson required by condition 7-2.	Implementation of the relevant recovery actions, as detailed in the *Lepidosperma gibsonii* Interim Recovery Plan.	CR	Min for Env		Overall		Compliant
753:M7.6	***Lepidosperma* sp. Mt Gibson - Research and Recovery Plans**	The proponent shall implement the Recovery Plan for *Lepidosperma* sp. Mt Gibson required by condition 7-3.	Implementation of the relevant recovery actions, as detailed in the *Lepidosperma gibsonii* Recovery Plan.	CR	Min for Env		Overall		Not required at this stage
753:M7.7	***Lepidosperma* sp. Mt Gibson - Research and Recovery Plans**	The proponent shall review and revise the *Lepidosperma* sp. Mt Gibson Research and Recovery Plans required by conditions 7-1, 7-2 and 7-3 as and when directed by the CEO.	The proponent will review and revise the Conservation and Restoration Research Proposal *Darwinia masonii* and *Lepidosperma gibsonii; Lepidosperma gibsonii* Interim Recovery Plan and *Lepidosperma gibsonii* Recovery Plan as and when directed by the CEO.	Conservation and Restoration Research Proposal *Darwinia masonii* and *Lepidosperma gibsonii; Lepidosperma gibsonii* Interim Recovery Plan; *Lepidosperma gibsonii* Recovery Plan	CEO		Overall	When directed by the CEO	Not required at this stage

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Proposal Implementation Monitoring Section
PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
753:M7.8	***Lepidosperma* sp. Mt Gibson - Research and Recovery Plans**	The proponent shall implement revisions of the *Lepidosperma* sp. Mt Gibson Research and Recovery Plans required by condition 7-7.	The revised Conservation and Restoration Research Proposal *Darwinia masonii* and *Lepidosperma gibsonii; Lepidosperma gibsonii* Interim Recovery Plan and *Lepidosperma gibsonii* Recovery Plan, will be implemented if and when these revisions are finalised.	CR	CEO		Overall		Not required at this stage
753:M7.9	***Lepidosperma* sp. Mt Gibson - Research and Recovery Plans**	The proponent shall make the *Lepidosperma* sp. Mt Gibson Research Plan required by condition 7-1 and revisions required by condition 7-7 publicly available in a manner approved by the CEO.	The Conservation and Restoration Research Proposal *Darwinia masonii* and *Lepidosperma gibsonii* is publicly available on MGI's website.	CR, Access to the plan from the MGI website	CEO		Overall		Compliant
753:M7.10	***Lepidosperma* sp. Mt Gibson - Research and Recovery Plans**	The proponent shall make the Interim Recovery Plan for *Lepidosperma* sp. Mt Gibson required by condition 7-2 and revisions required by condition 7-7 publicly available in a manner approved by the CEO.	The *Lepidosperma gibsonii* Interim Recovery Plan is publicly available on MGI's website.	CR, Access to the plan from the MGI website	CEO		Overall		Compliant
753:M7.11	***Lepidosperma* sp. Mt Gibson - Research and Recovery Plans**	The proponent shall make the Recovery Plan for *Lepidosperma* sp. Mt Gibson required by condition 7-3 and revisions required by condition 7-7 publicly available in a manner approved by the CEO.	The *Lepidosperma gibsonii* Recovery Plan will be made publicly available in the manner described in OEPA (2012).	CR, Access to the plan from the MGI website	CEO		Overall		Not required at this stage.
753:M8.1	**Conservation of Significant Flora and Communities**	Prior to the commencement of ground-disturbing activities, the proponent shall prepare a Significant Flora Species and Communities Management Plan to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority and the Department of Environment and Conservation. Note: "Significant flora species" include: Declared Rare Flora; Priority Listed Flora; geographically restricted flora; and newly	The following species shall be addressed in the Plan: • *Darwinia masonii*; • *Lepidosperma* sp. Mt Gibson; • *Acacia cerastes*; • *Grevillea aff. yorkrakinensis*; • *Cryptandra imbricata*; • *Podotheca uniseta*; and • *Psammomoya implexa*. Note: "Significant communities" include: Threatened Ecological Communities; Priority Ecological Communities; and geographically restricted ecological communities. This Plan shall: 1. provide the results of targeted flora and vegetation surveys where surveys have not been completed or where the result of previous surveys are no longer current, to provide further information on the conservation and baseline conservation status of each of the significant flora species and communities within the project area; 2. describe details of monitoring and management activities to ensure that the proposal does not lead, directly or indirectly, to the taking of significant flora beyond the approved area of direct disturbance, including:	Extension Hill & Extension Hill North Environmental Management Plan (Rev 2)	Min for Env	EPA, DEC	Pre-Construction	Prior to the commencement of ground-disturbing activities	Completed

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
		discovered and undescribed flora.	• monitoring of the numbers and population distribution of *Darwinia masonii* and *Lepidosperma* sp. Mt Gibson, their health and reproductive success; and • a detailed risk management plan setting out monitoring and management procedures, parameters, and schedules, and defining response triggers and acceptable performance criteria for the avoidance and management of potential indirect impacts of mining activities, including, the impacts of dust deposition, fire, weeds, altered hydrology and unauthorised disturbance, on the populations of *Darwinia masonii* and *Lepidosperma* sp. Mt Gibson outside the mining footprint; Note: See also Weed Management Plan (condition 9) and Bush Fire Management Plan (condition 10). 3. describe measures to ensure that direct and indirect impacts on significant flora species and communities within the mine site and along the services corridor are minimised; 4. describe measures to manage impacts of the mining operation on vegetation downstream of the mine site; 5. set out monitoring parameters, methods and criteria for establishing impact on significant flora species and communities within the mine site and along the services corridor; 6. outline the regeneration or revegetation strategies which may be required for significant flora species and components of communities, including completion criteria to be met; 7. outline management or mitigation actions required to address any failure to achieve regeneration completion criteria arising from item 6 above; and 8. outline further investigations into the regeneration and reproductive ecology of affected significant flora species and components of communities, in order to determine appropriate regeneration methodologies, if the completion criteria are not being achieved.						
753:M8.2	**Conservation of Significant Flora and Communities**	The proponent shall implement the Significant Flora Species and Communities Management Plan required by condition 8-1.	Implementation of the Extension Hill & Extension Hill North Environmental Management Plan and underlying procedures and protocols.	CR	Min for Env		Overall		Compliant
753:M8.3	**Conservation of Significant Flora and Communities**	The proponent shall review and revise the Significant Flora Species and Communities Management Plan required by condition 8-1 as and when directed by the CEO.	The proponent will review and revise the Extension Hill & Extension Hill North Environmental Management Plan, as and when directed by the CEO.	Extension Hill & Extension Hill North Environmental Management Plan	CEO		Overall	When directed by the CEO	Not required at this stage
753:M8.4	**Conservation of Significant Flora and Communities**	The proponent shall implement revisions of the Significant Flora Species and Communities Management Plan required by condition 8-3.	Revisions of the Extension Hill & Extension Hill North Environmental Management Plan will be implemented if and when they are finalised.	CR	CEO		Overall		Not required at this stage
753:M8.5	**Conservation of Significant Flora and Communities**	The proponent shall make the Significant Flora Species and Communities Management Plan required by condition 8-1 and revisions required by condition 8-3 publicly available in a manner approved by the CEO.	The Extension Hill & Extension Hill North Environmental Management Plan is publicly available on MGI's website.	CR, Access to the plan from the MGI website	CEO		Overall		Compliant

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Proposal Implementation Monitoring Section
PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
753:M9.1	**Weeds**	Prior to the commencement of ground-disturbing activities, the proponent shall prepare, in consultation with the Department of Environment and Conservation and the Department of Agriculture and Food, a Weed Management Plan.	This Plan shall: 1. identify the location and approximate number of each weed species recorded within the mine site and along the services corridor, during previous vegetation surveys, while having regard for weed species outside the project area; 2. identify weeds of environmental significance in the project area as target weeds in collaboration with the Department of Environment and Conservation; 3. map the presence of target weeds; 4. implement appropriate hygiene practices for all plant and vehicle equipment operated by the proponent; 5. control and eradicate target weeds during construction and operation of the mine site and construction of the services corridor; 6. identify performance indicators for weed management; and 7. monitor the success of weed control.	Extension Hill & Extension Hill North Environmental Management Plan (Rev 2)	Min for Env	DoAF, DEC	Pre-Construction	Prior to the commencement of ground-disturbing activities	Completed
753:M9.2	**Weeds**	The proponent shall implement the Weed Management Plan required by condition 9-1.	Implementation of the Extension Hill & Extension Hill North Environmental Management Plan and underlying procedures and protocols.	CR	Min for Env		Overall		Compliant
753:M9.3	**Weeds**	The proponent shall review and revise the Weed Management Plan required by condition 9-1 as and when directed by the CEO.	The proponent will review and revise the Extension Hill & Extension Hill North Environmental Management Plan, as and when directed by the CEO.	Extension Hill & Extension Hill North Environmental Management Plan	CEO		Overall	When directed by the CEO	Not required at this stage
753:M9.4	**Weeds**	The proponent shall implement revisions of the Weed Management Plan required by condition 9-3.	Revisions of the Extension Hill & Extension Hill North Environmental Management Plan will be implemented if and when they are finalised.	CR	CEO		Overall		Not required at this stage
753:M9.5	**Weeds**	The proponent shall make the Weed Management Plan required by condition 9-1 and revisions required by condition 9-3 publicly available in a manner approved by the CEO.	The Extension Hill & Extension Hill North Environmental Management Plan is publicly available on MGI's website.	CR, Access to the plan from the MGI website	CEO		Overall		Compliant
753:M10.1	**Bush Fires**	Prior to the commencement of ground-disturbing activities, the proponent shall prepare, in consultation with the Department of Environment and Conservation and the relevant Local Governments, a Bush Fire Management Plan.	This Plan shall set out the provision of resources and measures to: 1. prevent bushfires in the vicinity of the mine site; 2. detect bushfires in the vicinity of the mine site; 3. train personnel to fight fires in the vicinity of the mine site; and 4. respond to bush fire emergencies.	Extension Hill & Extension Hill North Environmental Management Plan (Rev 2)	DEC	LGA	Pre-Construction	Prior to the commencement of ground-disturbing activities	Completed
753:M10.2	**Bush Fires**	The proponent shall implement the Bush Fire Management Plan required by condition 10-1.	Implementation of the Extension Hill & Extension Hill North Environmental Management Plan and underlying procedures and protocols.	CR	CEO		Overall		Compliant
753:M10.3	**Bush Fires**	The proponent shall review and revise the Bush Fire Management Plan required by condition	The proponent will review and revise the Extension Hill & Extension Hill North Environmental Management Plan, as and when directed by the CEO.	Extension Hill & Extension Hill North Environmental	CEO		Overall	When directed by the CEO.	Not required at this stage

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PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
		10-1 as and when directed by the CEO.		Management Plan					
753:M10.4	**Bush Fires**	The proponent shall implement revisions of the Bush Fire Management Plan required by condition 10-3.	Revisions of the Extension Hill & Extension Hill North Environmental Management Plan will be implemented if and when they are finalised.	CR	CEO		Overall		Not required at this stage
753:M10.5	**Bush Fires**	The proponent shall make the Bush Fire Management Plan required by condition 10-1 and revisions required by condition 10-3 publicly available in a manner approved by the CEO.	The Extension Hill & Extension Hill North Environmental Management Plan is publicly available on MGI's website.	CR, Access to the plan from the MGI website	CEO		Overall		Compliant
753:M11.1	**Malleefowl *Leipoa ocellata***	Prior to the commencement of ground-disturbing activities, the proponent shall prepare, in consultation with the Department of Environment and Conservation, a Malleefowl Conservation Plan.	This Plan shall: 1. identify the distribution and abundance of *Leipoa ocellata* (Malleefowl) within and around the project area, including the services corridor; 2. Identify the threats to the Malleefowl populations in the areas identified in item 1 above; 3. Identify management objectives and actions to minimise impacts on Malleefowl from the threats identified in item 2 above, including feral animal control and investigations into avoiding mounds being used by Mallee fowl; 4.identify a monitoring program to assess the Mallee fowl population and any impacts as a result of the proposal; and 5. Identify measures for community involvement in Mallee fowl conservation.	Extension Hill & Extension Hill North Environmental Management Plan (Rev 2)	CEO		Pre-Construction	Prior to the commencement of ground-disturbing activities	Completed
753:M11.2	**Malleefowl *Leipoa ocellata***	The proponent shall implement the Mallee fowl Conservation Plan required by condition 11-1.	Implementation of the Extension Hill & Extension Hill North Environmental Management Plan and underlying procedures and protocols.	CR	CEO		Overall		Compliant
753:M11.3	**Malleefowl *Leipoa ocellata***	The proponent shall review and revise the Mallee fowl Conservation Plan required by condition 11-1 as and when directed by the CEO.	The proponent will review and revise the Extension Hill & Extension Hill North Environmental Management Plan, as and when directed by the CEO.	Extension Hill & Extension Hill North Environmental Management Plan	CEO		Overall	When directed by the CEO.	Not required at this stage
753:M11.4	**Malleefowl *Leipoa ocellata***	The proponent shall implement revisions of the Mallee fowl Conservation Plan required by condition 11-3.	Revisions of the Extension Hill & Extension Hill North Environmental Management Plan will be implemented if and when they are finalised.	CR	CEO		Overall		Not required at this stage
753:M11.5	**Malleefowl *Leipoa ocellata***	The proponent shall make the Mallee fowl Conservation Plan required by condition 11-1 and revisions required by	The Extension Hill & Extension Hill North Environmental Management Plan is publicly available on MGI's website.	CR, Access to the plan from the MGI website	CEO		Overall		Compliant

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Proposal Implementation Monitoring Section
PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
		condition 11-3 publicly available in a manner approved by the CEO.							
753:M12.1	**Fauna Management at the Mine Site**	Prior to the commencement of ground-disturbing activities for the mine site, the proponent shall prepare in consultation with the Department of Environment and Conservation, a Mine Site Fauna Management Plan.	This Plan shall address management and monitoring to: 1. demonstrate that the effects of vegetation clearing, noise and vibration, light overspill and vehicle movement on fauna are minimised; and 2. in particular, management and monitoring of *Egernia stokesii badia* (Western spiny-tailed skink); *Falco peregrinus* (Peregrine Falcon); *Cacatua leadbeateri* (Major Mitchell's Cockatoo); and *Merops ornatus* (Rainbow Bee-eater). Note: The management of Mallee fowl is considered in a separate Mallee fowl Conservation Plan (condition 11).	Extension Hill & Extension Hill North Environmental Management Plan (Rev 2)	CEO		Pre-Construction	Prior to the commencement of ground-disturbing activities for the mine site	Completed
753:M12.2	**Fauna Management at the Mine Site**	The proponent shall implement the Mine Site Fauna Management Plan required by condition 12-1.	Implementation of the Extension Hill & Extension Hill North Environmental Management Plan and underlying procedures and protocols.	CR	CEO		Overall		Compliant
753:M12.3	**Fauna Management at the Mine Site**	The proponent shall review and revise the Mine Site Fauna Management Plan required by condition 12-1 as and when directed by the CEO.	The proponent will review and revise the Extension Hill & Extension Hill North Environmental Management Plan, as and when directed by the CEO.	Extension Hill & Extension Hill North Environmental Management Plan	CEO		Overall	When directed by the CEO.	Not required at this stage
753:M12.4	**Fauna Management at the Mine Site**	The proponent shall implement revisions of the Mine Site Fauna Management Plan required by condition 12-3.	Revisions of the Extension Hill & Extension Hill North Environmental Management Plan will be implemented if and when they are finalised.	CR	CEO		Overall		Not required at this stage
753:M12.5	**Fauna Management at the Mine Site**	The proponent shall make the Mine Site Fauna Management Plan required by condition 12-1 and revision required by condition 12-3 publicly available in a manner approved by the CEO.	The Extension Hill & Extension Hill North Environmental Management Plan is publicly available on MGI's website.	CR, Access to the plan from the MGI website	CEO		Overall		Compliant
753:M13.1	**Fauna Management along the Services Corridor**	Prior to ground-disturbing activities of the Services Corridor, the proponent shall clearly delineate on the ground the boundaries of the services corridor, being up to 20 metres wide from Geraldton Port to Monger's Lake (agricultural section) and up to 15 metres wide from Monger's Lake to the mine		Ministerial Statement 889					No longer relevant

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PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
		site (pastoral section).							
753:M13.2	**Fauna Management along the Services Corridor**	The proponent shall not cause or allow disturbance of vegetation outside the delineated services corridor referred to in condition 13-1, unless authorised by the Minister for the Environment.		Ministerial Statement 889					No longer relevant
753:M13.3	**Fauna Management along the Services Corridor**	The proponent shall undertake open trench works in the pastoral section of the services corridor from April to September (inclusive) unless otherwise authorised by the CEO.		Ministerial Statement 889					No longer relevant
753:M13.4	**Fauna Management along the Services Corridor**	Prior to vegetation clearing, the proponent shall mark significant habitat trees of sufficient age to form nesting hollows for hollow-nesting birds and mammals, and Mallee fowl mounds, in consultation with the Department of Environment and Conservation.		Ministerial Statement 889					No longer relevant
753:M13.5	**Fauna Management along the Services Corridor**	The proponent shall not fell marked trees or disturb mounds referred to in condition 13-4, except in the case where habitat trees or mounds occur in the direct line of the proposed pipeline and cannot reasonably be avoided.		Ministerial Statement 889					No longer relevant
753:M13.6	**Fauna Management along the Services Corridor**	The proponent shall limit the length of open trench to a maximum length of 10 kilometres at any time in the pastoral section and 20 kilometres at any time in the agricultural section of the services corridor.		Ministerial Statement 889					No longer relevant
753:M13.7	**Fauna Management along the Services**	No part of the trench shall remain open for more than seven days, unless authorised by the CEO.		Ministerial Statement 889					No longer relevant

AUDIT TABLE

Proposal Implementation Monitoring Section
PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
	Corridor								
70 753:M13.8	**Fauna Management along the Services Corridor**	The proponent shall install ramps at intervals of 500 metres along the entire route of the open trench to allow trapped animals to escape, except in remnant vegetation patches in the agricultural section, where each remnant vegetation patch shall have at least one ramp.		Ministerial Statement 889					No longer relevant
753:M13.9	**Fauna Management along the Services Corridor**	The proponent shall employ at least two “fauna clearing persons” per ten kilometres of open trench to remove fauna from the trench. The “fauna clearing persons” shall be able to demonstrate suitable experience to obtain a fauna handling licence issued by the Department of Environment and Conservation.		Ministerial Statement 889					No longer relevant
753:M13.10	**Fauna Management along the Services Corridor**	The open trenches shall be inspected by the “fauna clearing persons” for trapped fauna each day by no later than three hours after sunrise and half an hour prior to backfilling of the trench.		Ministerial Statement 889					No longer relevant
753:M13.11	**Fauna Management along the Services Corridor**	In the event of significant rainfall, the proponent shall, following the clearing of fauna from the trench, pump out any pooled water in the open trench (with the exception of groundwater) and discharge it via a mesh (to dissipate energy) to adjacent areas.		Ministerial Statement 889					No longer relevant
753:M13.12	**Fauna Management along the Services Corridor**	The proponent shall produce monthly performance monitoring reports on fauna management.	These reports shall include a Fauna Register on the fauna found in the trenches, and fatalities. These reports are to be provided to the Department of Environment and Conservation each month, and made publicly available.	Ministerial Statement 889					No longer relevant
753:M14.1	**Closure**	Prior to ground-disturbing	Provides: 1. the rationale for the siting and design of plant and infrastructure as	Extension Hill	DEC	DMP	Pre-	Prior to	Completed

AUDIT TABLE

Proposal Implementation Monitoring Section
PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
		activities, the proponent shall prepare a Preliminary Closure Plan in consultation with the Department of Environment and Conservation, the Department of Industry and Resources, the Department of Water, the Australian Bush Heritage Fund, the Australian Wildlife Conservancy, the Pindiddy Aboriginal Corporation and the relevant Local Governments, which describes the framework to ensure that the mine area and the services corridor are left in an environmentally acceptable condition	relevant to environmental protection; 2. a conceptual description and design of the final landform at closure; 3. for the long-term management of groundwater and surface water systems affected by the mining operations and services corridor; 4. for the management of noxious materials to avoid the creation of contaminated areas (including acid-generating materials); 5. a rehabilitation program, which aims to restore the original vegetation communities to areas disturbed by the mining operations and construction within the services corridor, and includes completion criteria to be met; and 6. for the monitoring and response to the progress towards the re-establishment of the floristic communities as part of the rehabilitation of the area, including studies on the composition of the floristic communities on Extension Hill North.	& Extension Hill North Environmental Management Plan (Rev 2)		(DoIR), DoW, ABHF, AWC, PAC and LGA's	Construction	ground-disturbing activities.	
753:M14.2	**Closure**	The proponent shall make the Preliminary Closure Plan required by condition 14-1 publicly available in a manner approved by the CEO.	The Extension Hill & Extension Hill North Environmental Management Plan is publicly available on MGI's website.	CR, Access to the plan from the MGI website	CEO		Pre-Construction		Compliant
753:M14.3	**Closure**	At least two years prior to the anticipated date of closure, or at a time agreed with the Environmental Protection Authority, the proponent shall prepare a Final Closure Plan, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.	The Final Closure Plan shall set out details and measures for: 1. removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders; 2. final landforms and the extent of the mine void; 3.long-term management of groundwater and surface water systems affected by the waste rock dumps, the mine void and the services corridor; 4. identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities; and 5. rehabilitation of all disturbed areas, including the mine area and the services corridor, to ensure establishment of sustainable vegetation communities with local species and local provenance, consistent with the reconstructed landscape and surrounding vegetation and in accordance with the completion criteria.	Final Closure Plan	Min for Env	EPA	Operation	At least two years prior to the anticipated date of closure, or at a time agreed with the Environmental Protection Authority	Latest version Currently being reviewed by DMIRS and DWER
753:M14.4	**Closure**	The proponent shall implement the Final Closure Plan required by condition 14-3 until such time as the Minister for the Environment determines, on advice of the CEO, that the proponent's closure responsibilities have been	The proponent will implement the Final Closure Plan until notified by the Min for Env, or their delegate, that the proponent's closure responsibilities have been fulfilled.	CR	Min for Env	CEO	Decommissioning	Until such time as the Minister for the Environment determines, on advice of the CEO, that the	Compliant; MCP has been implemented wherever possible during current period of

AUDIT TABLE

Proposal Implementation Monitoring Section
PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
		fulfilled.						proponent's closure responsibilities have been fulfilled.	care and maintenance
753:M14.5	**Closure**	The proponent shall make the Final Closure Plan required by condition 14-3 publicly available, in a manner approved by the CEO.	The Final Closure Plan will be made publicly available on MGI's website.	CR, Access to the plan from the MGI website	CEO		Operation		Latest version being reviewed by DMIRS and DWER
753:M15.1	**Performance Bond**	As security for the due and punctual observance and performance by the proponent of the requirement to rehabilitate that part of the services corridor that lies outside mining tenure, as required by conditions 14-1(5) and 14-3(5), the proponent shall lodge with the CEO on demand prior to commencement of operations of the mine, an irrevocable Unconditional Performance Bond as nominated and approved by the CEO in his sole unfettered discretion to a cash value and in a form acceptable to the CEO ("the Security") which Security at the date hereof being $5,000 per hectare of disturbance from Geraldton Port to Mongers Lake (agricultural section) and $7,000 per hectare of disturbance from Mongers Lake to the mining tenure at the Mt Gibson mine site (pastoral section). The proponent shall lodge with the CEO an Unconditional Performance Bond executed by a Bank or other approved financial institution for due compliance with the environmental conditions in the sum of $576,000.		Ministerial Statement 889	CEO				No longer relevant

AUDIT TABLE

Proposal Implementation Monitoring Section
PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
753:M15.2	**Performance Bond**	The CEO may review the Security required by condition 15-1 at any time or times and if, on such review, the CEO considers that a security has ceased to be acceptable to the CEO, then the CEO may, with the approval of the Minister for the Environment, require the proponent to furnish replacement or additional security for performance by the proponent of its obligations to rehabilitate that part of the services corridor that lies outside mining tenure, as required by conditions 14-1(5) and 14-3(5).		Ministerial Statement 889	CEO				No longer relevant
753:M15.3	**Performance Bond**	The proponent shall within fourteen days after written request by the CEO furnish replacement or additional security in such sum as the CEO shall nominate, in a form and upon terms and conditions approved by the CEO, which approval shall not be unreasonably withheld. On receipt of approved replacement security the CEO shall release and discharge the original security. Note: 1. In the preparation of advice to the CEO in relation to conditions 15-1, 15-2 and 15-3, the Environmental Protection Authority expects that the advice of the Department of Environment and Conservation and the Department of Industry and Resources will be obtained. 2. The rehabilitation of the services corridor referred		Ministerial Statement 889	CEO				No longer relevant

AUDIT TABLE

Proposal Implementation Monitoring Section
PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
		to in conditions 15-1 and 15-2 is required by conditions 14-1(5) and 14-3(5).							
753:M16.1	**Offsets**	The proponent shall implement the offset package set out in Schedule 2 to the requirements of the Minister for the Environment on advice of the Department of Environment and Conservation.		CR	Min for Env	DEC	Overall		Compliant
889:M13.1	**Fauna Management along the Services Corridor**	Prior to ground-disturbing activities of the Services Corridor, the proponent shall clearly delineate on the ground the boundaries of the services corridor, being up to 20 metres wide from Geraldton Port to Monger's Lake (agricultural section) and up to 15 metres wide from Monger's Lake to the mine site (pastoral section).		CR, Extension Hill & Extension Hill North Environmental Management Plan (Rev 2)	CEO		Pre-Construction	Prior to ground-disturbing activities of the Services Corridor.	Not required at this stage
889:M13.2	**Fauna Management along the Services Corridor**	The proponent shall not cause or allow disturbance of vegetation outside the delineated services corridor referred to in condition 13-1, unless authorised by the CEO.		CR	CEO		Construction		Not required at this stage
889:M13.3	**Fauna Management along the Services Corridor**	Prior to vegetation clearing, the proponent shall mark significant habitat trees of sufficient age to form nesting hollows for hollow-nesting birds and mammals, and Malleefowl mounds, in consultation with the Department of Environment and Conservation.		CR, Extension Hill & Extension Hill North Environmental Management Plan (Rev 2)	DEC		Pre-Construction	Prior to vegetation clearing	Not required at this stage
889:M13.4	**Fauna Management along the Services Corridor**	The proponent shall not fell marked trees or disturb mounds referred to in condition 13-3 except in the case where habitat trees or mounds occur in the direct line of the		CR, Extension Hill & Extension Hill North Environmental Management Plan (Rev 2)	CEO		Construction		Not required at this stage

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
		proposed pipeline and cannot reasonably be avoided.							
889:M13.5	**Fauna Management along the Services Corridor**	Open trench lengths shall not exceed a length capable of being inspected and cleared by fauna clearing persons employed on the pipeline construction project within the times required by Condition 13-8. The “fauna clearing persons” shall be able to demonstrate suitable experience to obtain a fauna handling licence issued by the Department of Environment and Conservation. Note: “Fauna clearing persons” means employees whose responsibility is to daily walk the open trench to recover and record fauna found within the trench.		CR	CEO		Construction		Not required at this stage
889:M13.6	**Fauna Management along the Services Corridor**	The proponent shall install ramps at intervals of not more than 500 metres along the entire route of the open trench to allow trapped animals to escape, except in remnant vegetation patches in the agricultural section, where each remnant vegetation patch shall have at least one ramp.		CR	CEO		Construction		Not required at this stage
889:M13.7	**Fauna Management along the Services Corridor**	The proponent shall employ sufficient “fauna clearing persons” to ensure compliance with Condition 13-8. The “fauna clearing persons” shall be able to demonstrate suitable experience to obtain a fauna handling licence issued by the Department of Environment and Conservation.		CR	CEO		Construction		Not required at this stage
889:M13.8	**Fauna Management along the**	The open trenches shall be inspected by the “fauna clearing persons” for		CR, Extension Hill & Extension Hill	CEO		Construction		Not required at this stage

AUDIT TABLE

Proposal Implementation Monitoring Section
PROJECT: MT GIBSON IRON ORE MINE & INFRASTRUCTURE PROJECT SHIRE OF YALGOO
PROPONENTS:MOUNT GIBSON MINING LIMITED and EXTENSION HILL PTY LTD

Number	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status
	Services Corridor	trapped fauna each day by no later than three hours after sunrise and half an hour prior to backfilling of the trench.		North Environmental Management Plan (Rev 2)					
889:M13.9	**Fauna Management along the Services Corridor**	In the event of significant rainfall, the proponent shall, following the clearing of fauna from the trench, pump out any pooled water in the open trench (with the exception of groundwater) and discharge it via a mesh (to dissipate energy) to adjacent areas.		CR, Extension Hill & Extension Hill North Environmental Management Plan (Rev 2)	CEO		Construction		Not required at this stage
889:M13.10	**Fauna Management along the Services Corridor**	The proponent shall produce monthly performance monitoring reports on fauna management.	These reports shall include a Fauna Register on the fauna found in the trench, and fatalities. These reports are to be provided to the Department of Environment and Conservation each month, and made publicly available.	CR, Extension Hill & Extension Hill North Environmental Management Plan (Rev 2)	CEO		Construction		Not required at this stage

Notes
1. Where a condition states "on advice of the Environmental Protection Authority", the Environmental Protection Authority will provide that advice to the Department of Biodiversity Conservation and Attractions for the preparation of written notice to the proponent.
2. The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Biodiversity Conservation and Attractions.
3. The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Biodiversity Conservation and Attractions over the fulfilment of the requirements of the conditions.
4. The proponent is required to apply for a Works Approval and Licence for this project under the provisions of Part V of the *Environmental Protection Act 1986*.

APPENDIX B

Prescribed Premises Licence L8495/2010/2 Annual Audit Compliance Report

Government of **Western Australia**
Department of **Water and Environmental Regulation**

Annual Audit Compliance Report Form

Environmental Protection Act 1986, Part V Division 3

Once completed, please submit this form either via email to info@dwer.wa.gov.au, or to the below postal address:

Department of Water and Environmental Regulation
Locked Bag 10
Joondalup DC WA 6919

Section A – Licence details			
Licence number:	L8495/2010/2	Licence file number:	2010/009798
Licence holder name:	Mount Gibson Mining Limited		
Trading as:			
ACN:	32 074 575 885		
Registered business address:	Level 1, 2 Kings Park Road, West Perth, WA, 6005		
Reporting period:	01 / 10 / 2022 **to** 30 / 09 / 2023		

Section B – Statement of compliance with licence conditions
Did you comply with all of your licence conditions during the reporting period? (please tick the appropriate box)
☒ Yes – please complete: • section C; • section D (if required); and • sign the declaration in Section F.
☐ No – please complete: • section C; • section D (if required); • section E; and • sign the declaration in Section F.

Section C – Statement of actual production	
Provide the actual production quantity for this reporting period. Supporting documentation is to be attached.	
Prescribed premises category	**Actual production quantity**
5	0 t
85	0 cubic meters per day

Section D – Statement of actual Part 2 waste discharge quantity	
Provide the actual Part 2 waste discharge quantity for this reporting period. Supporting documentation is to be attached.	
Prescribed premises category	**Actual Part 2 waste discharge quantity**
64	0 t

Section E – Details of non-compliance with licence condition			
Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.			
Condition no:		Date(s) of non-compliance:	
Details of non-compliance:			
What was the actual (or suspected) environmental impact of the non-compliance? **NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.			
Cause (or suspected cause) of non-compliance:			
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:			
Was this non-compliance previously reported to DWER?			
☐ Yes, and			
☐ Reported to DWER verbally		Date: / /	

Section E – Details of non-compliance with licence condition	
☐ Reported to DWER in writing	Date: / /

Section F – Declaration

I / We declare that the information in this Annual Audit Compliance Report is true and correct and is not false or misleading in a material particular[1].

I / We consent to the Annual Audit Compliance Report being published on the Department of Water and Environmental Regulation's (DWER) website.

Signature[2]:		Signature:	
Name: (printed)	Peter Kerr	Name: (printed)	
Position:	CEO	Position:	
Date:	31. 10. 2023	Date:	
Seal (if signing under seal):			

[1] It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular.

[2] AACRs can only be signed by the licence holder or an authorised person with the legal authority to sign on behalf of the licence holder.

APPENDIX C

EPBC Ref 2005/2381 Audit Table

COMPLIANCE CERTIFICATE

Department of the Environment
EPBC Ref: 2005/2381 (18th Dec 2007)
PROJECT: Mt Gibson Iron Ore Project
Reporting Period: 1st July 2022 – 30th June 2023

Mount Gibson Mining

Extension Hill Pty Ltd

Condition Number	Condition	Status	Evidence
1	The person taking the Action must prepare a management plan (or plans) including a monitoring program for *Darwinia masonii*. The plan(s) must take into account the advice of the Department of the Environment, Water Heritage and the Arts (DEWHA), the Western Australian Department of Environment and Conservation and the Environmental Protection Authority. a) The aim of the plan(s) is to manage the impacts of the Action on *Darwinia masonii* and its habitat. b) The plan shall be implemented and reviewed throughout the life of the Action. c) The plan shall: i) Establish baseline information on the populations of *Darwinia masonii* within the Mt Gibson Ranges; ii) Establish a monitoring program to identify significant impacts and monitor the numbers of individuals and areas of suitable habitat for *Darwinia masonii*; iii) Define the scope of studies aimed at understanding the ecology of *Darwinia masonii*; iv) Specify design features, management measures and operating controls to minimise adverse impacts to *Darwinia masonii* within the Mt Gibson Ranges; and v) Identify potential response and mitigation measures in the event that monitoring detects Action-attributable change in the abundance, distribution or reproductive success that is likely to cause significant impact to the viability of *Darwinia masonii* within the Mt Gibson Ranges. d) The management plan(s) for *Darwinia masonii* (including the monitoring program) must be approved by the Minister prior to the commencement of ground disturbing activities. e) The approved plan(s) must be implemented.	Compliant	*Extension Hill & Extension Hill North Darwinia masonii Management and Monitoring Plan Version 2.* (Dated 2022) **Letter – Approval** of Darwinia masonii Management and Monitoring Plan Version 2. (8/06/2022) K.Farrant (Department of Agriculture, Water and the Environment) Mount Gibson Mining Limited and Extension Hill Pty Ltd (2022) *Annual Environmental Report Mt Gibson Iron Ore Mine and Infrastructure Project October 2021 – September 2022.* **Submitted to DAWE on 29 October 2022**
2	The person taking the Action must prepare a management plan (or plans) including a monitoring program for the Malleefowl (*Leipoa ocellata*). The plan must take into account the advice of DEWHA, the Western Australian Department of Environment and Conservation and the Environmental Protection Authority. a) The aim of the plan(s) is to manage the impacts of the Action on the Malleefowl and its habitat. b) The plan shall be implemented and reviewed throughout the life of the Action. c) The plan shall: i) Establish baseline information on the populations of the Malleefowl in and around the project area, including the services corridor; ii) Establish a monitoring program to detect significant impacts and monitor the numbers of individuals and suitable habitat for the Malleefowl in and around the project area, including the services corridor; iii) Specify design features, management measures and operating controls to minimise adverse impacts; and iv) Identify potential response and mitigation measures in the event that monitoring detects Action-attributable change in the abundance, distribution or reproductive success that is likely to cause significant impact to the viability of the Malleefowl in and around the project area, including the services corridor. d) The management plan(s) for the Malleefowl (including the monitoring program) must be approved by the Minister prior to the commencement of ground disturbing activities. e) The approved plan(s) must be implemented.	Compliant	*Extension Hill & Extension Hill North Malleefowl Management Plan Version 2.* (Dated 2022) **Letter – Approval** of Malleefowl Management Plan Version 2 (8/06/2022). K. Farrant (Department of Agriculture, Water and the Environment.) Mount Gibson Mining Limited and Extension Hill Pty Ltd (2022) *Annual Environmental Report Mt Gibson Iron Ore Mine and Infrastructure Project October 2021 – September 2022.* **Submitted to DAWE on 29 October 2022.**

Condition Number	Condition	Status	Evidence
3	An Environmental Performance Report shall be submitted to DEWHA within 15 months from the date of approval of the Action and each subsequent report on or before the 31st October each year. This report shall contain the results of, and the state of implementation of the *Darwinia masonii* and *Leipoa ocellate* (malleefowl) management plan(s) and monitoring programs (Conditions 1 and 2) and advice as to whether there have been revisions to previously approved plans.	Compliant	Mount Gibson Mining Limited and Extension Hill Pty Ltd (2021) *Annual Environmental Report Mt Gibson Iron Ore Mine and Infrastructure Project October 2021 – September 2022* – **submitted to DAWE on 29 October 2022**
4	If the person taking the Action wishes to carry out any activity otherwise than in accordance with a plan, program or system referred to in this Approval, the person taking the Action must submit for the Minister's approval a revised version of any such plan, program or system. If the Minister approves a revised plan, program or system so submitted, the person taking the Action must implement that plan, program or system instead of the plan, program or system as originally approved.	Compliant	The required plans were revised and approved and now able to be implemented as required. **Refer to sections 1 and 2 above**.
5	Within 18 months of the commencement of ground disturbing activities, the person taking the Action must ensure than an independent audit of compliance with the Conditions of this Approval is conducted. The independent auditor must be approved by the Minister. The audit criteria must be agreed by the Minister and the audit report must address the criteria to the satisfaction of the Minister.	Compliant	**Letter – Approval** of Independent Auditor (18/11/2011) J. Barker (DSEWPAC) MBS Environmental (2012) *Extension Hill Iron Ore Project Audit of EPBC Act Approval 2005/2381* – submitted 29 September 2012.
6	By 31 July of each year of the development, the Project Manager, Mt Gibson Iron Ore Project, of the person taking the Action (Mount Gibson Mining Ltd), must provide a certificate to the Department indicating whether the person taking the Action has complied with the conditions of this Approval.	Compliant	**Compliance Certificate 2023** – this document.
7	If the Minister believes that it is necessary or desirable for the better protection of the environment to do so, the Minister may request the person taking the Action to make specified revisions to a plan or program approved pursuant to the Conditions and to submit the revised plan or program for the Minister's approval. The person taking the Action must comply with any such request. If the Minister approves a revised plan or program pursuant to this condition, the person taking the Action must implement that plan or program instead of the plan or program as originally approved.	Not required at this stage	
8	Within five years of the date of this approval, the person taking the Action must, to the satisfaction of DEWHA, provide evidence that the Action has been substantially commenced. If DEWHA is not satisfied that there has been substantial commencement of the Action, the Action must not thereafter be commenced without the prior approval of the Minister.	Compliant	**Letter – Notification of Substantial Commencement** (23/07/2010) D. Quinlivan (MGM) & B. Mackenzie (EHPL)

APPENDIX D

Groundwater Analysis Laboratory Reports

CERTIFICATE OF ANALYSIS

Work Order	: **EP2307725**	Page	: 1 of 4
Client	: **ROCKWATER PTY LTD**	Laboratory	: Environmental Division Perth
Contact	: DAISY SCOTT	Contact	: Customer Services EP
Address	: 1ST FLOOR, 76 JERSEY ST WEMBLEY WA, AUSTRALIA 6014	Address	: 26 Rigali Way Wangara WA Australia 6065
Telephone	: (08) 9284 0222	Telephone	: +61-8-9406 1301
Project	: Extension Hill	Date Samples Received	: 12-Jun-2023 12:45
Order number	: ----	Date Analysis Commenced	: 12-Jun-2023
C-O-C number	: ----	Issue Date	: 19-Jun-2023 16:45
Sampler	: DAISY SCOTT		
Site	:		
Quote number	: EP23ROCWAT0002		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, WA
Daniel Fisher	Inorganics Analyst	Perth Inorganics, Wangara, WA

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG035: Poor matrix spike recovery was obtained for Hg due to possible matrix interference.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	EH1P	----	----	----	----
				Sampling date / time	01-Jun-2023 14:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EP2307725-001	--------	--------	--------	--------
					Result	----	----	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**8.14**	----	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**4840**	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**2580**	----	----	----	----
EA065: Total Hardness as CaCO3									
Total Hardness as CaCO3	----	1	mg/L		**408**	----	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**226**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**226**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**290**	----	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**1230**	----	----	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**38**	----	----	----	----
Magnesium	7439-95-4	1	mg/L		**76**	----	----	----	----
Sodium	7440-23-5	1	mg/L		**852**	----	----	----	----
Potassium	7440-09-7	1	mg/L		**38**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**0.02**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		**0.006**	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.257**	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.032**	----	----	----	----
Iron	7439-89-6	0.05	mg/L		<0.05	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	EH1P	----	----	----	----
				Sampling date / time	01-Jun-2023 14:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EP2307725-001	--------	--------	--------	--------
					Result	----	----	----	----
EG052G: Silica by Discrete Analyser									
Reactive Silica	----	0.05	mg/L		**32.6**	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.06**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.28**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.28**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.1	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**0.3**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.14**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.01**	----	----	----	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**45.2**	----	----	----	----
ø Total Cations	----	0.01	meq/L		**46.2**	----	----	----	----
ø Ionic Balance	----	0.01	%		**1.02**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EP2308060**	Page	: 1 of 4
Client	: **ROCKWATER PTY LTD**	Laboratory	: Environmental Division Perth
Contact	: DAISY SCOTT	Contact	: Customer Services EP
Address	: 1ST FLOOR, 76 JERSEY ST WEMBLEY WA, AUSTRALIA 6014	Address	: 26 Rigali Way Wangara WA Australia 6065
Telephone	: (08) 9284 0222	Telephone	: +61-8-9406 1301
Project	: Extension Hill	Date Samples Received	: 16-Jun-2023 13:40
Order number	: ----	Date Analysis Commenced	: 16-Jun-2023
C-O-C number	: ----	Issue Date	: 23-Jun-2023 17:01
Sampler	: DAISY SCOTT		
Site	:		
Quote number	: EP23ROCWAT0002		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, WA
Chris Lemaitre	Laboratory Manager (Perth)	Perth Inorganics, Wangara, WA

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EA015H (Total Dissolved Solids): LCS recovery falls outside ALS Dynamic Control Limit. However, they are within the acceptance criteria based on ALS Data Quality Objectives. No further action is required.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	EH2P	EH3P	EH4P	----	----
			Sampling date / time	15-Jun-2023 10:50	15-Jun-2023 16:00	14-Jun-2023 14:20	----	----
Compound	CAS Number	LOR	Unit	EP2308060-001	EP2308060-002	EP2308060-003	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.73**	**7.92**	**8.72**	**----**	**----**
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**5590**	**9750**	**8730**	**----**	**----**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**2980**	**5480**	**4720**	**----**	**----**
EA065: Total Hardness as CaCO3								
Total Hardness as CaCO3	----	1	mg/L	**319**	**794**	**661**	**----**	**----**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	**----**	**----**
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	**88**	**----**	**----**
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**311**	**344**	**296**	**----**	**----**
Total Alkalinity as CaCO3	----	1	mg/L	**311**	**344**	**384**	**----**	**----**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**338**	**540**	**414**	**----**	**----**
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**1470**	**2680**	**2420**	**----**	**----**
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**24**	**36**	**34**	**----**	**----**
Magnesium	7439-95-4	1	mg/L	**63**	**171**	**140**	**----**	**----**
Sodium	7440-23-5	1	mg/L	**1100**	**1830**	**1660**	**----**	**----**
Potassium	7440-09-7	1	mg/L	**40**	**66**	**58**	**----**	**----**
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	**----**	**----**
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	**----**	**----**
Cadmium	7440-43-9	0.0001	mg/L	**0.0003**	**0.0012**	**0.0004**	**----**	**----**
Chromium	7440-47-3	0.001	mg/L	**0.002**	<0.001	<0.001	**----**	**----**
Lead	7439-92-1	0.001	mg/L	**0.008**	**0.011**	**0.002**	**----**	**----**
Manganese	7439-96-5	0.001	mg/L	**0.018**	**0.366**	**0.111**	**----**	**----**
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	**----**	**----**
Zinc	7440-66-6	0.005	mg/L	**0.445**	**1.41**	**0.289**	**----**	**----**
Iron	7439-89-6	0.05	mg/L	<0.05	**0.08**	**0.09**	**----**	**----**
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	EH2P	EH3P	EH4P	----	----
				Sampling date / time	15-Jun-2023 10:50	15-Jun-2023 16:00	14-Jun-2023 14:20	----	----
Compound	CAS Number	LOR	Unit		EP2308060-001	EP2308060-002	EP2308060-003	--------	--------
					Result	Result	Result	----	----
EG052G: Silica by Discrete Analyser									
Reactive Silica	----	0.05	mg/L		**40.3**	**29.4**	**28.1**	**----**	**----**
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		<0.01	**0.01**	**0.01**	**----**	**----**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	**----**	**----**
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**1.94**	<0.01	<0.01	**----**	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**1.94**	<0.01	<0.01	**----**	**----**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.2**	<0.1	<0.1	**----**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**2.1**	<0.1	<0.1	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.02**	**0.12**	**0.03**	**----**	**----**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	**----**	**----**
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**54.7**	**93.7**	**84.6**	**----**	**----**
ø Total Cations	----	0.01	meq/L		**55.2**	**97.2**	**86.9**	**----**	**----**
ø Ionic Balance	----	0.01	%		**0.49**	**1.80**	**1.37**	**----**	**----**

APPENDIX E

Annual Threatened Flora Monitoring 2022 Extension Hill Hematite Operation , **Project No:EP21-102(03)**

Annual Threatened Flora Monitoring 2022

Extension Hill Hematite Operation

Project No: EP21-102(03)

Prepared for Mount Gibson Mining Limited
May 2023

Document Control

Doc name:	**Annual Threatened Flora Monitoring 2022 Extension Hill Hematite Operation**				
Doc no.:	**EP21-102(03)--004 ASF**				
Version	**Date**	**Author**		**Reviewer**	
1	May 2023	Arielle Fontaine	ASF	Tom Atkinson	TAA
	Submitted for client review				

Executive Summary

Mount Gibson Mining Limited (MGM) engaged Emerge Associates to conduct annual threatened flora monitoring at its Extension Hill Hematite Operation in the mid-west region of Western Australia.

Emerge Associates personnel conducted a field survey in November 2022 during which 35 *Darwinia masonii* plots and 15 *Lepidosperma gibsonii* plots were monitored according to MGM's *Site Work Instruction* for vegetation monitoring (SWI 385) (MGX 2015).

Outcomes of the 2022 monitoring include the following:

- The threatened flora monitoring programme continues to satisfy requirements to monitor at least 715 individuals of *D. masonii* and *L. gibsonii.*
- The monitored populations of *D. masonii* and *L. gibsonii* appear to be stable and plant health remains consistent with the results from the 2021 survey. Observations from ongoing monitoring suggest that previous mining operations and rehabilitation activities at the Extension Hill Hematite Operation have not adversely impacted populations of either species.
- No apparent indirect impacts to either species from mining as a result of excessive dust deposition or weed invasion have been observed.
- No apparent impacts to the health or persistence of either species as a result of grazing by introduced or native animals have been observed.
- The 2022 results do not indicate any significant changes to populations of either species that would warrant additional investigation by MGM.

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Abbreviation Tables

Table A1: Abbreviations – Organisations

Organisations	
BGPA	Botanic Gardens and Parks Authority
DBCA	Department of Biodiversity, Conservation and Attractions

Table A2: Abbreviations – General terms

General terms	
IBRA	Interim Biogeographic Regionalisation for Australia
MS	Ministerial Statement
SWI	Site Work Instruction
T	Threatened
WoNS	Weeds of National Significance

Table A3: Abbreviations – Legislation

Legislation	
BAM Act	*Biosecurity and Agriculture Management Act 2007*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
BC Act	*Biodiversity Conservation Act 2016*

Table A4: Abbreviations – Units of measurement

Units of measurement	
cm	Centimetre
ha	Hectare
km	Kilometre
m	Metre
m^2	Square metre
mm	Millimetre

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1 Introduction

1.1 Project background

Emerge Associates (Emerge) were engaged by Mount Gibson Mining Limited (MGM) to undertake threatened flora monitoring at its Extension Hill Hematite Operation in the mid-west region of Western Australia (referred to herein as the 'site'). The site is located approximately 350 kilometres (km) north-east of Perth within the Mount Gibson Ranges (**Figure 1**).

MGM is required to conduct annual monitoring of two threatened flora species, *Darwinia masonii* and *Lepidosperma gibsonii*, as part of approval conditions for the Extension Hill Hematite Operation and, in particular, to address conditions of Ministerial Statement No. 753 (MS 753).

MS 753 required MGM to prepare and implement interim recovery plans for both *D. masonii* and *L. gibsonii*. The interim recovery plans outlined a condition monitoring programme which stipulated a representative subset of 715 individual plants be monitored annually for each species (DEC 2008a, b). The interim recovery plans were subsequently replaced by species recovery plans as per requirements of MS 753. However, the annual monitoring requirements remain for both *D. masonii* and *L. gibsonii* (MGX and EHPL 2014b, a).

1.2 Scope of work

The scope of work was to undertake annual threatened flora monitoring across previously established quadrats according to methods outlined in the *Site Work Instruction* for vegetation monitoring (SWI 385) (MGX 2015).

As part of this scope of work, the following tasks were undertaken:

- Monitoring of at least 715 individual plants of both *D. masonii* and *L. gibsonii* in accordance with SWI 385.
- Documentation of the work undertaken into a report which includes a comparison of current results with results from past monitoring events.

2 Environmental and Legislative Context

2.1 Climate

The site lies within the Avon Wheatbelt *interim Biogeographic Regionalisation for Australia* (IBRA) region and within the Merredin (Avon Wheatbelt 1) subregion (Environment Australia 2000). The Avon Wheatbelt 1 subregion experiences a semi-arid (dry) warm Mediterranean climate which is characterised by hot, dry summers and mild, wet winters (CALM 2003).

An average of 298.2 millimetres (mm) of rainfall is recorded annually from the Dalwallinu weather station (no. 8297), which is the closest weather station within the Avon Wheatbelt 1 subregion that records both temperature and rainfall. The Dalwallinu weather station is located approximately 90 km south-west of the site. The majority of the rainfall is received between the months of May to August. Mean maximum temperatures at the Dalwallinu weather station range from 17.0°C in July to 35.3°C in January, while mean minimum temperatures range from 6.0°C in July to 18.3°C in February (BoM 2023).

Dalwallinu received 338.6 mm of rain in the 12 months prior to monitoring (November 2021 to October 2022), which is higher than the annual rainfall average (298.2 mm) but lower than the total rainfall recorded in the 12 months prior to the 2021 monitoring event (November 2020 to October 2021; 516.0 mm).

Plate 1 presents the average climate statistics for Dalwallinu together with the monthly rainfall data for the period of November 2021 to October 2022, the 12 months prior to the 2022 monitoring event (BoM 2023).

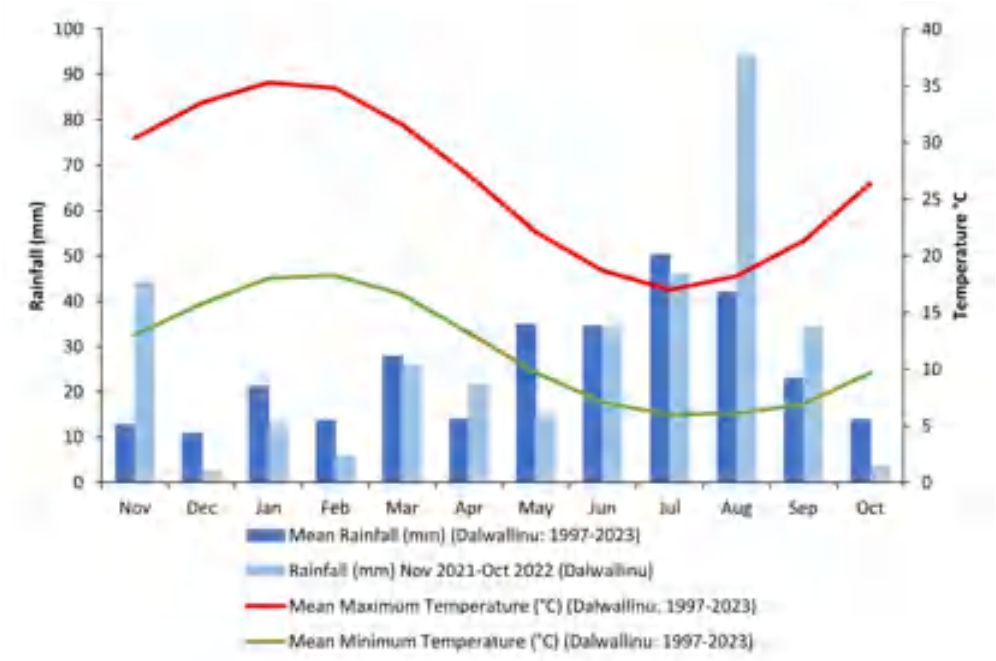

Plate 1: Climate data for Dalwallinu (Station: 8297) 1997-2023 (BoM 2023)

2.2 Threatened flora

Certain flora taxa that are considered to be rare or under threat warrant special protection under Commonwealth and/or State legislation. At a Commonwealth level, flora taxa may be listed as 'threatened' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Threatened flora species listed under the EPBC Act are assigned a conservation status according to attributes such as population size and geographic distribution. Any action likely to have a significant impact on a taxon listed under the EPBC Act requires Ministerial approval.

In Western Australia, flora species may also be classed as 'threatened' under the *Biodiversity Conservation Act 2016* (BC Act). Similarly, it is an offence to 'take' or 'disturb' threatened flora listed under the BC Act without Ministerial approval.

Further information on threatened species and their categories is provided in **Appendix A**. Two threatened flora species are present in the site, *Darwinia masonii* and *Lepidosperma gibsonii*, as described below.

2.2.1 Darwinia masonii

D. masonii is an erect shrub 1.5 to 3 m tall with narrow leaves and red inflorescences which are produced between April and November (DBCA 2018) (**Plate 2**). *D. masonii* occurs within the Mount Gibson Ranges where it is predominantly restricted to upper slopes, crests and ridges (DBCA 2018). This species is listed as 'vulnerable' under the EPBC Act and 'critically endangered' under the BC Act.

Plate 2: Darwinia masonii habit and habitat (left), infructescence (centre), seedling (right) (Emerge Associates)

2.2.2 Lepidosperma gibsonii

L. gibsonii is a fine-leaved perennial herb (sedge) up to 0.6 m tall (MGX and EHPL 2014a) (**Plate 3**). *L. gibsonii* is restricted to the Mount Gibson Ranges and adjoining areas (DEC 2008a). This species is listed as 'endangered' under the BC Act.

Plate 3: Lepidosperma gibsonii habitat (left) and habit (centre and right) (Emerge Associates)

2.3 Weeds and declared pests

The term 'weed' can refer to any plant that requires some form of action to reduce its effect on the economy, the environment, human health and amenity. Many non-native flora species and some native species are considered to be weeds. The likelihood of weeds occurring is higher in disturbed areas, especially areas that have been set aside for mining activities.

A particularly invasive or detrimental weed species may be listed as a 'declared pest' pursuant to Western Australia's *Biosecurity and Agriculture Management Act 2007* (BAM Act), indicating that it warrants special management to limit its spread.

The Commonwealth government has further compiled a list of 32 *Weeds of National Significance* (WoNS) (DAWE 2021). Whilst the WoNS list is non-statutory, many WoNS are also listed under the BAM Act. Further information on weeds and declared pests is provided in **Appendix A**.

2.4 Historical land use

Mining at Extension Hill was completed in late 2016. Mining then transitioned to Iron Hill in early 2017 and stopped in December 2018 with ore sales continuing until February 2019. In June 2019, low-grade ore was taken from stockpiles at Extension Hill for direct shipping ore sales, and this continued through to June 2020. Similarly, in March 2020, MGM undertook processing of low-grade stockpiles of hematite ore located adjacent to and within portions of the Iron Hill waste rock landform. Mining of subgrade ore, comprised of shallow detrital hematite west of the Extension Hill mine pit, took place between July and September 2020. Since these works were completed, rehabilitation activities have taken place on site at the shallow detrital gravel pits and at the Iron Hill waste rock landform. Rehabilitation earthworks for these areas were undertaken in late 2020 and hand-seeding took place in February 2021 at the Iron Hill waste rock landform.

2.5 Previous surveys

Threatened flora monitoring at the Extension Hill Hematite Operation has been undertaken annually since 2007. Emerge previously completed the threatened flora monitoring in November 2021 (Emerge Associates 2022).

3 Methods

3.1 Field survey

Four ecologists from Emerge visited the site between 21 and 26 November 2022 to conduct the annual threatened flora monitoring.

The condition of *D. masonii* and *L. gibsonii* populations not directly impacted by mining was monitored for indirect impacts from mining and other potential threats (e.g. grazing). The method employed was based on SWI 385 developed by MGM (MGX 2015). A total of 50 permanent monitoring plots were monitored: 35 for *D. masonii* and 15 for *L. gibsonii.*

3.1.1 Sampling design

The threatened flora condition monitoring programme commenced in 2007 and established a number of monitoring plots within different locations to capture a representative subset of 715 individual plants across the site for each species. Permanent plot dimensions are 5 x 5 m for *L. gibsonii* and 10 x 10 m for *D. masonii*. Over the years, slight changes to the sampling design have taken place to compensate for the removal of monitoring plots following authorised operational activities.

D. masonii was monitored at 35 plots within six monitoring locations: Extension Hill, Extension Hill South, Iron Hill East, Iron Hill North, Mt Gibson North and Mt Gibson South. *L. gibsonii* was monitored at 15 plots within six monitoring locations: Extension Hill South, Iron Hill North, Mt Gibson North, Mt Gibson South, South of Mt Gibson South and West of the Great Northern Highway.

A summary of the monitoring locations and plots visited during the 2022 survey is provided in **Table 1** and **Table 2**. Monitoring locations are shown in **Figure 1**.

Table 1: Monitoring locations for Darwinia masonii in 2022

Location	Plot	Easting	Northing
Extension Hill	Site 1	515839	6728116
	Site 2	515973	6727755
	Site 3a	515674	6727636
	Site 3b	515698	6727626
	Site 3c	515683	6727620
Extension Hill South	D1	516034	6727468
	D2	516139	6727143
	D3	516025	6727072
	D16	516259	6727134
	D17	516307	6727072
	D18	516378	6726884

Table 1: Monitoring locations for Darwinia masonii in 2022 (continued)

Location	Plot	Easting	Northing
Iron Hill East	D33	517458	6725598
Iron Hill North	D19	516413	6726387
	D20	516404	6726251
	D25	516243	6726174
	D26	516385	6726239
	D27	516376	6725786
Mt Gibson North	D9	517899	6726222
	D10	517872	6726276
	D11	517885	6726311
	D12	517932	6726423
	D21	517771	6726275
	D22	518042	6726209
	D23	517906	6726198
Mt Gibson South	D13	519414	6725125
	D14	519396	6725037
	D15	519462	6724995
	D28	519122	6725613
	D29	518967	6725719
	D30	518823	6725789
	D31	518625	6725854
	D32	518747	6725750
	D34	519339	6725369
	D35	519368	6725124
	D36	518696	6725821

Coordinates are in Map Grid of Australia (MGA94) - Zone 50.

Table 2: Monitoring locations for Lepidosperma gibsonii in 2022

Location	Plot	Easting	Northing
Extension Hill South	L16	516020	6727464
	L17	515920	6727433
	L26	516140	6727203
	L28	516114	6727205
	LX2	516134	6727184
Iron Hill North	L20	516503	6725511
	L22	516526	6725541
	L27	516683	6725646
Mt Gibson North	L23	517844	6726165
	L24	517836	6726146
Mt Gibson South	L30	519381	6725272
	L31	519260	6725442
	LX1	519377	6725279
South of Mt Gibson South	L29	519715	6724566
West of the Great Northern Highway	L32	513755	6726483

Coordinates are in Map Grid of Australia (MGA94) - Zone 50.

3.1.2 Plot monitoring

The information recorded within each plot included:

- date and time that monitoring commenced
- a photograph from the north-west corner
- observations of grazing
- presence of weeds
- presence of dust (i.e. from operational activities)
- maintenance requirements.

Individual plants within each plot were assigned a unique plant identification number on a tag. Where tags were missing or for new plants identified, new tags were issued. Tags were loosely attached to individual *D. masonii* plants and pegged into the ground adjacent to *L. gibsonii* individuals.

The information recorded for each plant based on MGX (2015) included:

- reproductive status (presence or absence of buds, inflorescences or seed)
- plant age (seedling or mature plant)[1]

[1] SWI 385 refers to seedling, intermediate, adult and senescent age categories. For simplicity, this was rationalised into two categories: seedling and mature plant.

- seedling recruitment and plant attrition
- plant health (**Sections 3.1.2.1** and **3.1.2.2**)
- plant height (and basal diameter for *L. gibsonii*)
- evidence of grazing for *L. gibsonii* individuals.

D. masonii individuals were considered seedlings where they had a height of less than 30 cm and no history of flowering. *L. gibsonii* individuals were considered seedlings where they had a basal diameter of less than 2 cm and no history of flowering.

Where a tag was found loose on the ground, the plant to which the tag belonged was inferred. However, on several occasions, no plant or plant remains could be located and the tags were removed. In this case, the plant was scored as dead.

Field notes and data were entered on an electronic device and uploaded to a central data management system daily.

3.1.2.1 *Darwinia masonii* health score

The health of *D. masonii* individuals was scored using the species-specific criteria shown in **Table 3**. This follows condition monitoring conducted by the Botanic Gardens and Parks Authority (BGPA) to maintain consistency and comparability of data over time. Additional observations were recorded where factors potentially contributing to the poor health of the plant were evident (e.g. presence of dust or parasitic plants).

Table 3: Plant health score criteria for Darwinia masonii (MGX 2015)

Score		Plant vigour	Canopy	Leaf colour	New growth
0	Near death	Dead or nearly dead	Absent or nearly	Yellow/brown	Absent
1	Very poor	Very low	Thin	Yellow/brown	Absent
2	Poor	Moderate	Moderate-full	Grey-green, some yellow-brown	Absent
3	Fine	Good	Full	Blue green	Present

The scale in **Table 3** is subjective and has four criteria for every score category. Individual plants will often display attributes of different scores. The scale was applied conservatively in the field and each plant needed to meet all criteria within a score category to attain a given score. For example, a plant with good vigour, a full canopy and blue green leaves but no new growth, only meets three out of the four criteria for a score of three ('fine') and would receive a score of two ('poor'). The health score of zero was assigned to plants near death. Plants confirmed as dead (i.e. assessed as dead in the field for two consecutive surveys) or recorded as dead for one year in 2022 were excluded from health score calculations.

3.1.2.2 *Lepidosperma gibsonii* health score

The health of *L. gibsonii* individuals was scored using the species-specific criteria shown in **Table 4**. This follows condition monitoring conducted by BGPA for consistency and comparability of data over time. Additional observations were recorded where factors potentially contributing to the poor health of the plant were evident (e.g. presence of dust or parasitic plants).

Table 4: Plant health score criteria for Lepidosperma gibsonii (MGX 2015)

Score		Plant vigour	Leaf colour	New growth	Reproduction
0	Near death	Dead or nearly dead	Yellow-grey	Absent	Little or none
1	Poor	Very low	Green-yellow	Little	Few inflorescences
2	Good	Moderate	Green	Vigorous	Many inflorescences

As discussed in **Section 3.1.2.1** the scale in **Table 4** is subjective and has four criteria for every score category. As for *D. masonii*, the scale was applied conservatively in the field and each plant needed to meet all criteria within a score category to attain a given score. The only exception being when a plant was considered too young to have flowered but met all the other criteria for a score of two ('good'), in which case a score of two was awarded. The health score of zero was assigned to plants near death. Plants confirmed as dead or recorded as dead for one year in 2022 were excluded from health score calculations.

3.1.3 Plot maintenance

Many monitoring plots, particularly *D. masonii* plots, are rocky and installation of wooden corner stakes or star pickets can be problematic. Spray paint has been used to mark out a number of plots and is an effective marker, provided that it is reapplied before it fades. During the 2022 monitoring survey, spray paint was reapplied where needed and care was taken to ensure that no aerosol particles were blown on to nearby vegetation.

Certain wire types connecting tags to *D. masonii* individuals rust over time and periodically require replacing. This was completed in the field during the 2022 survey where required. Additional flagging tape was applied to help with locating monitoring plots and seedlings.

3.2 Data analysis

Population structure in 2022 was reported as a proportion of seedlings and mature plants that were alive or dead. Mean values for health and size attributes for each species were calculated using Microsoft Excel. Sample error is indicated by a 95% confidence interval around the mean.

Trends in recruitment, population persistence and health over time were reported for all monitoring years, with the exception of data collected in 2017, April 2013 and November 2009 for *D. masonii* and 2017, April 2013 and December 2008 for *L. gibsonii*. Data from these years were excluded as these are considered incomplete and/or inconsistent with the long-term monitoring datasets.

For both *D. masonii* and *L. gibsonii*, individuals found dead in the field for the first time in 2022 were considered to have died in 2022 for the purposes of comparing data between years. However, as for previous monitoring years, these plants will need to be confirmed dead in 2023[2]. If found to be alive, the 2022 data associated with these plants will be updated accordingly.

[2]Excepting very small *D. masonii* seedlings recorded for the first time in 2021 which were able to be confirmed dead in 2022 and do not require further survey.

3.3 Survey limitations

An evaluation of survey methodology together with a review of approval conditions for the Extension Hill Hematite Operation did not identify any constraints which may have limited survey outcomes. The broad scale contextual information, experience level of personnel undertaking the survey, survey timing and resources available were considered adequate and no survey limitations were identified for the 2022 annual threatened flora monitoring.

4 Results

4.1 *Darwinia masonii*

4.1.1 2022 monitoring

4.1.1.1 Plot descriptions

Photographs of each monitoring plot are presented in **Appendix B** and plot descriptions are provided in **Appendix C**.

No evidence of grazing was recorded within *D. masonii* monitoring plots. A non-native (weed) species, **Pentameris airoides*, was recorded within a number of plots at Mt Gibson North and Mt Gibson South. Evidence of historical dust deposition was observed within five plots at Extension Hill. No evidence of dust deposition was observed at other monitoring locations.

4.1.1.2 Recruitment and population persistence

A total of 794 *D. masonii* plants were recorded alive and 184 were recorded dead in 2022 (**Table 5**). Of the 184 plants recorded dead, 180 were seedlings recorded for the first time in 2021 and four were mature individuals which will need to be confirmed dead in 2023.

New tags were placed on six plants in 2022. Three tags were used to replace damaged tags (previous records were updated to reflect the current tag number). One tag was placed on an untagged mature plant. Two tags were placed on new seedlings.

An additional six plants were confirmed dead during the 2022 monitoring, having previously been recorded dead in 2021.

Table 5: Summary of Darwinia masonii monitoring results for 2022

Location	Plot	Plants recorded alive	Plants recorded dead^
Extension Hill	Site 1	33	0
	Site 2	23	5
	Site 3a	13	0
	Site 3b	6	7
	Site 3c	6	1
Extension Hill South	D1	13	0
	D2	14	0
	D3	32	1
	D16	9	0
	D17	36	0
	D18	10	0
Iron Hill East	D33	25	0

Table 5: Summary of Darwinia masonii monitoring results for 2022 (continued)

Location	Plot	Plants recorded alive	Plants recorded dead^
Iron Hill North	D19	32	13
	D20	24	1
	D25	23	12
	D26	21	6
	D27	19	9
Mt Gibson North	D9	20	7
	D10	22	4
	D11	23	14
	D12	53	0
	D21	32	0
	D22	18	3
	D23	53	21
Mt Gibson South	D13	12	12
	D14	22	1
	D15	17	10
	D28	16	0
	D29	30	11
	D30	22	0
	D31	24	1
	D32	31	4
	D34	22	30
	D35	15	2
	D36	23	9

^ The number of plants recorded dead for the first time in 2022 (mature plants will need to be confirmed dead in 2023).

4.1.1.3 Population structure

The population structure for *D. masonii* in 2022 is summarised in **Table 6**. The proportion of mature plants and seedlings recorded alive or dead at each monitoring location is presented in **Plate 4**.

Table 6: Summary of Darwinia masonii population structure in 2022

Location	Number of plots	Mature plants (alive)	Mature plants (dead)^	Seedlings (alive)	Seedlings (dead)^
Extension Hill	5	81	0	0	13
Extension Hill South	6	112	0	2	1
Iron Hill East	1	25	0	0	0
Iron Hill North	5	119	2	0	39
Mt Gibson North	7	220	1	1	48
Mt Gibson South	11	226	1	8	79

^ mature plants (dead) and seedlings (dead) refer to plants that were recorded dead for the first time in 2022. Mature plants will need to be confirmed dead in 2023.

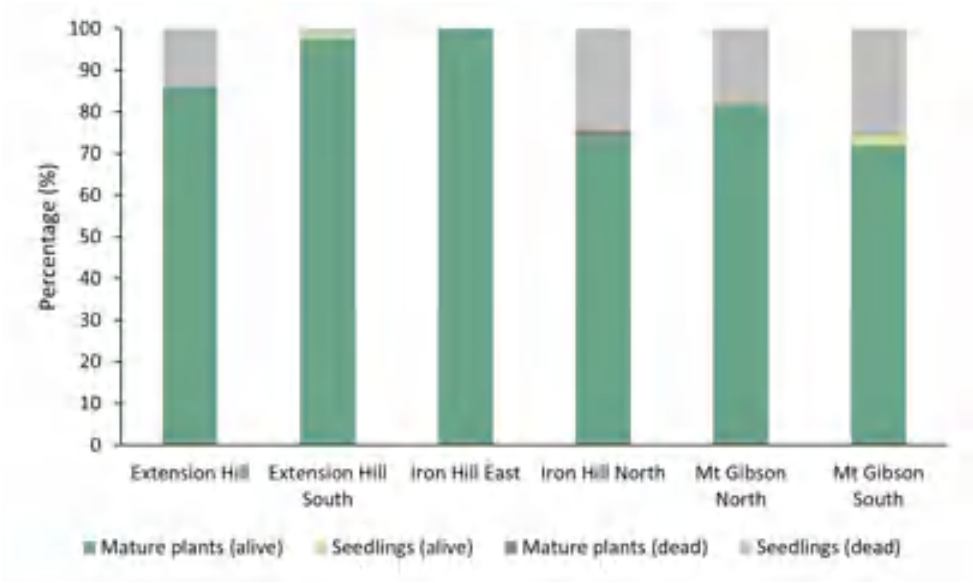

Plate 4: Proportion of mature plants and seedlings of Darwinia masonii recorded alive or dead at each monitoring location in 2022

4.1.1.4 Plant health

Mean health scores at each monitoring location in 2022 are presented in **Plate 5.** The proportion of *D. masonii* plants by health score category at each monitoring location in 2022 is presented in **Plate 6**.

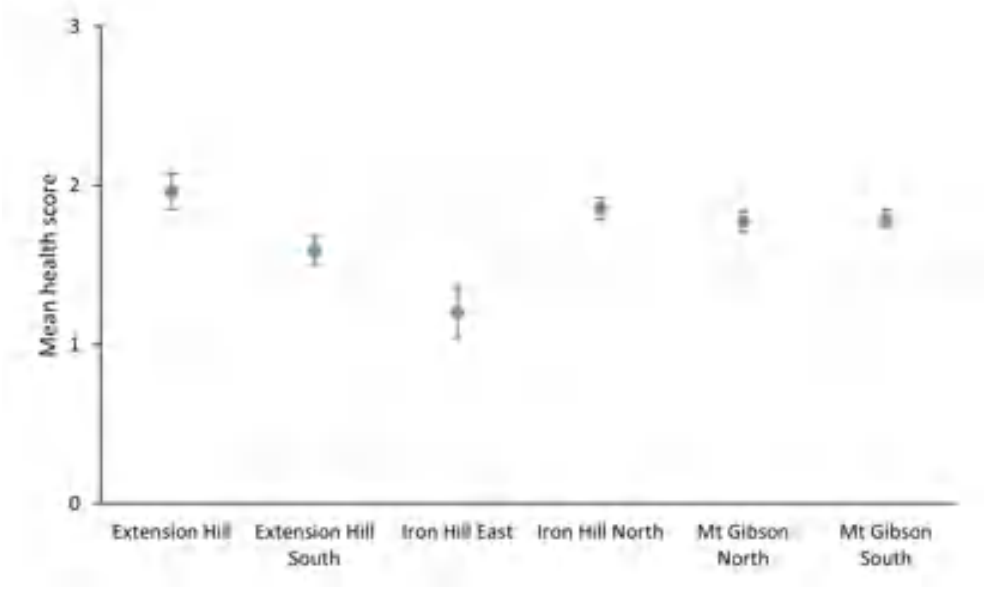

Plate 5: Darwinia masonii mean health scores (± 95% confidence interval) at each monitoring location in 2022

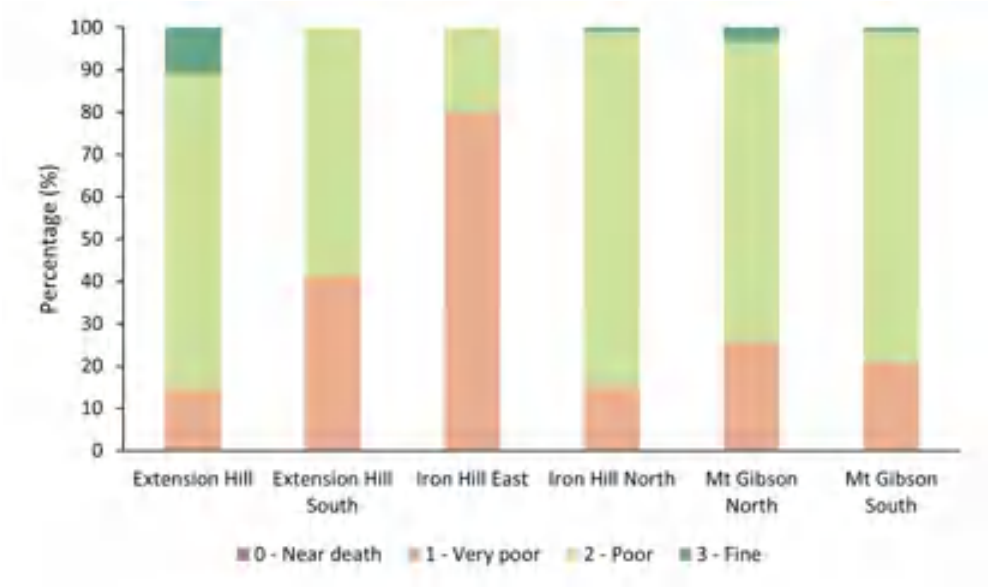

Plate 6: Proportion of Darwinia masonii plants by health score category at each monitoring location in 2022

4.1.1.5 Plant height

Mean height measured at each monitoring location for mature plants and seedlings in 2022 are shown in **Plate 7**.

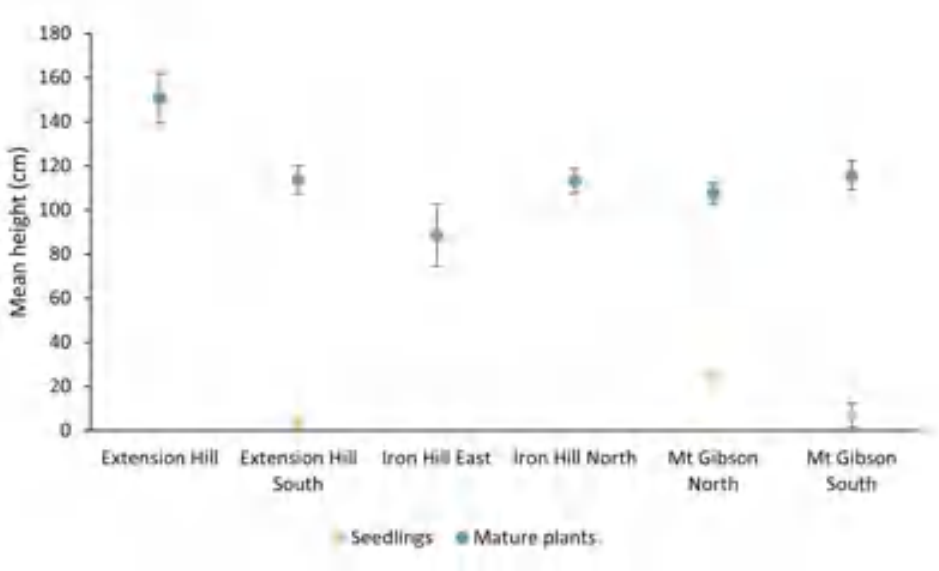

Plate 7: Darwinia masonii mean height measurements (± 95% confidence interval) for mature plants and seedlings at each monitoring location in 2022

4.1.2 Multi-year monitoring

4.1.2.1 Recruitment and population persistence

A summary of *D. masonii* monitoring results for all monitoring locations across all years is provided in **Plate 8**. The proportion of mature plants and seedlings recorded alive or dead at each monitoring location across all monitoring years is presented in **Plate 9**.

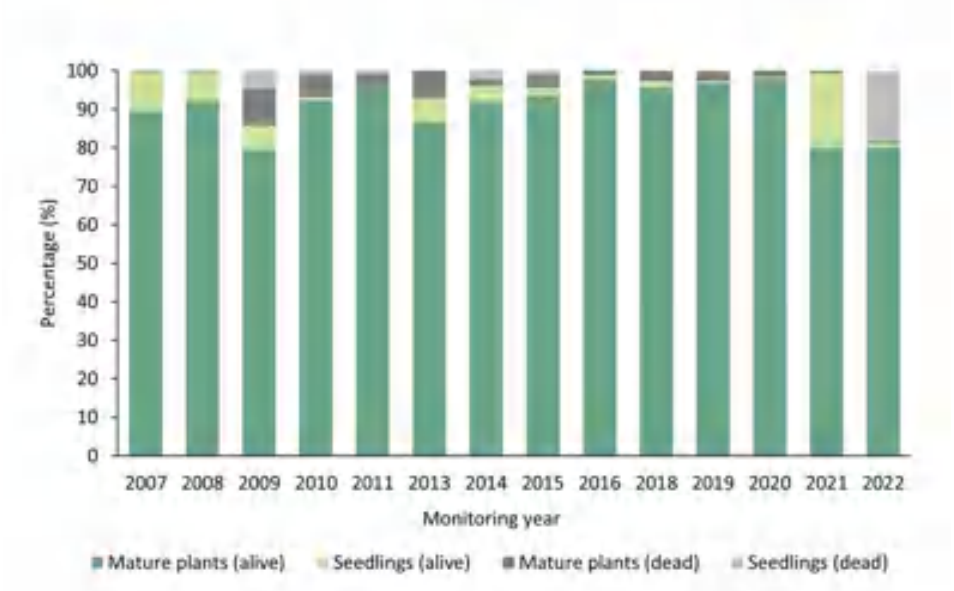

Plate 8: Proportion of mature plants and seedlings of Darwinia masonii recorded alive or dead for all monitoring locations across all monitoring years

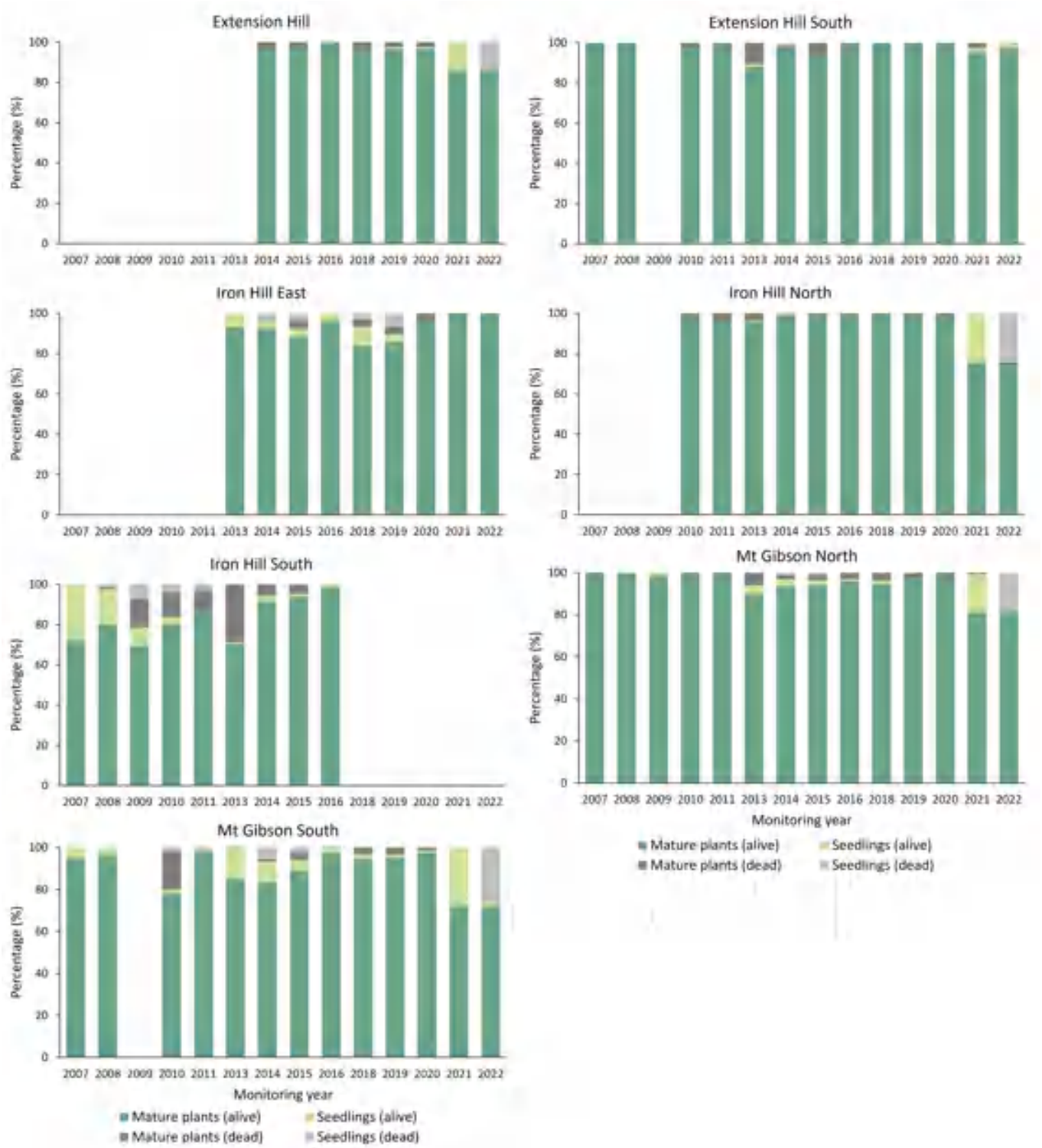

Plate 9: Proportion of mature plants and seedlings of Darwinia masonii recorded alive or dead at each monitoring location across all monitoring years

4.1.2.2 Plant health

Mean health scores for all monitoring locations across all years are provided in **Plate 10**. Mean health scores for each monitoring location across all monitoring years are presented in **Plate 11**.

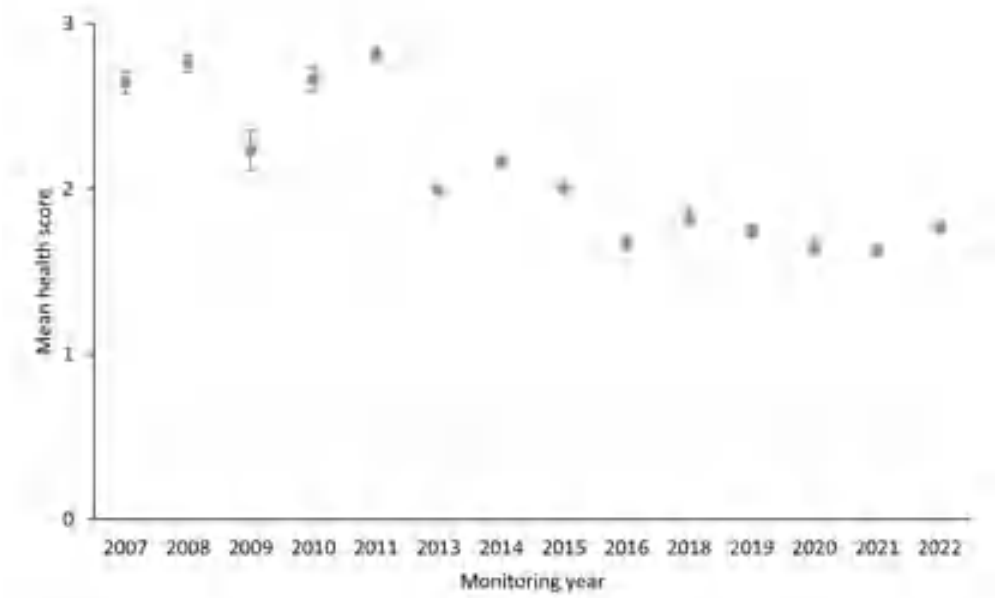

Plate 10: Darwinia masonii mean health scores (± 95% confidence interval) for all monitoring locations across all monitoring years

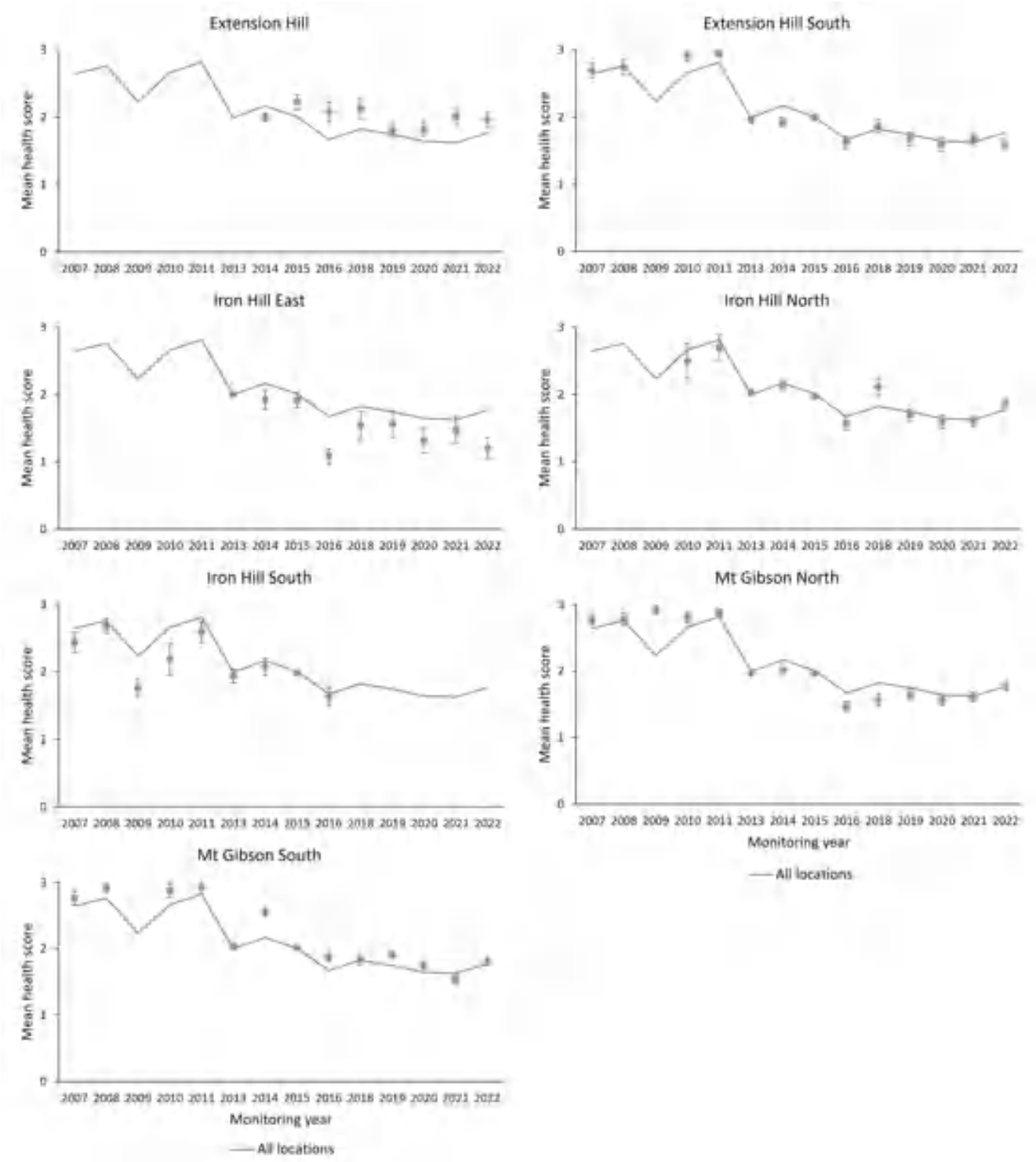

Plate 11: Darwinia masonii mean health scores for each monitoring location across all monitoring years. Mean health scores (± 95% confidence interval) for each monitoring location are presented as green markers. Mean health scores for all monitoring locations across all monitoring years are presented as a grey trendline in each graph

4.2 *Lepidosperma gibsonii*

4.2.1 2022 monitoring

4.2.1.1 Plot descriptions

Photographs of each monitoring plot are presented in **Appendix D** and plot descriptions are provided in **Appendix E**.

No evidence of dust deposition was recorded within *L. gibsonii* monitoring plots. A non-native (weed) species, **Pentameris airoides*, was recorded within plots at Iron Hill North and evidence of grazing was observed at 10 of 15 *L. gibsonii* plots.

4.2.1.2 Recruitment and population persistence

A total of 893 *L. gibsonii* plants were recorded alive and 15 were recorded dead for the first time in 2022 (**Table 7**).

New tags were placed on six plants in 2022. Four tags were placed on untagged mature plants and two tags were placed on new seedlings.

Two loose tags were found which could not be linked back to an associated plant. These were presumed dead with the year of death marked as 2022.

An additional 12 plants were confirmed dead during the 2022 survey, having been previously recorded dead in 2021. One plant that has not been found for two consecutive years (2021 and 2022) has been presumed dead and an additional plant not found in 2021 and for which a loose tag was found has been recorded dead. The year of death for these two plants has been marked as 2021 (i.e. the first year the plants were not found).

Table 7: Summary of Lepidosperma gibsonii monitoring results for 2022

Location	Plot	Plants recorded alive	Plants recorded dead^
Extension Hill South	L16	12	0
	L17	0	0
	L26	64	1
	L28	47	2
	LX2	100	3
Iron Hill North	L20	14	0
	L22	28	1
	L27	132	4
Mt Gibson North	L23	43	0
	L24	52	2

Table 7: Summary of Lepidosperma gibsonii monitoring results for 2022 (continued)

Location	Plot	Plants recorded alive	Plants recorded dead^
Mt Gibson South	L30	64	2
	L31	13	0
	LX1	80	0
South of Mt Gibson South	L29	17	0
West of the Great Northern Highway	L32	227	0

^ The number of plants recorded dead for the first time in 2022 (these plants will need to be confirmed dead in 2023).

4.2.1.3 Population structure

Population structure for *L. gibsonii* in 2022 is summarised in **Table 8**. The proportion of mature plants and seedlings recorded alive or dead at each monitoring location is presented in **Plate 12**.

Table 8: Summary of Lepidosperma gibsonii population structure in 2022

Location	Number of plots	Mature plants (alive)	Mature plants (dead)^	Seedlings (alive)	Seedlings (dead)^
Extension Hill South	5	219	4	4	2
Iron Hill North	3	172	5	2	0
Mt Gibson North	2	93	2	2	0
Mt Gibson South	3	156	2	1	0
South of Mt Gibson South	1	17	0	0	0
West of the Great Northern Highway	1	211	0	16	0

^ mature plants (dead) and seedlings (dead) refer to plants that were recorded dead for one year in 2022. These are to be confirmed dead in 2023.

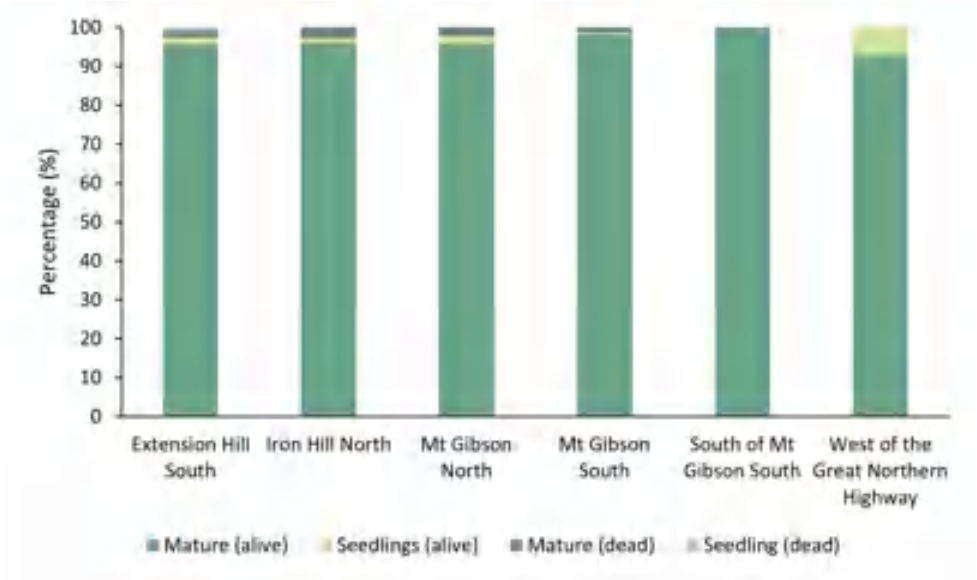

Plate 12: Proportion of mature plants and seedlings of Lepidosperma gibsonii recorded alive or dead at each monitoring location in 2022

4.2.1.4 Plant health

Mean health scores at each monitoring location in 2022 are presented in **Plate 13**. The proportion of *L. gibsonii* plants by health score category at each monitoring location in 2022 is presented in **Plate 14**.

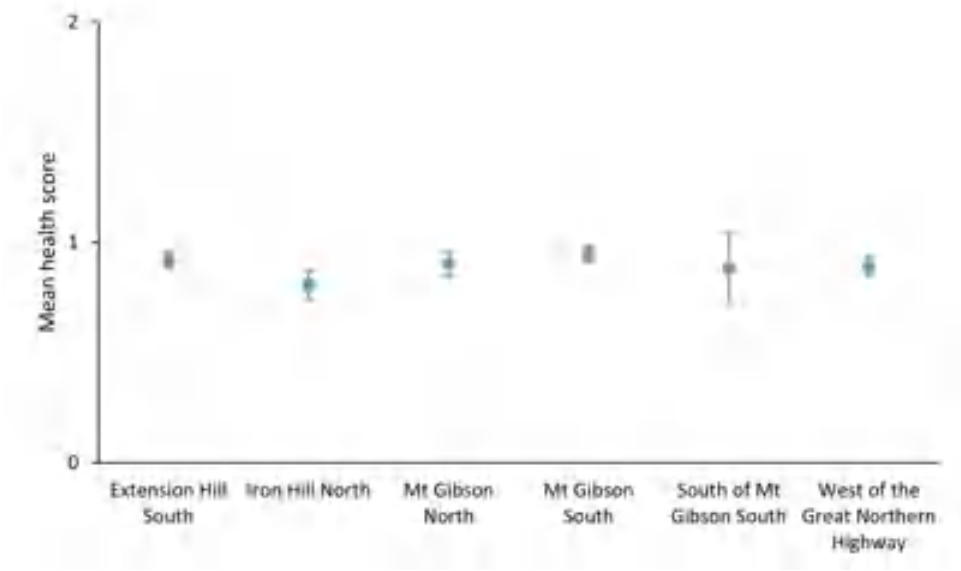

Plate 13: Lepidosperma gibsonii mean health scores (± 95% confidence interval) at each monitoring location in 2022

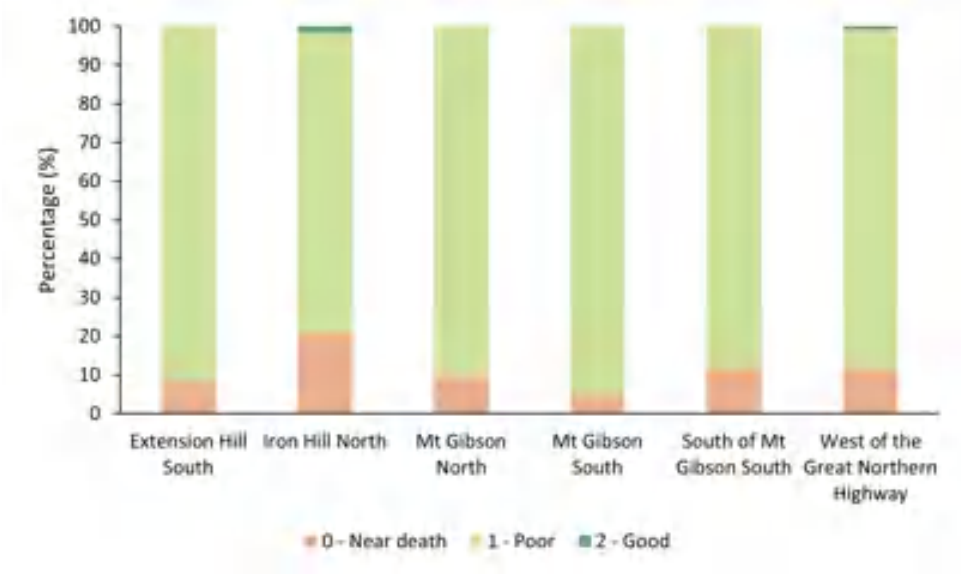

Plate 14: Proportion of Lepidosperma gibsonii plants by health score category at each monitoring location in 2022

4.2.1.5 Plant height and basal diameter

Mean height and basal diameter measured at each monitoring location for mature plants and seedlings in 2022 are shown in **Plate 15** and **Plate 16** respectively.

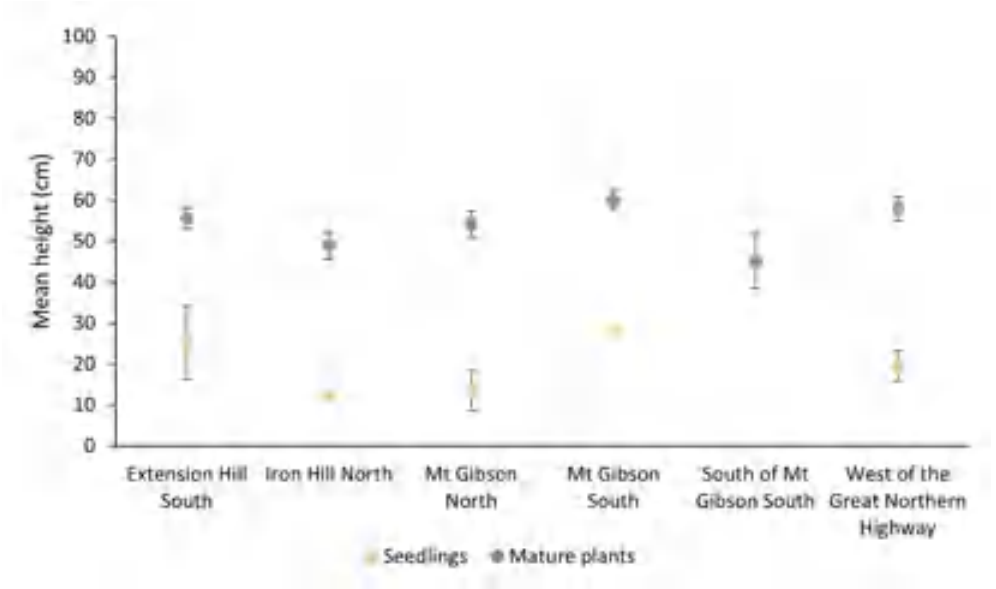

Plate 15: Lepidosperma gibsonii mean height measurements (± 95% confidence interval) for mature plants and seedlings at each monitoring location in 2022

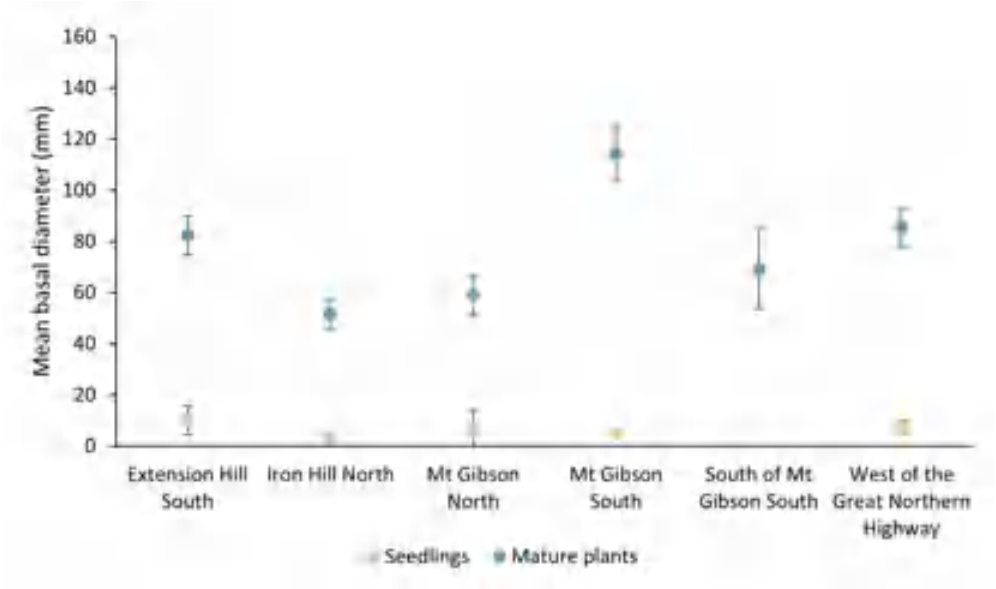

Plate 16: Lepidosperma gibsonii mean basal diameter measurements (± 95% confidence interval) for mature plants and seedlings at each monitoring location in 2022

4.2.2 Multi-year monitoring

4.2.2.1 Population persistence

A summary of *L. gibsonii* monitoring results for all monitoring locations across all years is provided in **Plate 17**. The proportion of plants recorded alive or dead at each monitoring location across all monitoring years is presented in **Plate 18**.

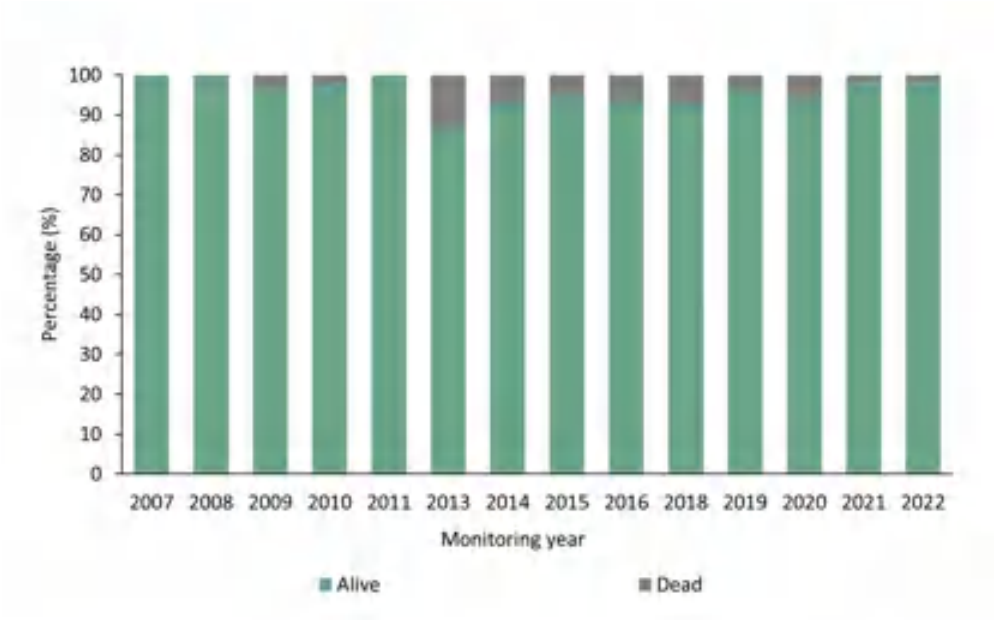

Plate 17: Proportion of Lepidosperma gibsonii plants recorded alive or dead for all monitoring locations across all monitoring years

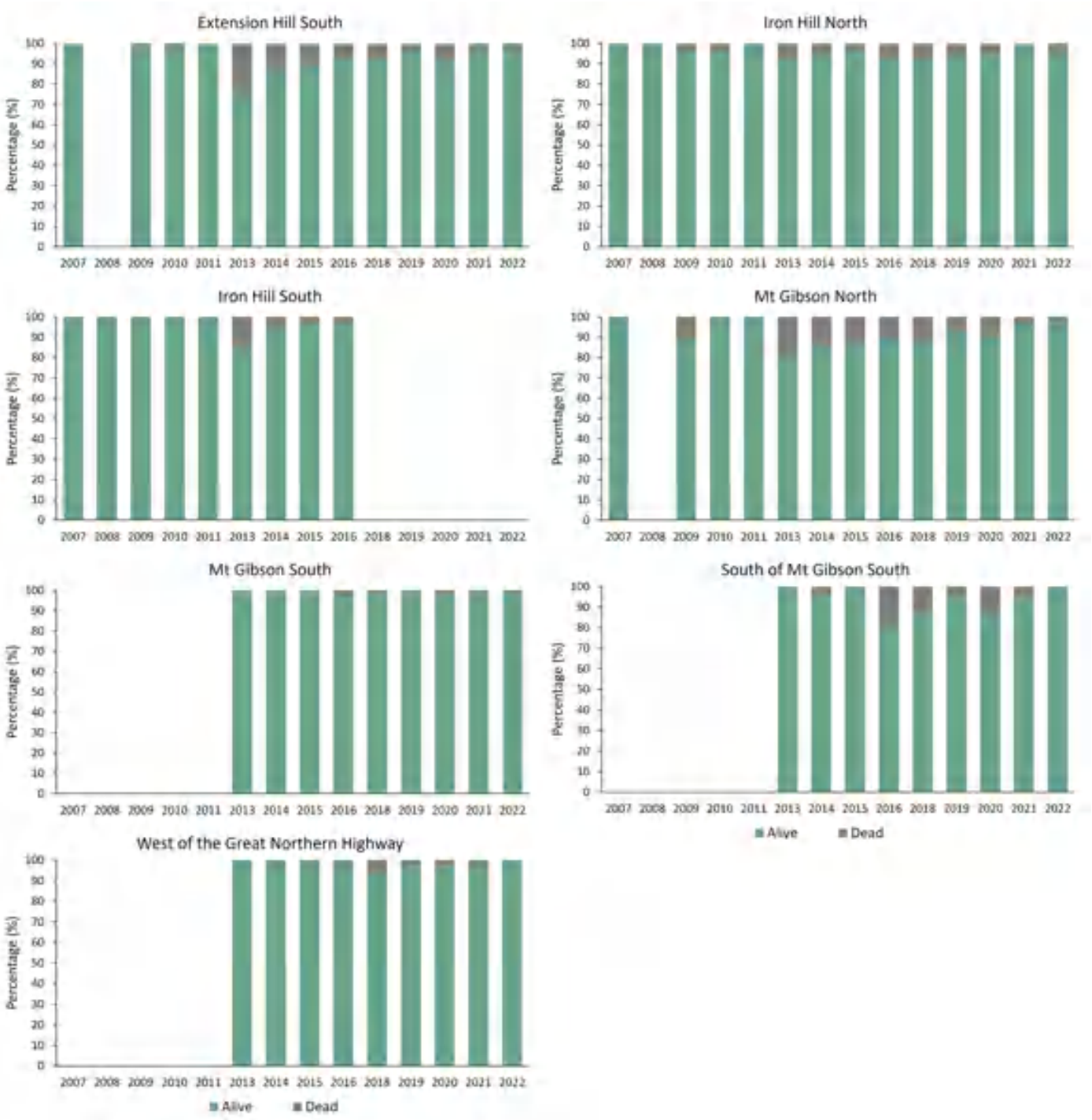

Plate 18: Proportion of Lepidosperma gibsonii plants recorded alive or dead at each monitoring location across all monitoring years

4.2.2.2 Plant health

Mean health scores for all monitoring locations across all years are provided in **Plate 19**. Mean health scores for each monitoring location across all monitoring years are presented in **Plate 20**.

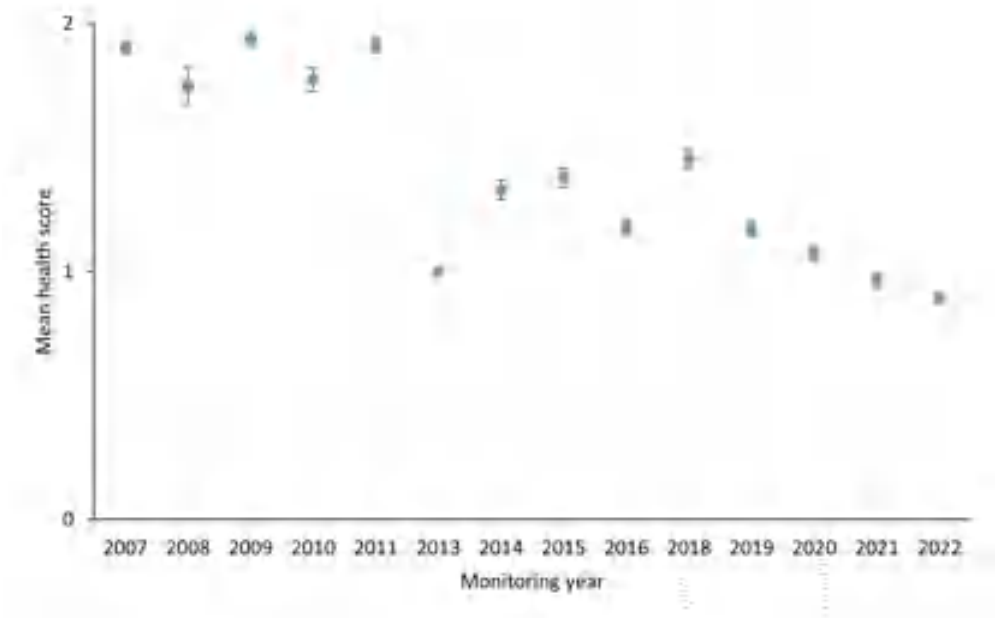

Plate 19: Lepidosperma gibsonii mean health scores (± 95% confidence interval) for all monitoring locations across all monitoring years

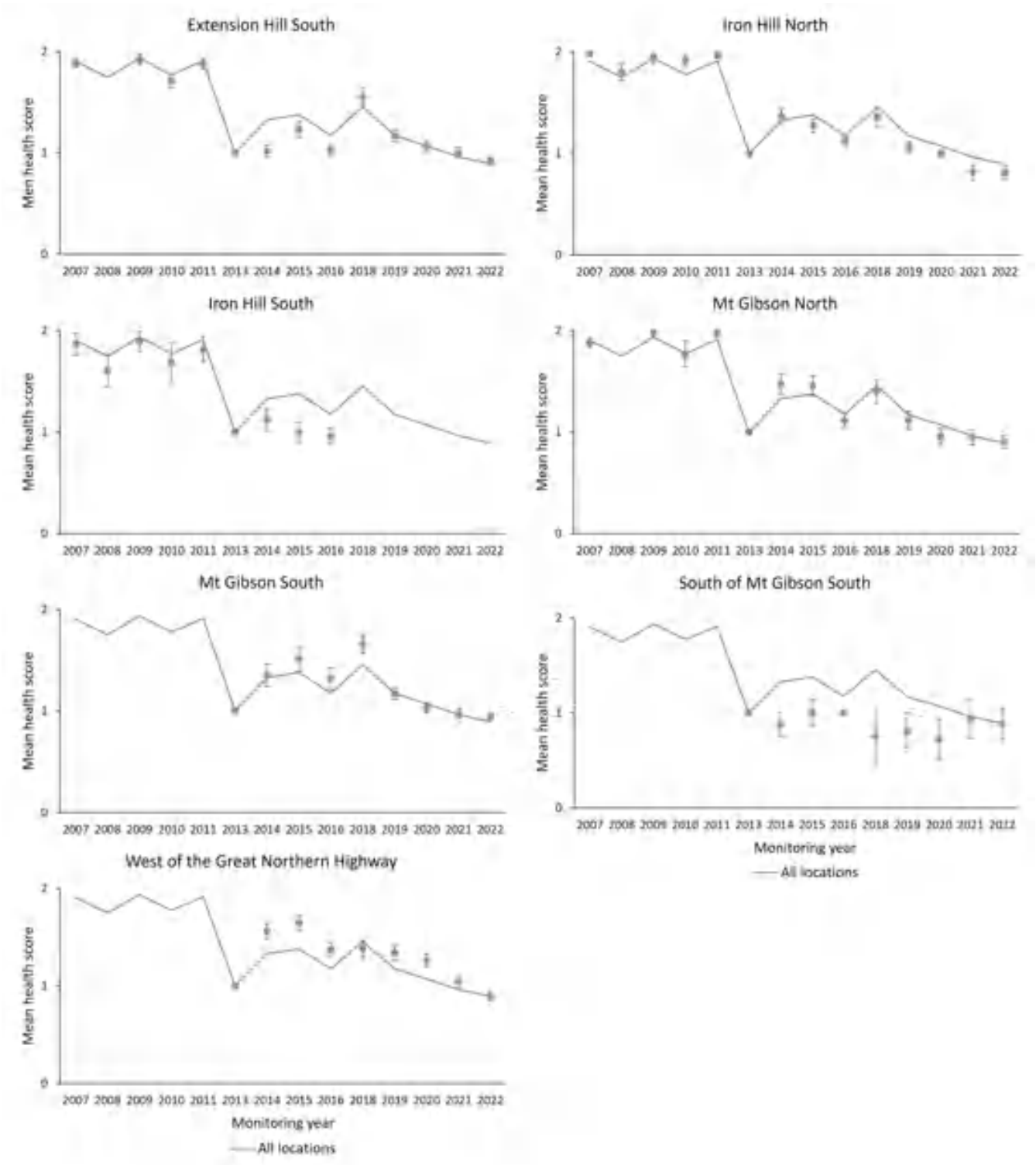

Plate 20: Lepidosperma gibsonii mean health scores for each monitoring location across all monitoring years. Mean health scores (± 95% confidence interval) for each monitoring location are presented as green markers. Mean health scores for all monitoring locations across all monitoring years are presented as a grey trendline in each graph

4.2.2.3 Herbivory

Evidence of grazing was recorded at 10 plots during the 2022 monitoring survey. This grazing is not believed to be related to stock grazing as the nearby pastoral properties have been destocked. These plants may have been grazed by native or feral animals with both kangaroo scats and rabbit scats observed on site.

The proportion of *L. gibsonii* plants observed with or without evidence of grazing is presented in **Plate 21** for the last three years of monitoring (2020-2022).

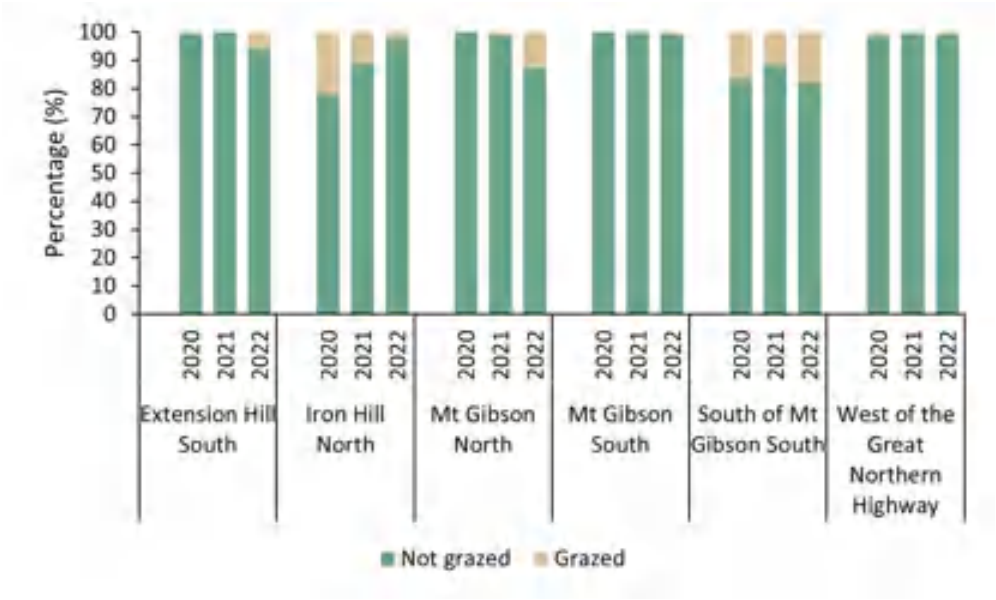

Plate 21: Proportion of Lepidosperma gibsonii plants observed with or without evidence of grazing at each monitoring location in 2020 to 2022

5 Discussion

In 2022, 794 *D. masonii* plants and 893 *L. gibsonii* plants were recorded alive. The threatened flora monitoring programme thus continues to satisfy requirements to monitor at least 715 individuals for each species.

5.1 Recruitment and population persistence

Two new *D. masonii* seedlings were recorded during the 2022 survey (0.3% of the individuals recorded alive). This is less than the number of new seedlings recorded during the 2021 survey (Emerge Associates 2022). 2021 was a particularly strong year for recruitment of *D. masonii* with 190 new seedlings recorded during the survey (19.5% of the individuals recorded alive). This is the highest number of new seedlings recorded in a given year since monitoring began in 2007. It coincided with a particularly high amount of rainfall received in the 12 months prior to the 2021 survey (refer **Section 2.1**). The amount of rainfall received in the 12 months prior to the 2022 survey, although higher than the annual rainfall average, was lower than that received in the 12 months prior to the 2021 survey. Multi-year analysis of persistence suggests three main recruitment events for *D. masonii* over the 16-year monitoring period, 2007, 2013 and 2021, with low seedling recruitment in intervening years.

Two new seedlings were recorded in *L. gibsonii* monitoring plots during the 2022 survey (0.2% of the individuals recorded alive). This is less than the number of new seedlings recorded during the 2021 survey (19 new seedlings, 2.1% of the individuals recorded alive) (Emerge Associates 2022). However, low seedling recruitment is consistent with previous monitoring results and is expected for this species which is known to germinate in a single cohort after fire events of which there have been none in recent years (MGX and EHPL 2014a).

Results for the 2022 monitoring indicate that populations of both species comprise mature plants and seedlings. Attrition rates have varied over the years for both species. Plant fatalities recorded in 2022 are high for *D. masonii* compared to those recorded in previous years. However, 97.8% of these deaths are seedlings that were recorded for the first time in 2021. Overall populations of both species appear stable.

5.2 Plant health

The mean health score for *D. masonii* across all monitoring locations in 2022 (1.8 ± 0.03) is slightly higher than both the 2021 and 2020 results (both 1.6 ± 0.04).

The mean health score for *L. gibsonii* across all monitoring locations in 2022 (0.9 ± 0.02) is slightly lower than that recorded in 2021 and 2020 (1.0 ± 0.03 and 1.1 ± 0.03 respectively). A total of 11.2 % of *L. gibsonii* plants recorded alive in 2022 were given a health score of 0 ('near death'). This is similar to the proportion of plants recorded alive and given a health score of 0 in 2021 (10.7%) (Emerge Associates 2022). Plants given a health score of 0 often showed attributes associated with higher health scores but lacked inflorescences and so were assigned a health score of 0 in accordance with the criteria outlined in **Table 4**. Due to the conservative manner in which the scale must be applied,

the mean health score for *L. gibsonii* may be a slight underrepresentation of the actual health of *L. gibsonii* populations within the site.

Mean health scores for both species have remained consistently lower than that recorded in surveys prior to 2011 (2.8 ± 0.05 for *D. masonii* and 1.9 ± 0.03 for *L. gibsonii* in 2011). This may be due to different interpretations of the health scale by new surveyors from 2013 onwards and/or differences in survey timing. Overall, 2022 health data do not suggest that plants of either species are unusually stressed or have been subject to adverse impacts from mining operations.

5.3 Indirect impacts from mining

Indirect impacts from mining include risks such as excessive dust deposition and weed invasion (DEC 2008a). No active mining has taken place on site in the 12 months leading up to the 2022 survey. Results for the 16-year monitoring period do not suggest that plants of either species have been indirectly impacted by mining (either through excessive dust deposition or weed invasion).

5.3.1 Dust deposition

As per the 2021 monitoring results, dust deposition was observed within the five *D. masonii* plots at Extension Hill in 2022 (Emerge Associates 2022). However, this monitoring location received the highest mean health score and recorded the highest mean height for mature *D. masonii* individuals. Dust deposition monitoring undertaken by MGM between December 2021 and November 2022 at a number of locations within the Extension Hill Hematite Operation, including one monitoring location within 500 m of the Extension Hill *D. masonii* plots, indicated that the approved trigger value for dust deposition (4 g/m^2/month) for the Extension Hill project was not exceeded at any location during the reporting period (MGM 2023). These results are consistent with those from the 2021 monitoring (Emerge Associates 2022). Dust deposition observed within the Extension Hill *D. masonii* plots is likely attributable to historical mining activities on site but represents dust deposition levels below approved trigger values which complies with standards adopted to ensure plant condition is not impacted.

No evidence of dust deposition was recorded within *L. gibsonii* monitoring plots.

5.3.2 Presence of weeds

A non-native (weed) species, **Pentameris airoides*, was recorded within a number of *D. masonii* plots at Mt Gibson North and Mt Gibson South and at a number of *L. gibsonii* plots at Iron Hill North. There are no statutory obligations to control this species. Additionally, and perhaps more importantly, cover for **P. airoides* is low and no impacts on *D. masonii* or *L. gibsonii* plants were observed as a result of its presence.

5.4 Additional threats (herbivory)

Evidence of grazing recorded during the 2022 survey does not suggest that plants of either species are unusually stressed. No grazing was observed on *D. masonii* individuals. Evidence of grazing was recorded at ten *L. gibsonii* plots during the 2022 survey. Evidence of grazing has increased slightly compared to that observed in 2021 with 4.0% of the total number of live plants found to have been

grazed in 2022 compared to 2.7% in 2021. However, this remains lower than that recorded in 2020 (5.2%). Overall, the grazing pressure observed was minor and does not represent an increasing threat.

6 Recommendations

6.1 Plot maintenance

To ensure all monitoring plots remain clearly marked for future surveyors, it is recommended that surveyors continue to reapply spray paint to demarcate the corners of plots as required.

Certain wire types connecting tags to *D. masonii* individuals rust over time and periodically require replacing. It is recommended that surveyors continue to replace wires on tags as required during future monitoring surveys. As per previous surveys, it is noted that some older tags have been attached to plants using plastic cable ties which rapidly degrade due to sun exposure. The use of plastic cable ties is not recommended.

6.2 Darwinia masonii

In some instances, newly recorded *D. masonii* seedlings have been identified using tags attached to rocks marked with pink flagging tape, as the seedlings were too small and delicate to have tags placed directly on their stems. It is recommended that in future years, should these seedlings survive, these tags be attached directly to the plants once these have reached an adequate size.

6.3 Lepidosperma gibsonii

Monitoring for *L. gibsonii* has not been conducted near the State Emu Proof Fence monitoring location (plot L25) since 2019. Less than 30 individuals remained alive at this location in 2019 and these plants displayed a different morphology to that of *L. gibsonii* individuals at other monitoring locations within the site. Moreover, the vegetation and geology surrounding plot L25 varies from the habitat in which this species is typically found within the site. It is recommended this plot continues to be excluded from future monitoring surveys.

All *L. gibsonii* plants within plot L17 have been confirmed dead. It is recommended this plot be monitored during the 2023 survey to establish whether new seedlings are present, indicating whether recruitment is occurring despite the absence of live mature individuals. MGM is meeting monitoring requirements in terms of number of plants monitored and, as such, there is no need to establish new monitoring plots for *L. gibsonii*.

7 Conclusions

Outcomes of the 2022 monitoring include the following:

- The threatened flora monitoring programme continues to satisfy requirements to monitor at least 715 individuals of *D. masonii* and *L. gibsonii.*
- The monitored populations of *D. masonii* and *L. gibsonii* appear to be stable and plant health remains consistent with the results from the 2021 survey. Observations from ongoing monitoring suggest that previous mining operations and rehabilitation activities at the Extension Hill Hematite Operation have not adversely impacted populations of either species.
- No apparent indirect impacts to either species from mining as a result of excessive dust deposition or weed invasion have been observed.
- No apparent impacts to the health or persistence of either species as a result of grazing by introduced or native animals have been observed.
- The 2022 results do not indicate any significant changes to populations of either species that would warrant additional investigation by MGM.

8 References

8.1 General references

Bureau of Meteorology (BoM) 2023, *Climate Data Online*, <http://www.bom.gov.au/climate/data/>.

Department of Conservation and Land Management (CALM) 2003, *A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002*, Perth, WA.

Department of Agriculture, Water and the Environment (DAWE) 2021, *Weeds of National Significance (WoNS)*, Centre for Invasive Species Solutions (CISS), <https://weeds.org.au/weeds-profiles/>.

Department of Biodiversity, Conservation and Attractions (DBCA) 2018, *Mason's Darwinia (Darwinia masonii) Recovery Plan. Wildlife Management Program No. 66*, Western Australia.

Department of Environment and Conservation (DEC) 2008a, *Lepidosperma gibsonii Interim Recovery Plan 2008-2012, Interim Recover Plan No. 283*, Western Australia.

Department of Environment and Conservation (DEC) 2008b, *Mason's Darwinia (Darwinia masonii) Interim Recovery Plan 2008-2012, Interim Recovery Plan No. 282*, Western Australia.

Emerge Associates 2022, *Annual Threatened Flora Monitoring 2021, Extension Hill Hematite Operation*, EP21-102(01)--002A ASF, Version A.

Environment Australia 2000, *Revision of the Interim Biogeographic Regionalisation for Australia (IBRA) and Development of Version 5.1 - Summary Report*, Department of Environment and Heritage.

Mount Gibson Mining Limited (MGM) 2023, *Compliance Assessment Report - Mt Gibson Range Mine Operations Iron Hill Deposits, December 2021 - December 2022*.

Mount Gibson Iron Ltd (MGX) 2015, *Site Work Instruction Vegetation Monitoring*. SWI 385.

Mount Gibson Iron Ltd and Extension Hill Pty Ltd (MGX and EHPL) 2014a, *Lepidosperma gibsonii Recovery Plan*.

Mount Gibson Iron Ltd and Extension Hill Pty Ltd (MGX and EHPL) 2014b, *Mason's Darwinia (Darwinia masonii) Recovery Plan*.

8.2 Online references

The online resources that have been utilised in the preparation of this report are referenced in **Section 8.1**, with access date information provided in **Table R 1**.

Table R 1: Access dates for online references

Reference	Date accessed	Website or dataset name
BoM (2023)	22 March 2023	Climate Data Online
DAWE (2021)	22 March 2023	Weeds of National Significance (WoNS)

Figures

Figure 1: Threatened Flora Monitoring Locations 2022

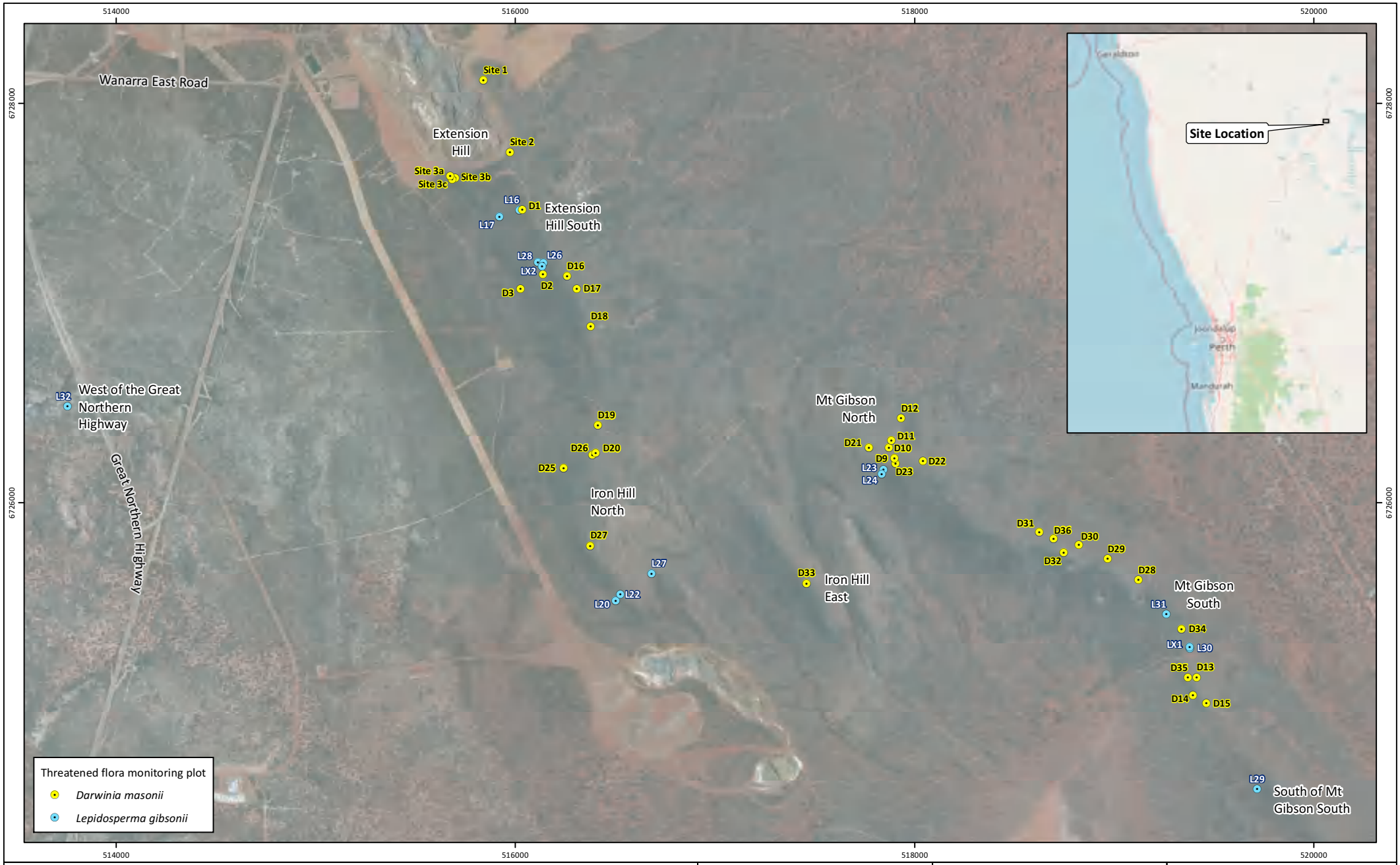

Figure 1: Threatened Flora Monitoring Locations 2022

Project:	Annual Threatened Flora Monitoring Extension Hill Hematite Operation
Client:	Mount Gibson Mining

Plan Number:
EP21-102(03)--F08

Drawn:	GAR
Date:	12/04/2023
Checked:	ASF
Approved:	RAW
Date:	30/05/2023

N

0 500 1,000
Metres

Scale: 1:25,000@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

Appendix A

Additional Background Information

Conservation Significant Flora

Threatened and priority flora

Flora species considered rare or under threat warrant special protection under Commonwealth and/or State legislation. At the Commonwealth level, flora species can be listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Flora species considered 'threatened' pursuant to Schedule 1 of the EPBC Act are assigned categories according to their conservation status, as outlined in **Table 1**.

In Western Australia, plant taxa may be classed as 'threatened' under the *Biodiversity Conservation Act 2016* (BC Act) which is enforced by the Department of Biodiversity Conservation and Attractions (DBCA). Threatened flora species are listed under sections 19(1) and 26(2) of the BC Act. It is an offence to 'take' or disturb threatened flora without Ministerial approval. Section 5(1)1 of the Act defines to take as including "… to gather, pluck, cut, pull up, destroy, dig up, remove, harvest or damage flora by any means" or to cause or permit the same to be done. The definition of threatened flora under the BC Act is provided in **Table 1**.

Section 43 of the BC Act requires that an occurrence of a threatened species or threatened ecological community is reported to DBCA where the occurrence has been identified as part of field work completed:

- as part of an assessment under Part IV of the *Environmental Protection Act 1986*; or
- in relation to an application for a clearing permit under the *Environmental Protection Act 1986* section 51E(1)(d).

Penalties apply to individuals and organisations that fail to provide accurate reports of threatened species or communities.

The *Biodiversity Conservation Regulations 2018* (BC Regulations 2018) came into effect on January 1 2019. The BC Regulations include provisions for licencing, charges, penalties and other provisions associated with the BC Act.

Flora species that may be threatened or near threatened but lack sufficient information to be listed under the BC Act may be added to the DBCA's *Priority Flora List* (DBCA 2022). Priority flora species are considered during State approval processes. Priority flora categories and definitions are listed in **Table 1**.

Table 1: Definitions of conservation significant flora species pursuant to the EPBC Act and BC Act and on DBCA's Priority Flora List (DBCA 2022)

Conservation code	Description
EX†	Threatened Flora – Presumed Extinct Taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such.
T^†	Threatened Flora – Extant Taxa which are declared to be likely to become extinct or is rare, or otherwise in need of special protection.
CR^	Threatened Flora – Critically Endangered Taxa which are considered to be facing an extremely high risk of extinction in the wild.
EN^	Threatened Flora – Endangered Taxa which are considered to be facing a very high risk of extinction in the wild.
VU^	Threatened Flora – Vulnerable Taxa which are considered to be facing a high risk of extinction in the wild.
P1	Priority One – Poorly Known Taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat e.g. road verges, urban areas, farmland, active mineral leases etc., or the plants are under threat, e.g. from disease, grazing by feral animals etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P2	Priority Two – Poorly Known Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but urgently need further survey.
P3	Priority Three – Poorly Known Taxa which are known from several populations, and the taxa are not believed to be under immediate threat (i.e. not currently endangered), either due to the number of known populations (generally >5), or known populations being large, and either widespread or protected. Such taxa are under consideration for declaration as 'rare flora' but needs further survey.
P4	Priority Four – Rare Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5-10 years.

^pursuant to the EPBC Act, †pursuant to the BC Act, on DBCA's *Priority Flora List*

Weeds

A number of legislative and policy documents exist in relation to weed management at state and national levels. The *Biosecurity and Agriculture Management Act 2007* (BAM Act) is the principal legislation guiding weed management in Western Australia and lists declared pest species. At a national level, the Australian government has compiled a list of 32 Weeds of National Significance (WoNS) (DAWE 2021) of which many are also listed under the BAM Act.

Declared Pests

Part 2.3.23 of the BAM Act requires a person must not; "*a) keep, breed or cultivate the declared pest; b) keep, breed or cultivate an animal, plant or other thing that is infected or infested with the declared pest; c) release into the environment the declared pest, or an animal, plant or other thing that is infected or infested with the declared pest; or d) intentionally infect or infest, or expose to infection or infestation, a plant, animal or other thing with a declared pest*".

Under the BAM Act, all declared pests are assigned a legal status, as described in **Table 2**. Species assigned to the 'declared pest, prohibited - s12' category are placed in one of three control categories, as described in **Table 3**.

The *Biosecurity and Agriculture Management Regulations 2013* specify keeping categories for species assigned to the 'declared pest - s22(2)' category, which relate to the purposes of which species can be kept, as well as the entities that can keep them. The categories are described in **Table 4**.

The Western Australian Organism List (WAOL) provides the status of organisms which have been categorised under the BAM Act (DPIRD 2023).

Table 2: Legal status of declared pest species listed under the BAM Act (DPIRD 2023)

Category	Description
Declared Pest Prohibited - s12	May only be imported and kept subject to permits. Permit conditions applicable to some species may only be appropriate or available to research organisations or similarly secure institutions.
Declared Pest s22(2)	Must satisfy any applicable import requirements when imported, and may be subject to an import permit if they are potential carriers of high-risk organisms. They may also be subject to control and keeping requirements once within Western Australia

Table 3: Control categories of declared pest species listed under the BAM Act (DPIRD 2023)

Category	Description
C1	Exclusion Not established in Western Australia and control measures are to be taken, including border checks, in order to prevent them entering and establishing in the State.
C2	Eradication Present in Western Australia in low enough numbers or in sufficiently limited areas that their eradication is still a possibility.

Table 3: Control categories of declared pest species listed under the BAM Act (continued)

Category	Description
C3	Management Established in Western Australia but it is feasible, or desirable, to manage them in order to limit their damage. Control measures can prevent a C3 pest from increasing in population size or density or moving from an area in which it is established into an area which currently is free of that pest.

Table 4: Keeping categories of declared pest species listed under the BAM Act (DPIRD 2023)

Category	Description
Prohibited	Can only be kept under a permit for public display and education purposes, and/or genuine scientific research, by entities approved by the state authority.
Exempt	No permit or conditions are required for keeping.
Restricted	Organisms which, relative to other species, have a low risk of becoming a problem for the environment, primary industry or public safety and can be kept under a permit by private individuals.

References

Department of Agriculture, Water and the Environment (DAWE) 2021, *Weeds of National Significance (WoNS)*, Centre for Invasive Species Solutions (CISS), <https://weeds.org.au/weeds-profiles/>.

Department of Biodiversity, Conservation and Attractions (DBCA) 2022, *Threatened and Priority Flora List 6 October 2022*, Perth.

Department of Primary Industries and Regional Development (DPIRD) 2023, *Western Australian Organism List*, Perth, WA, <https://www.agric.wa.gov.au/organisms>.

Appendix B

Photographic monitoring of *Darwinia masonii* plots, November 2022

Plate 1: Plot D1 NW corner, November 2022

Plate 2: Plot D2 NW corner, November 2022

Plate 3: Plot D3 NW corner, November 2022

Plate 4: Plot D9 NW corner, November 2022

Plate 5: Plot D10 NW corner, November 2022

Plate 6: Plot D11 NW corner, November 2022

Plate 7: Plot D12 NW corner, November 2022

Plate 8: Plot D13 NW corner, November 2022

Plate 9: Plot D14 NW corner, November 2022

Plate 10: Plot D15 NW corner, November 2022

Plate 11: Plot D16 NW corner, November 2022

Plate 12: Plot D17 NW corner, November 2022

Plate 13: Plot D18 NW corner, November 2022

Plate 14: Plot D19 NW corner, November 2022

Plate 15: Plot D20 NW corner, November 2022

Plate 16: Plot D21 NW corner, November 2022

Plate 17: Plot D22 NW corner, November 2022

Plate 18: Plot D23 NW corner, November 2022

Plate 19: Plot D25 NW corner, November 2022

Plate 20: Plot D26 NW corner, November 2022

Plate 21: Plot D27 NW corner, November 2022

Plate 22: Plot D28 NW corner, November 2022

Plate 23: Plot D29 NW corner, November 2022

Plate 24: Plot D30 NW corner, November 2022

Plate 25: Plot D31 NW corner, November 2022

Plate 26: Plot D32 NW corner, November 2022

Plate 27: Plot D33 NW corner, November 2022

Plate 28: Plot D34 NW corner, November 2022

Plate 29: Plot D35 NW corner, November 2022

Plate 30: Plot D36 NW corner, November 2022

Plate 31: Plot Site 1 NW corner, November 2022

Plate 32: Plot Site 2 NW corner, November 2022

Plate 33: Plot Site 3a NW corner, November 2022

Plate 34: Plot Site 3b NW corner, November 2022

Plate 35: Plot Site 3c NW corner, November 2022

Appendix C

Darwinia masonii monitoring plot descriptions

Darwinia masonii monitoring plot descriptions
Extension Hill Hematite Operation

Plot ID	Date	Time	Grazing	Dust	Weeds	Maintenance	General Description
D1	22/11/2022	13:40	No	No	No	No	Poor condition. Minor native creeper cover.
D2	21/11/2022	15:20	No	No	No	No	Moderate to poor condition, no signs of disturbance but plants are quite spindly.
D3	21/11/2022	16:00	No	No	No	No	Moderate condition. Native creeper present.
D9	24/11/2022	7:15	No	No	No	No	Moderate to poor condition. Native creeper present.
D10	24/11/2022	7:15	No	No	No	Yes - flagging tape applied to corners	Moderate condition. Native creeper present (dead).
D11	24/11/2022	8:00	No	No	Yes - *Pentameris airoides*	Yes - flagging tape applied to corners	Moderate to good condition.
D12	24/11/2022	9:00	No	No	Yes - *Pentameris airoides*	Yes - one tag reapplied, corners marked	Moderate condition. Extensive native creeper cover.
D13	25/11/2022	6:40	No	No	No	Yes - flagging tape applied to NW corner	Moderate condition.
D14	25/11/2022	7:50	No	No	Yes - *Pentameris airoides*	No	Moderate condition.
D15	25/11/2022	8:00	No	No	No	Yes - flagging tape applied to seedling tag	Moderate condition. Minor areas of native creeper growth.
D16	22/11/2022	7:45	No	No	No	No	Moderate to poor condition, heavy disturbance from grey fines in centre of plot. Extensive native creeper cover in some areas.
D17	21/11/2022	16:00	No	No	No	No	Moderate condition. Native creeper present. Broken glass bottle along northern boundary.
D18	21/11/2022	15:30	No	No	No	No	Moderate condition. Native creeper present.
D19	23/11/2022	7:00	No	No	No	No	Moderate condition. Native creeper present.
D20	23/11/2022	7:10	No	No	No	No	Moderate condition. Plot long rather than square (north-south orientation).
D21	24/11/2022	10:50	No	No	Yes - *Pentameris airoides*	Yes - flagging tape applied to corners	Moderate to poor condition. Native creeper present (minimal).
D22	24/11/2022	9:00	No	No	No	Yes - two new tags attached, two tags reattached	Moderate condition. Photo taken next to NW corner as view of quadrat is blocked by a shrub.

Plot ID	Date	Time	Grazing	Dust	Weeds	Maintenance	General Description
D23	24/11/2022	8:00	No	No	No	No	Moderate to poor condition. Native creeper present.
D25	23/11/2022	8:30	No	No	No	No	Moderate condition. Native creeper present (minimal).
D26	23/11/2022	7:30	No	No	No	No	Moderate to poor condition.
D27	23/11/2022	10:00	No	No	No	Yes - tag reattached	Moderate condition.
D28	25/11/2022	1:15	No	No	Yes - *Pentameris airoides*	Yes - flagging tape applied to corners and above seedling	Moderate to poor condition.
D29	25/11/2022	2:00	No	No	Yes - *Pentameris airoides*	Yes - flagging tape applied to seedling tag, replaced copper wire	Moderate to poor condition. Native creeper present (minimal).
D30	25/11/2022	14:00	No	No	Yes - *Pentameris airoides*	No	Moderate to poor condition. One new seedling found, tagged and flagged.
D31	25/11/2022	15:00	No	No	Yes - *Pentameris airoides*	No	Moderate condition.
D32	25/11/2022	14:30	No	No	Yes - *Pentameris airoides*	No	Moderate condition.
D33	24/11/2022	15:50	No	No	No	Yes - flagging tape applied to corners	Moderate to poor condition. Native creeper present.
D34	25/11/2022	11:30	No	No	No	Yes - flagging tape applied to tag 2060 (individual quite prostrate and hidden)	Moderate condition. Minor native creeper cover.
D35	25/11/2022	7:10	No	No	Yes - *Pentameris airoides*	No	Moderate condition. One mature plant recently died.
D36	25/11/2022	3:30	No	No	Yes - *Pentameris airoides*	No	Moderate condition. Native creeper present.
Site 1	22/11/2022	14:00	No	Yes	No	Yes - two tags ripped, replaced with new tags	Moderate to good condition. Native creeper present (minimal). Signs of historical dust disturbance but no recent evidence of dust (dust observed on stems but not on leaves).
Site 2	22/11/2022	15:30	No	Yes	No	No	Moderate condition. Native creeper present (growing over some of the *Darwinia* plants). Signs of historical dust disturbance but no recent evidence of dust (dust observed on stems but not on leaves).

Plot ID	Date	Time	Grazing	Dust	Weeds	Maintenance	General Description
Site 3a	22/11/2022	16:15	No	Yes	No	Yes - flagging tape applied to corners	Moderate condition. Native creeper present (growing over some of the *Darwinia* plants). Signs of historical dust disturbance but no recent evidence of dust (dust observed on stems but not on leaves).
Site 3b	22/11/2022	15:30	No	Yes	No	Yes - flagging tape applied to corners	Moderate condition. Native creeper present (minimal). Signs of historical dust disturbance but no recent evidence of dust (dust observed on stems but not on leaves).
Site 3c	22/11/2022	15:50	No	Yes	No	Yes - flagging tape applied to corners	Moderate to good condition. Signs of historical dust disturbance but no recent evidence of dust (dust observed on stems but not on leaves).

Appendix D

Photographic monitoring of *Lepidosperma gibsonii* plots, November 2022

Photographic monitoring of Lepidosperma gibsonii plots, November 2022

Plate 1: Plot L16 NW corner, November 2022

Plate 2: Plot L17 NW corner, November 2022

Plate 3: Plot L20 NW corner, November 2022

Plate 4: Plot L22 NW corner, November 2022

Plate 5: Plot L23 NW corner, November 2022

Plate 6: Plot L24 NW corner, November 2022

Plate 7: Plot L26 NW corner, November 2022

Plate 8: Plot L27 NW corner, November 2022

Plate 9: Plot L28 NW corner, November 2022

Plate 10: Plot L29 NW corner, November 2022

Plate 11: Plot L30 NW corner, November 2022

Plate 12: Plot L31 NW corner, November 2022

Plate 13: Plot L32 NW corner, November 2022

Plate 14: Plot LX1 NW corner, November 2022

Plate 15: Plot LX2 NW corner, November 2022

Appendix E

Lepidosperma gibsonii monitoring plot descriptions

Lepidosperma gibsonii monitoring plot descriptions
Extension Hill Hematite Operation

Plot ID	Date	Time	Grazing	Dust	Weeds	Maintenance	General Description
L16	22/11/2022	14:00	No	No	No	No	Moderate condition.
L17	22/11/2022	14:30	No	No	No	No	No live plants.
L20	23/11/2022	15:45	Yes	No	Yes - *Pentameris airoides*	No	Moderate to good condition. Shrubs in NW corner have fallen over three individuals, but these still appear unaffected. Photo taken next to NW corner to show remainder of the plot. Large amounts of native creeper present, but not on *Lepidosperma* plants.
L22	23/11/2022	16:15	Yes	No	Yes - *Pentameris airoides*	No	Moderate to good condition. Native creeper present, mainly over shrubs with some present on *Lepidosperma* plants.
L23	24/11/2022	11:50	Yes	No	No	No	Moderate condition. Minimal grazing observed. Heavy vegetation growing/collapsed over plants along eastern boundary.
L24	24/11/2022	12:30	Yes	No	No	Yes - reattached tag	Moderate condition. Minimal grazing observed.
L26	22/11/2022	9:15	No	No	No	No	Moderate condition.
L27	23/11/2022	13:00	Yes	No	Yes - *Pentameris airoides*	Yes - three tags reattached to new pins	Moderate condition. Slight grazing observed. Minor native creeper growth.
L28	22/11/2022	9:45	yes	No	No	No	Moderate to poor condition. Potential slight grazing.
L29	25/11/2022	7:00	Yes	No	No	Yes - five loose tags repositioned	Moderate condition. A number of plants have been grazed. A number of tags were found loose but were matched to live plants.
L30	25/11/2022	9:30	No	No	No	Yes - six loose tags repositioned	Moderate to good condition. Native creeper present (minimal). A number of tags were found loose but were matched to live plants.
L31	25/11/2022	10:50	No	No	No	Yes - two loose tags repositioned	Moderate condition. Several plants without inflorescences. A number of tags were found loose but were matched to live plants.
L32	26/11/2022	7:00	Yes	No	No	Yes - four loose tags repositioned	Moderate to good condition. Most plants scored 1 for health because of yellowing, otherwise these plants appear healthy. Grazing noted on one plant. A number of tags were found loose but were matched to live plants.
LX1	25/11/2022	9:50	Yes	No	No	No	Moderate condition. Minor native creeper cover.
LX2	22/11/2022	11:20	Yes	No	No	No	Moderate condition.

APPENDIX F

NDVI Assessment of Vegetation at Extension Hill and Iron Hill

Hydrobiology

EXTENSION HILL AND IRON HILL NDVI ANALYSIS 2016-2022

MOUNT GIBSON IRON (MGX)

P21021
VERSION 3.0
—
12/10/2021

THIS COMPANY IS REGISTERED FOR GST.

STREET
25 Southport Street
West Leederville 6007
WESTERN AUSTRALIA

REGISTERED
c/- de Blonk Smith and Young Accountants
GPO 119, Brisbane 4001
QUEENSLAND

POSTAL
PO Box 1034
West Leederville 6901
WESTERN AUSTRALIA

CONTACT
+61 (0)8 6218 0900 P
info@hydrobiology.com

ABN 68 120 964 650

www.hydrobiology.com

DOCUMENT CONTROL INFORMATION

DATE PRINTED	JOB NUMBER	REPORT NUMBER
12/10/2022	P21021	Version 3.0

PROJECT TITLE	Extension Hill and Iron Hill NDVI Analysis 2016-2022
PROJECT SUBTITLE	Mount Gibson Iron (MGX)
PROJECT MANAGER	James Keating
FILENAME	MGX P21021 NDVI EH and IH NDVI analysis - October 2022 v3.0

STATUS	ORIGINATOR/S	REVIEWED	AUTHORISED	DATE
Version 1.0	Ross Gillis	James Keating	James Keating	23/09/2021
Version 1.1	James Keating	James Keating Troy Collie (MGX)	James Keating	27/09/2021
Version 2.0	Ross Gillis	James Keating	James Keating	29/09/2021
Version 3.0	James Keating	James Keating	James Keating	12/10/2022

DISTRIBUTION

FILENAME	DESCRIPTION	ISSUED TO	ISSUED BY
MGX P21010 EH and IH NDVI analysis – September 2021 v1.0	Version 1.0 for internal review.	James Keating	James Keating
MGX P21010 EH and IH NDVI analysis – September 2021 v1.1	Version 1.1 to client.	Benjamin O'Grady Troy Collie	James Keating
MGX P21010 EH and IH NDVI analysis – September 2021 v2.0	Version 2.0 to client.	Benjamin O'Grady Troy Collie	James Keating
MGX P21021 NDVI EH and IH NDVI analysis - October 2022 v3.0	Version 3.0 to client.	Benjamin O'Grady Troy Collie David Temple-Smith	James Keating

EXECUTIVE SUMMARY

Hydrobiology has been requested by Mount Gibson Iron (MGX) to conduct a desktop Remote Sensing analysis of vegetation quality at their Extension Hill (EH) and Iron Hill (IH) operations in Western Australia. Mining operations at EH main pit concluded in November 2016 and at IH pits in January 2019 and a program of rehabilitation has been underway across both sites over this period of time[1].

The objective of this analysis was to,

- assess vegetation rehabilitation progress at Extension Hill and Iron Hill and,
- investigate the potential effect of dusting on vegetation at Iron Hill during mining operations.

Sentinel-2 multispectral satellite imagery was acquired on a monthly basis from January 2016 to October 2022 to capture any potential changes in vegetation quality at reference and test sites. The assessment was based on the Normalized Difference Vegetation Index (NDVI), an indicator of vegetation quality that provides a reliable and consistent measure of chlorophyll content.

The results of the assessment can be summarised as follows:

- **Rehabilitation of vegetation at the Extension Hill waste rock landform (WRL) progressed steadily in the period under assessment. A substantial increase in vegetation cover and quality was observed in mid-2021. This can be attributed to above-average rainfall in the region.**
- **No dusting-related effects to vegetation were observed at Iron Hill Test Site during the development of the mine and during operational conditions at this site.**

1 Following the cessation of production from the EH and IH pits, additional low-grade reprocessing of material at sections of the Waste Rock Landforms (WRLs) and detrital gravels was conducted into 2020.

- **Rehabilitation at the EH WRL and Test site since October 2021 is expected to meet the long-term average reference NDVI within the next few month (NDVI = 0.266).**
- **Rehabilitation at the IH WRL and Test site since October 2019 has already exceeded the long-term average reference NDVI (NDVI = 0.225)**

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1. METHODS

1.1 MULTISPECTRAL SATELLITE IMAGERY.

Sentinel-2 satellite imagery was used in this assessment and was acquired from the European Space Agency (ESA) Copernicus Open Access Hub using the Semi-Automatic Classification Plugin (Congedo, 2016; version 6.2.9) in QGIS (QGIS Development Team, 2020; version 3.12.1) and using the Sentinel Hub web tool from September 2021 to October 2022. Sentinel-2 acquires data using 2 satellites (S2A & S2B; Table 1) at least once every 5-day period.

The most useful bands in the Sentinel-2 product for vegetation analysis, red and near infra-red, are acquired with a 10 metre (m) resolution. This is appropriate to the size of the vegetation areas being assessed and its temporal resolution allowed for one set of multispectral imagery to be analysed each month from January 2016 to October 2022.

Given that multispectral imagery for the Sentinel-2 tile relevant to the study area is acquired at least once every 5 days, one image was selected per month based on the following criteria (Table 2, Sentinel- 2 tile 50JNN; Figure 1);

1. Lowest cloud cover percentage (or partially obscured image that had no clouds over study area)
2. Closest to middle of month to ensure approximately equal time-periods between images

Table 1 - Sentinel-2 spectral bands used in NDVI

	Red wavelength (nm)	NIR wavelength (nm)	Resolution (m)
Sentinel-2 A (S2A)	664.6	832.8	10 x 10
Sentinel-2 B (S2B)	664.9	832.9	10 x 10

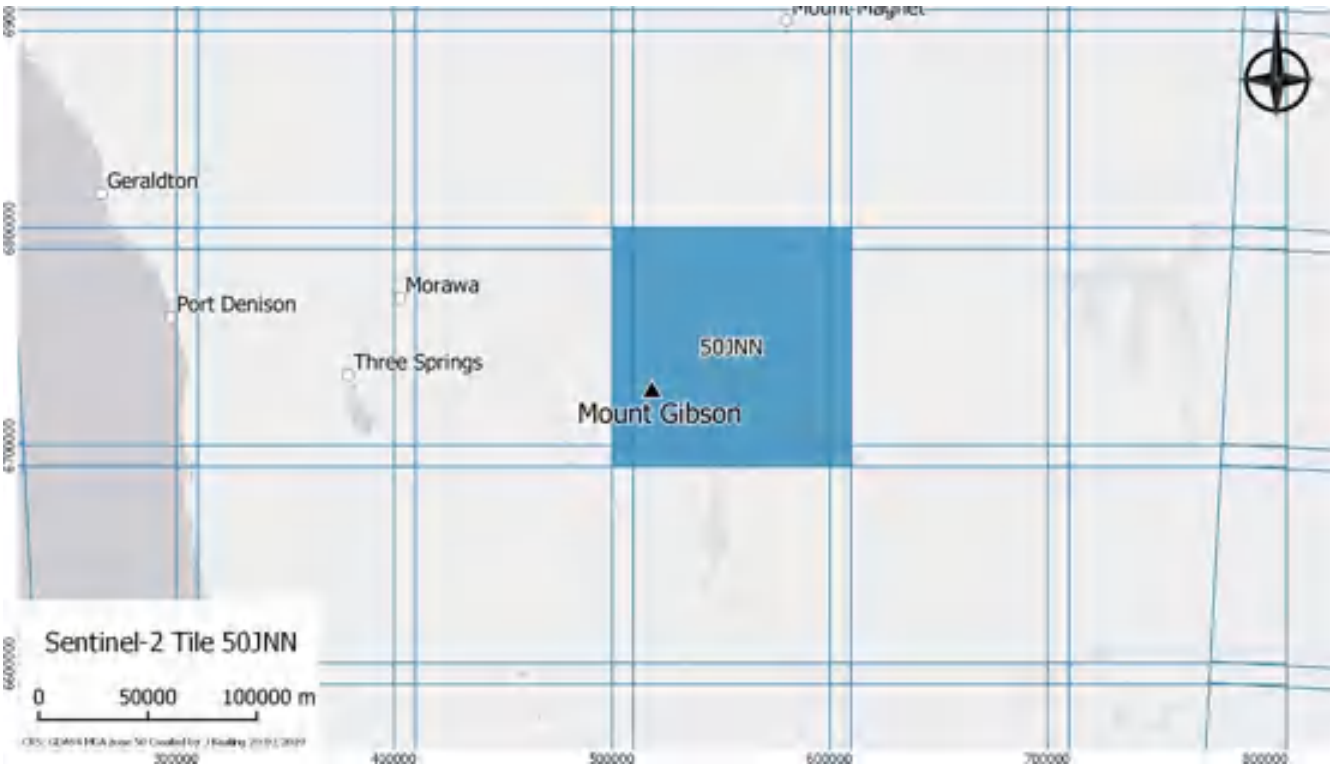

Figure 1 - Location and coverage of Sentinel-2 Tile 50JNN used in this assessment.

1.2 SENTINEL-2 POST-PROCESSING

The imagery product used in this assessment was Level-1C, which is processed using a Digital Elevation Model to precisely project the image geometry to the ground. Radiometric measurements are provided in Top of Atmosphere (TOA) reflectance's along with the parameters to transform them into radiance, which is then used in the analysis.

Table 2 - Sentinel-2 satellite imagery acquisition summary.

Date	Satellite	Cloud (%)	Date	Satellite	Cloud Cover	Date	Satellite	Cloud Cover
2016-01-03	S2A	0.00 %	2017-11-20	S2A	0.00 %	**2019**-09-14	S2A	0.02 %
2016-02-02	S2A	0.00 %	2017-12-25	S2B	0.00 %	**2019**-10-21	S2A	0.03 %
2016-03-20	S2A	1.21 %	**2018**-01-12	S2A	0.08 %	**2019**-11-13	S2A	0.00 %
2016-04-02	S2A	54.89 %[1]	**2018**-02-13	S2B	0.04 %	**2019**-12-13	S2A	0.00 %
2016-05-09	S2A	0.00 %	**2018**-03-13	S2A	0.32 %	**2020**-01-22	S2A	0.00 %
2016-06-11	S2A	0.00 %	**2018**-04-17	S2B	0.07 %	**2020**-03-04	S2B	0.00 %
2016-07-01	S2A	0.54 %	**2018**-05-19	S2A	0.16 %	**2020**-03-22	S2A	0.00 %
2016-07-28	S2A	7.67 %[2]	**2018**-06-16	S2B	0.00 %	**2020**-04-21	S2A	0.00 %
2016-09-26	S2A	0.00 %	**2018**-07-11	S2A	0.00 %	**2020**-05-18	S2A	0.00 %
2016-10-16	S2A	0.05 %	**2018**-08-10	S2A	0.00 %	**2020**-06-17	S2A	0.00 %
2016-11-18	S2A	0.05 %	**2018**-09-29	S2A	0.00 %	**2020**-07-15	S2B	0.00 %
2016-12-15	S2A	0.00 %	**2018**-10-11	S2B	0.00 %	**2020**-08-24	S2B	0.00 %
2017-01-14	S2A	0.16 %	**2018**-11-18	S2A	2.29 %	**2020**-09-18	S2A	0.00 %
2017-02-16	S2A	1.19 %	**2018**-12-18	S2A	0.74 %	**2020**-10-23	S2B	0.00 %
2017-03-18	S2A	0.00 %	**2019**-01-19	S2B	0.24 %	**2020**-11-22	S2B	0.00 %
2017-04-07	S2A	0.94 %	**2019**-02-18	S2B	0.19 %	**2020**-12-17	S2A	0.00 %
2017-05-17	S2A	0.09 %	**2019**-03-18	S2A	0.27 %	**2021**-01-16	S2A	0.02 %
2017-06-26	S2A	0.00 %	**2019**-04-22	S2B	0.00 %	**2021**-02-12	S2A	0.00 %
2017-07-18	S2B	0.00 %	**2019**-05-19	S2B	0.03 %	**2021**-03-14	S2A	0.00 %
2017-08-25	S2A	0.00 %	**2019**-06-18	S2B	0.00 %	**2021**-04-21	S2B	0.00 %
2017-09-14	S2A	0.00 %	**2019**-07-16	S2A	0.00 %	**2021**-05-11	S2B	0.00 %
2017-10-19	S2B	0.00 %	**2019**-08-20	S2B	0.00 %	**2021**-06-15	S2A	0.00 %

Date	Satellite	Cloud (%)	Date	Satellite	Cloud Cover	Date	Satellite	Cloud Cover
2021-07-02	S2A	0.00 %	-	-	-	-	-	-
2021-08-14	S2A	0.00 %	-	-	-	-	-	-
2021-09-04	-	0.00 %	-	-	-	-	-	-
2021-10-13	-	0.00 %	-	-	-	-	-	-
2021-11-14	-	0.00 %	-	-	-	-	-	-
2021-12-17	-	0.00 %	-	-	-	-	-	-
2022-01-16	-	0.00 %	-	-	-	-	-	-
2022-02-17	-	0.00 %	-	-	-	-	-	-
2022-03-17	-	0.00 %	-	-	-	-	-	-
2022-04-16	-	0.00 %	-	-	-	-	-	-
2022-05-16	-	0.00 %	-	-	-	-	-	-
2022-06-15	-	0.00 %	-	-	-	-	-	-
2022-07-15	-	0.00 %	-	-	-	-	-	-
2022-08-14	-	0.00 %	-	-	-	-	-	-
2022-09-13	-	0.00 %	-	-	-	-	-	-
2022-10-08	-	0.00 %	-	-	-	-	-	-

[1] Heavy cloud cover in selected tile, however study area was clear.

[2] No cloud free imagery available for August 2016. Image from late July substituted instead.

1.3 NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI).

Normalized Difference Vegetation Index (NDVI) is an accepted proxy for quantifying vegetative health through a measurement of the photosynthetic functions of plants (Santin-Janin ***et al.***, 2009). The NDVI is calculated by measuring the difference between near-infrared (NIR) light (which vegetation strongly reflects) and red light (which vegetation absorbs). The NDVI equation (as described in Barron ***et al.***, 2014) is shown below;

$$NDVI = \frac{NIR - Red}{NIR + Red}$$

The index itself was constructed from the Sentinel-2 satellite bands 4 (Red) and 8 (NIR) using the raster calculator in QGIS. The resolution of the resulting NDVI raster layer matched that of the original imagery

(i.e. each pixel measures 10 m x 10 m on the ground). NDVI for each month between January 2016 and October 2022 was calculated and clipped to the EH and IH study areas. The resulting indices ranges from -1 to +1. The higher the value, the greener the vegetation is. Lower values indicate low reflectance. This may be caused by poor vegetation quality or areas that have been cleared.

NDVI rasters were imported into R for further analysis (R Development Core Team, 2018). Median NDVI values were extracted for each study area polygon over the period of time under assessment using the Zonal Statistics Tool within QGIS, and using the Sentinel Hub web tool from September 2021 – October 2022. Median was chosen as a representative statistic for this assessment as it is less influenced by outliers.

1.3.1 NDVI LIMITATIONS

NDVI is not a direct measurement of vegetation however strong relationships between in-situ measurements on the ground with satellite derived indices are common in the literature (Higginbottom and Symeonakis, 2014). That said, the application of NDVI to sparsely vegetated areas (typical NDVI values of < 0.1) can be compromised by the soils reflectance signature that can influence or obscure true NDVI values (Higginbottom and Symeonakis, 2014). Another factor to acknowledge when using NDVI is that much of the surrounding area is dusted naturally during the dry season. Also, the anisotropy of the target surface has the potential to reflect light differently and at different angles. The caveats discussed here have been noted but are not addressed in this assessment.

1.4 STUDY AREA

The Extension Hill/Iron Hill study area is shown in Figure 2. NDVI was assessed at the waste rock landform (WRL), vegetation rehabilitation sites (Test) and unimpacted reference sites (Reference).

The sampling design was constructed as follows;

- assess vegetation rehabilitation progress at Extension Hill and Iron Hill and,
- investigate the potential effect of dusting on vegetation at Iron Hill during mining operations.

1.4.1 KEY OPERATIONAL DATES

The following key operational dates are noted for the study area.

- Iron Hill pits production commenced – January 2017
- Iron Hill pits production ceased – January 2019
- Extension Hill and Iron Hill low grade ore processing commenced – May 2019
- Extension Hill and Iron Hill low grade ore processing ceased – September 2020
- Extension Hill detrital gravels production commenced August 2020
- Extension Hill detrital gravels production ceased December 2020.
- Rehab typically occurred for about a month around the time that each production phase was completed.

1.4.2 ASSIGNMENT OF TARGETED SITES

Target sites were assigned as follows:

1.4.2.1 EXTENSION HILL

- The Test site is an area on the first WRL and outer batter slope completed under rehabilitation in 2016.
- The WRL site is the celled flat top of the waste rock dump with final earthworks performed in 2018.
- The Reference site is an area of same size, shape and mapped floristic community type (FCT) as the Test and WRL sites. Its inclusion is to compare to the rehab sites (Test and WRL) and to show seasonal and interannual variability in NDVI traces naturally.

1.4.2.2 IRON HILL

- The WRL site is the whole area on the WRL, rehabilitated in 2019.
- The Test site is an undeveloped area within the IH development envelope directly adjacent to mining operational areas and was potentially subject to indirect effects.
- The Reference site is an area of the same size, shape and mapped FCT as the Test and WRL sites.

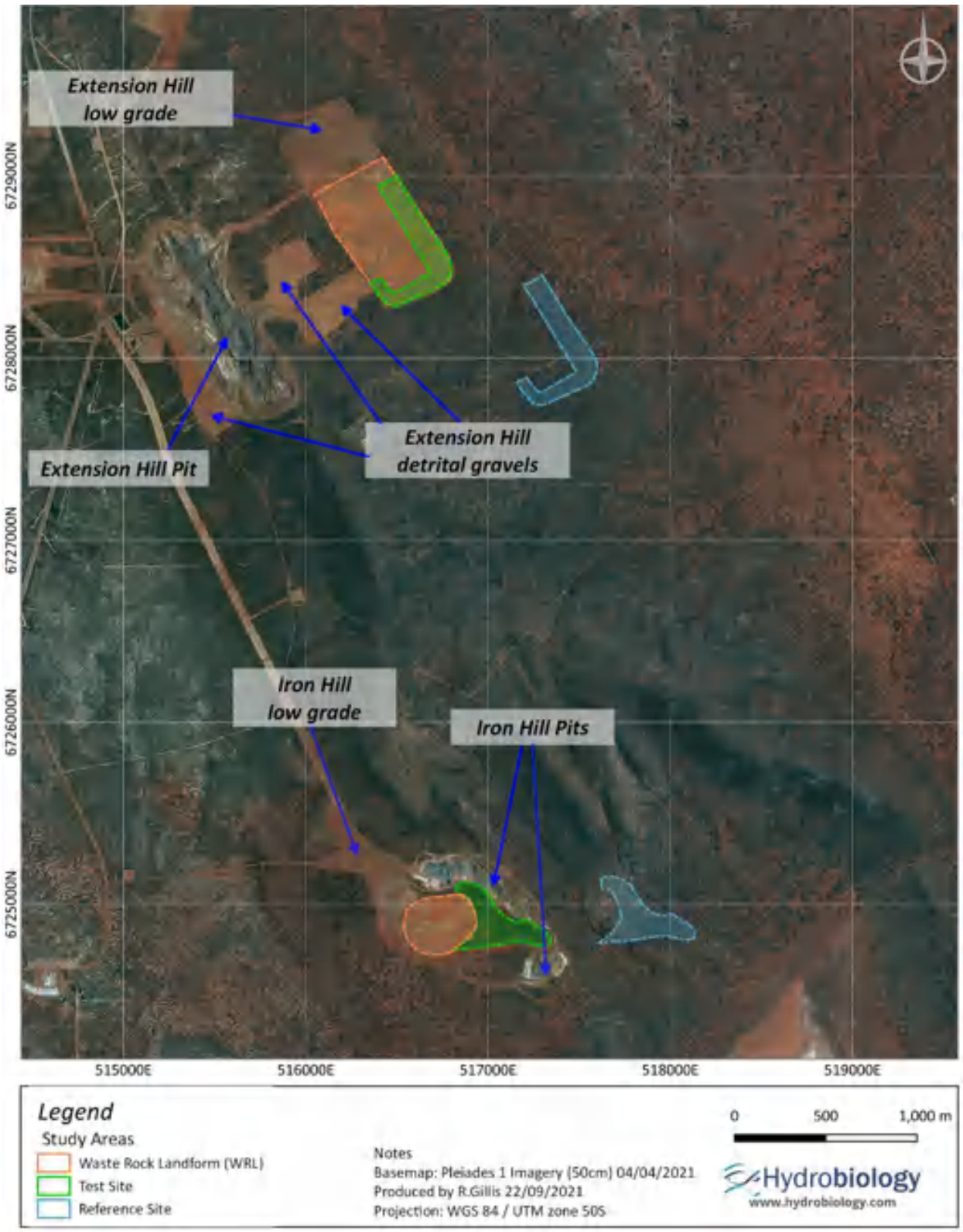

Figure 2 - Overview of Extension Hill and Iron Hill mine sites. Waste rock landform, test and reference sites are depicted by the dashed lines.

1.5 RAINFALL

Total rainfall per month has been calculated from data recorded at the on-site weather station, or the Dalwallinu Bureau of Meteorology statistics (Figure 3). Above average rainfall in 2021 is attributed to unseasonal conditions and following Severe Tropical Cyclone (TC) Seroja[2].

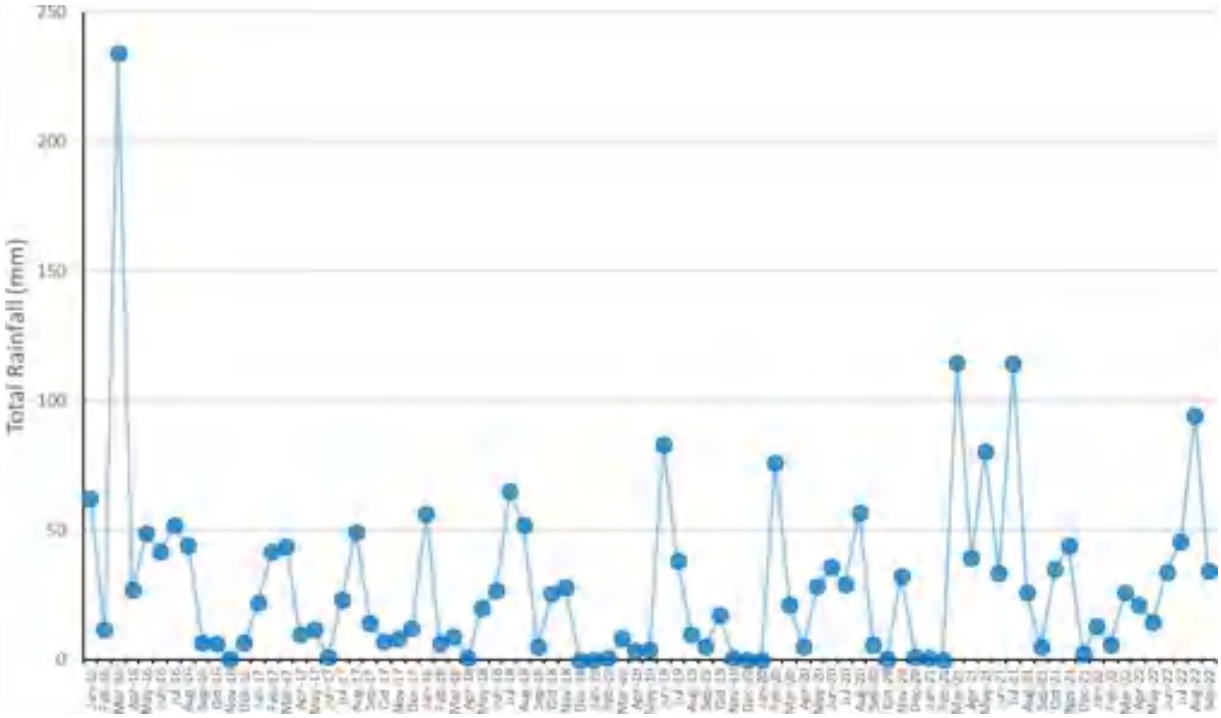

Figure 3 – Total monthly rainfall (mm) observed at Extension Hill/Iron Hill.

2 TC Seroja impact Western Australia's Mid-West region in April 2021.

2. RESULTS

2.1 EXTENSION HILL STUDY AREA

NDVI results at Extension Hill are presented in Figure 4 and raw data (per month) in Appendix A. The increase in vegetative quality and progression of rehabilitation programs from late-July 2016 to August 2021 can be seen in Figure 5.

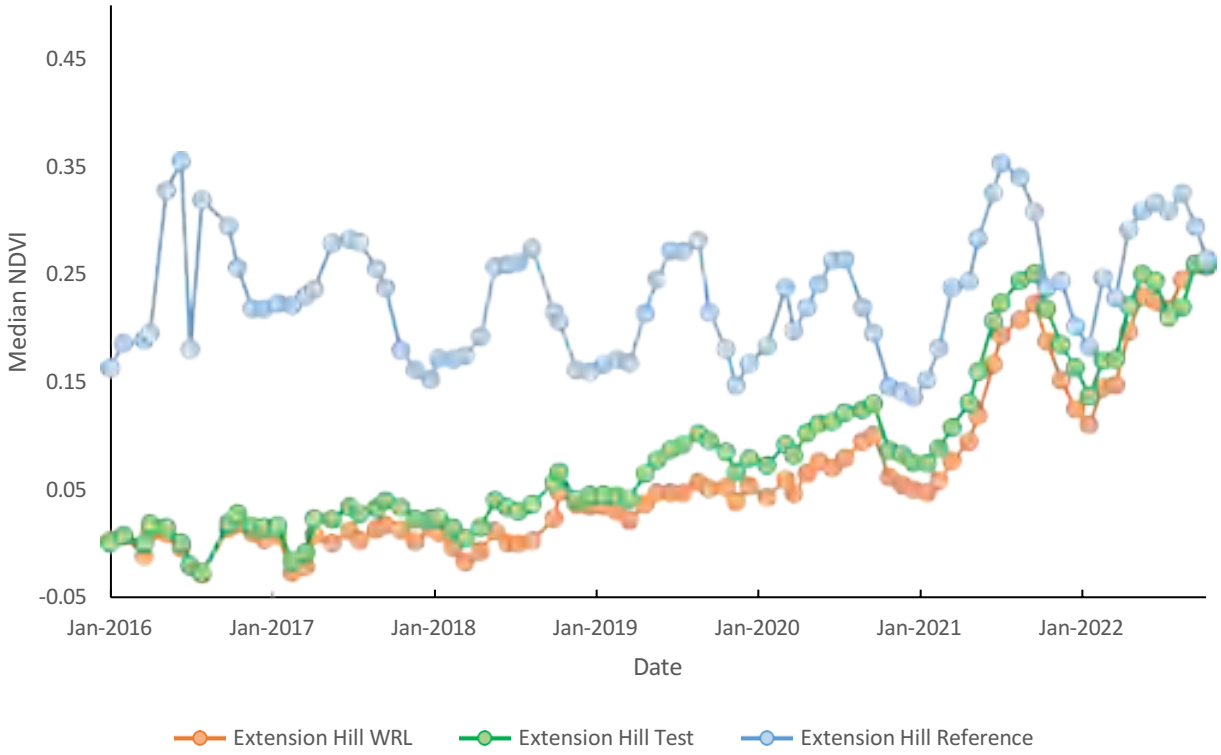

Figure 4 - Extension Hill (EH) median NDVI results over time for the Waste Rock Landform (WRL), Test and Reference sites.

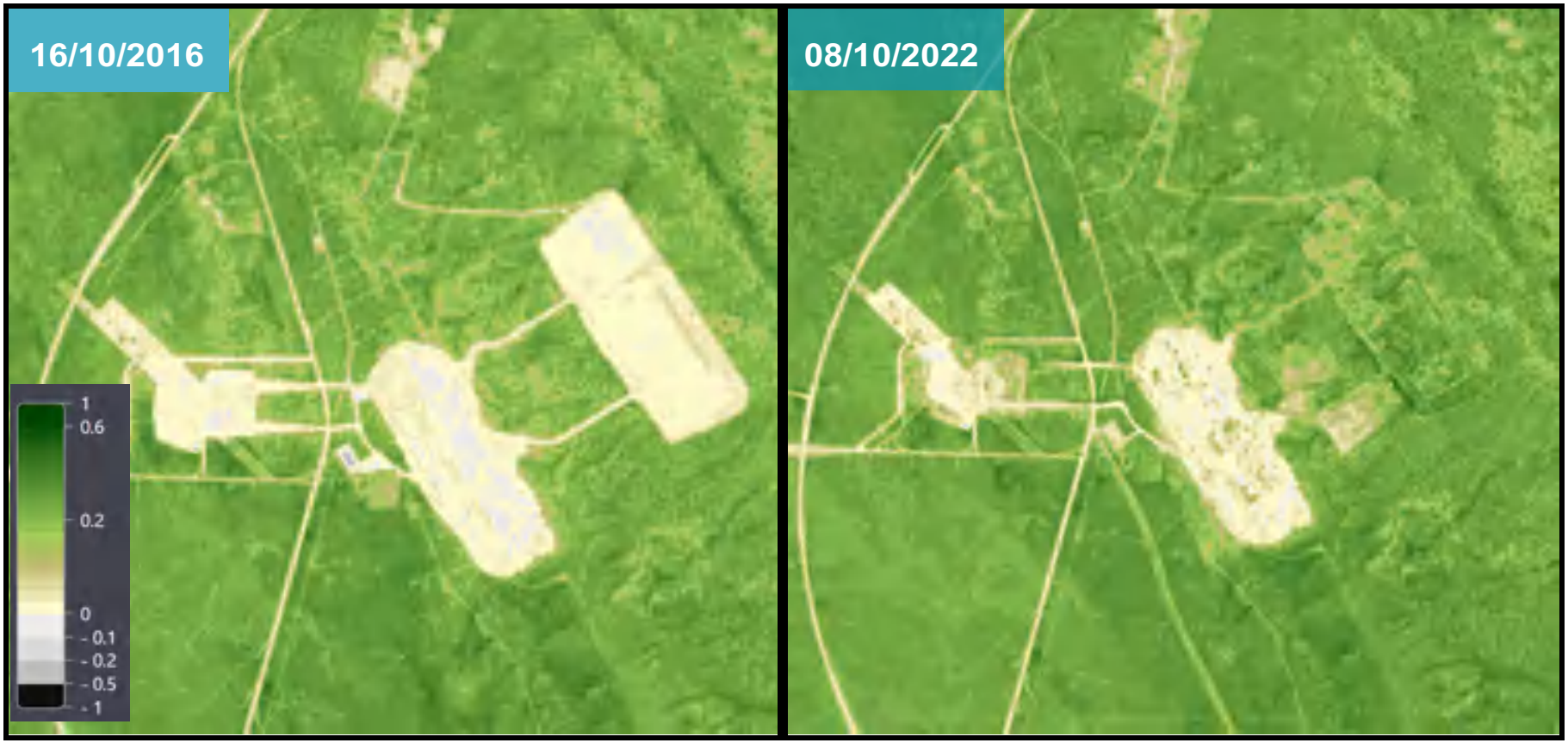

Figure 5 Comparison of vegetative quality (NDVI) in October of 2016 and 2022 at the Extension Hill study area.

2.2 IRON HILL STUDY AREA

NDVI results at Iron Hill are presented in Figure 6 and raw data (per month) in Appendix A. The development of mining operations at Iron Hill from late-July 2016 can be seen in Figure 7.

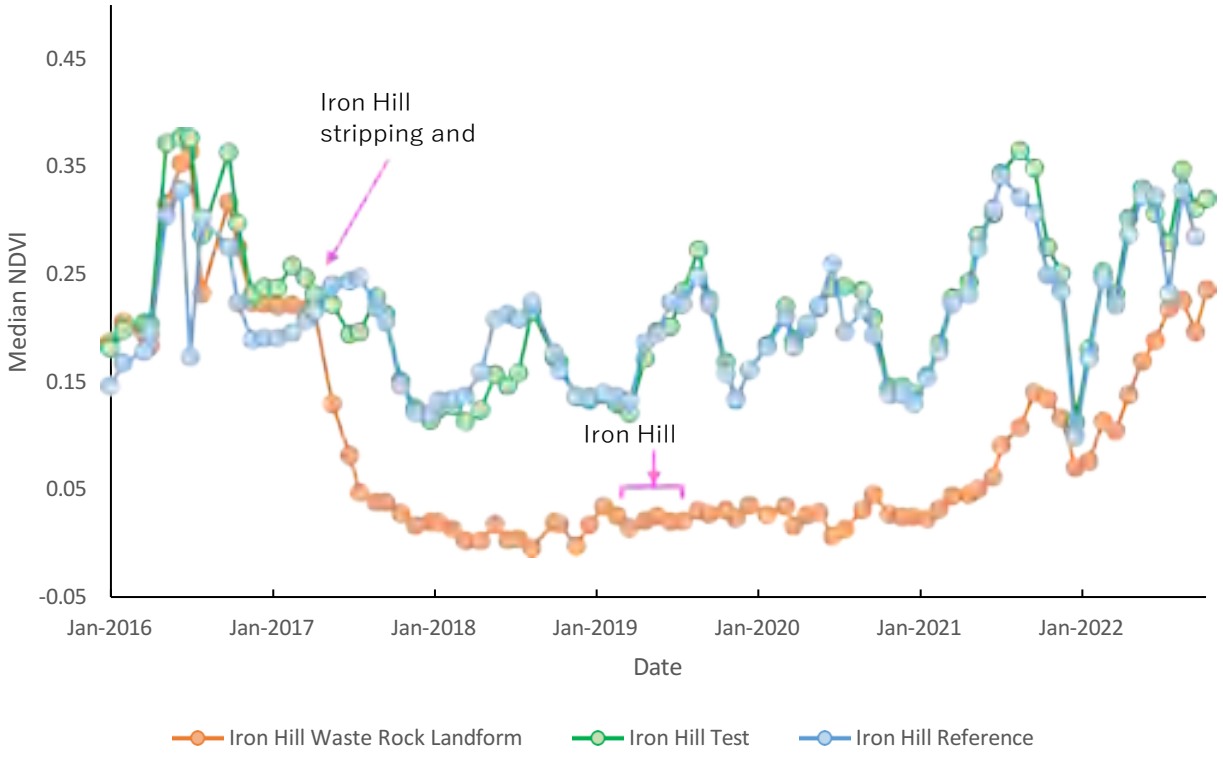

Figure 6 - Iron Hill (IH) median NDVI results over time for the Waste Rock Landform (WRL), Test and Reference sites.

Figure 7 Comparison of vegetative quality (NDVI) in October of 2016 and 2022 at the Iron Hill study area.

3. CONCLUSIONS

3.1 EXTENSION HILL STUDY AREA

Rehabilitation of vegetation at the Extension Hill waste rock landform progressed steadily in the period under assessment. A substantial increase in vegetation cover and quality was observed in mid-2021. This can be attributed to above-average rainfall in the region.

Considering that rehabilitation commenced from January 2021, both the Waste Rock Landform, and the Test sites have shown considerable revegetation over the past 12 months (Table 3). This is in exceedance of reference conditions at EH, which is indicative of a successful rehabilitation program.

Based on a simple linear regression, rehabilitation at the EH WRL and EH Test is forecasted to meet the average NDVI at the reference site within the next 2 - 3 months (0.266, October 2021 – October 2022). Note that this regression does not consider seasonal variability, or other factors such as rainfall (Figure 8, Figure 9).

Table 3 Percentage change in median NDVI observations at WRL, test and reference sites.

	EH WRL	EH Test	EH Reference
October 2021	0.188	0.218	0.238
October 2022	0.257	0.259	0.265
Percentage Change	37 %	19 %	11 %

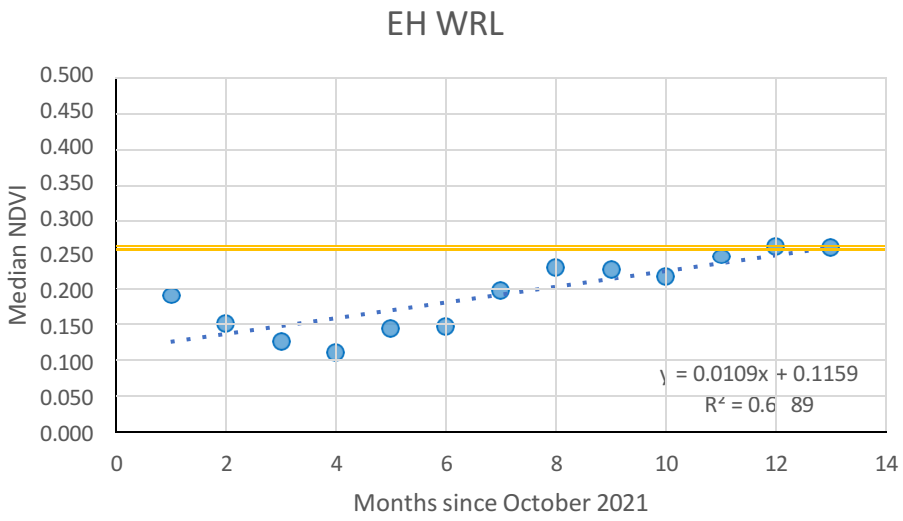

Figure 8 - Linear regression (blue dotted line) for monthly median NDVI at EH WRL (blue points) and average NDVI at the reference site over the same period of time (orange dashed line, October 2021 – October 2022).

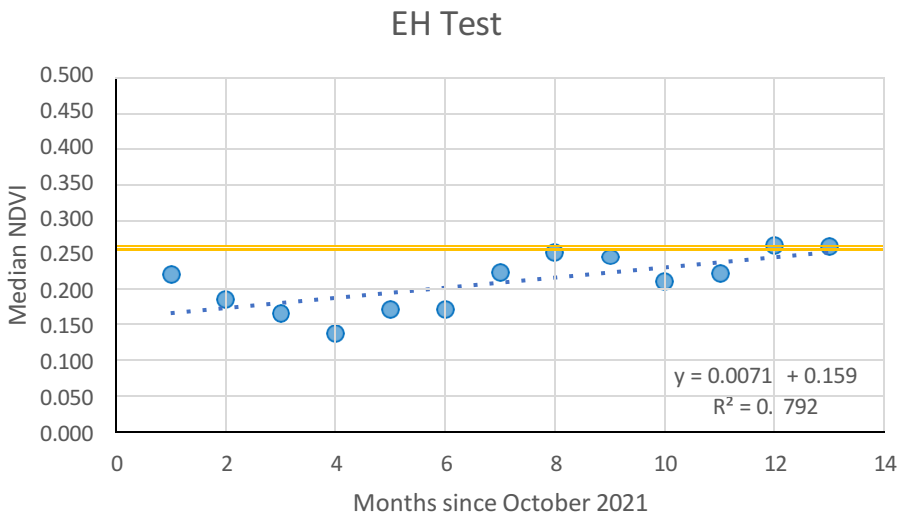

Figure 9 - Linear regression (blue dotted line) for monthly median NDVI at EH Test (blue points) and average NDVI at the reference site over the same period of time (orange dashed line, October 2021 – October 2022).

3.2 IRON HILL STUDY AREA

No dusting-related indirect effects to vegetation were observed at Iron Hill Test Site during the development of the mine and under operational conditions at this site.

Prior to commencement of operations at the Iron Hill WRL in January 2017, the WRL, Test and Reference sites showed similar trajectories in vegetative quality. This supports the application of NDVI to address key environmental assessments at the study area.

Post January 2017, a sudden decrease in vegetative quality was observed and can be attributed to the development of the pit (stripping, grubbing, and blasting) at this study area. NDVI at both Test and Reference sites showed a strong seasonal pattern with little differentiation between the two time-series. This would infer that the effect of dusting on vegetation at the Test site was minimal at most, as it was undetected in this analysis.

Considering that rehabilitation commenced from January 2019, the Waste Rock Landform and test site at IH has shown considerable revegetation over the past 36 months (Table 4). Based on a simple linear regression, rehabilitation at the IH WRL and IH Test has already exceeded the long-term average at the reference site (0.225, October 2019 – October 2022). Note that this regression does not consider seasonal variability, or other factors such as rainfall (Figure 10, Figure 11).

Table 4 - Percentage change in median NDVI observations at WRL, test and reference sites.

	IH WRL	IH Test	IH Reference
October 2019	0.031	0.168	0.158
October 2022	0.235	0.319	0.279
Percentage Change	651 %	90 %	77 %

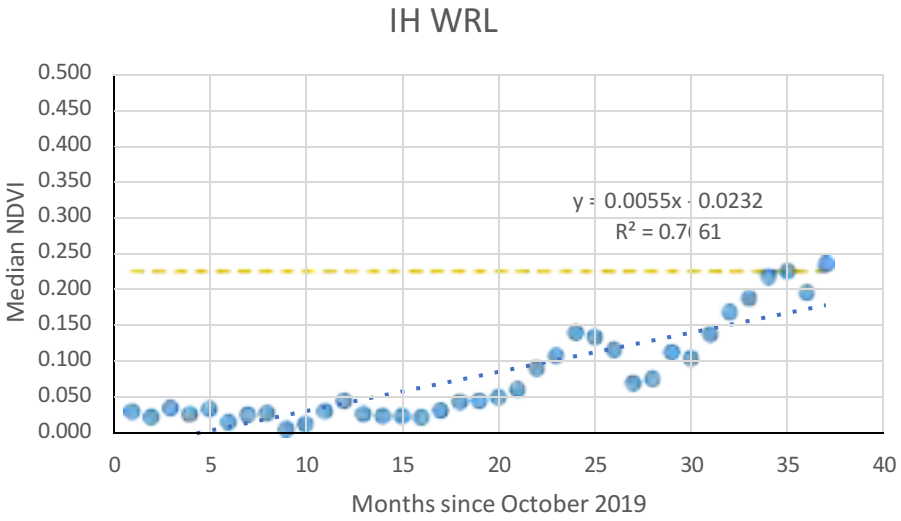

Figure 10 - Linear regression (blue dotted line) for monthly median NDVI at IH WRL (blue points) and average NDVI at the reference site over the same period of time (orange dashed line, October 2019 – October 2022).

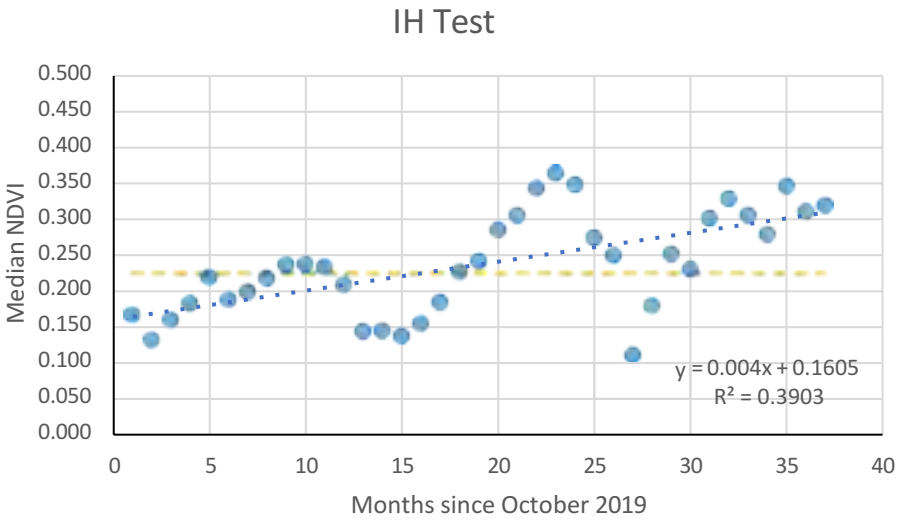

Figure 11 - Linear regression (blue dotted line) for monthly median NDVI at IH Test (blue points) and average NDVI at the reference site over the same period of time (orange dashed line, October 2019 – October 2022).

4. REFERENCES

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APPENDIX A. MEDIAN NDVI VALUES

Table A1 – Median NDVI values for each date of satellite imagery by study area (EH = Extension Hill, IH = Iron Hill).

Date	EH WRL	EH Test	EH Reference	IH WRL	IH Test	IH Reference
3/01/2016	0.003	0.001	0.163	0.187	0.181	0.146
2/02/2016	0.007	0.008	0.187	0.206	0.198	0.168
20/03/2016	-0.011	0.001	0.190	0.194	0.205	0.178
2/04/2016	0.011	0.019	0.196	0.183	0.203	0.194
9/05/2016	0.010	0.015	0.328	0.315	0.371	0.303
11/06/2016	-0.003	0.001	0.355	0.352	0.376	0.328
1/07/2016	-0.020	-0.020	0.181	0.363	0.376	0.173
28/07/2016	-0.028	-0.026	0.320	0.232	0.286	0.302
26/09/2016	0.015	0.020	0.295	0.316	0.362	0.274
16/10/2016	0.019	0.028	0.256	0.275	0.297	0.223
18/11/2016	0.011	0.016	0.218	0.223	0.231	0.189
15/12/2016	0.004	0.016	0.218	0.223	0.238	0.191
14/01/2017	0.008	0.017	0.223	0.220	0.237	0.190
16/02/2017	-0.026	-0.016	0.221	0.221	0.258	0.196
18/03/2017	-0.021	-0.008	0.230	0.217	0.246	0.207
7/04/2017	0.008	0.023	0.236	0.216	0.231	0.215
17/05/2017	0.001	0.023	0.279	0.130	0.222	0.240
26/06/2017	0.012	0.035	0.283	0.082	0.194	0.244
18/07/2017	0.004	0.028	0.280	0.047	0.196	0.247
25/08/2017	0.014	0.034	0.256	0.038	0.228	0.219
14/09/2017	0.018	0.040	0.238	0.038	0.213	0.205
19/10/2017	0.013	0.034	0.180	0.028	0.151	0.147
20/11/2017	0.002	0.023	0.162	0.017	0.126	0.121
25/12/2017	0.016	0.024	0.153	0.020	0.114	0.121
12/01/2018	0.011	0.025	0.172	0.020	0.125	0.133

Date	EH WRL	EH Test	EH Reference	IH WRL	IH Test	IH Reference
13/02/2018	-0.003	0.015	0.171	0.014	0.128	0.134
13/03/2018	-0.016	0.005	0.175	0.003	0.113	0.137
17/04/2018	-0.007	0.016	0.192	0.003	0.124	0.159
19/05/2018	0.012	0.041	0.257	0.018	0.157	0.208
16/06/2018	0.001	0.034	0.259	0.004	0.146	0.213
11/07/2018	0.000	0.030	0.262	0.005	0.158	0.208
10/08/2018	0.003	0.037	0.275	-0.004	0.215	0.224
29/09/2018	0.024	0.058	0.215	0.020	0.173	0.177
11/10/2018	0.048	0.067	0.207	0.019	0.168	0.160
18/11/2018	0.037	0.041	0.162	-0.002	0.136	0.137
18/12/2018	0.035	0.046	0.160	0.018	0.133	0.136
19/01/2019	0.035	0.046	0.167	0.035	0.138	0.140
18/02/2019	0.030	0.045	0.172	0.026	0.129	0.137
18/03/2019	0.022	0.042	0.168	0.015	0.121	0.133
22/04/2019	0.037	0.065	0.214	0.021	0.172	0.186
19/05/2019	0.048	0.078	0.246	0.026	0.197	0.194
18/06/2019	0.048	0.087	0.272	0.020	0.201	0.224
16/07/2019	0.047	0.092	0.271	0.021	0.233	0.222
20/08/2019	0.057	0.103	0.282	0.031	0.272	0.247
14/09/2019	0.051	0.096	0.215	0.028	0.226	0.221
21/10/2019	0.053	0.086	0.181	0.031	0.168	0.158
13/11/2019	0.039	0.067	0.147	0.024	0.133	0.134
13/12/2019	0.054	0.079	0.167	0.036	0.161	0.161
22/01/2020	0.043	0.073	0.184	0.027	0.184	0.182
4/03/2020	0.060	0.093	0.238	0.035	0.220	0.210
22/03/2020	0.047	0.083	0.198	0.016	0.189	0.182

Date	EH WRL	EH Test	EH Reference	IH WRL	IH Test	IH Reference
21/04/2020	0.066	0.103	0.219	0.027	0.200	0.204
18/05/2020	0.077	0.112	0.241	0.029	0.219	0.221
17/06/2020	0.071	0.114	0.263	0.007	0.237	0.259
15/07/2020	0.080	0.122	0.264	0.014	0.238	0.196
24/08/2020	0.095	0.125	0.219	0.032	0.234	0.217
18/09/2020	0.101	0.130	0.196	0.046	0.209	0.193
23/10/2020	0.062	0.087	0.146	0.027	0.145	0.138
22/11/2020	0.055	0.083	0.141	0.025	0.146	0.139
17/12/2020	0.051	0.075	0.136	0.025	0.139	0.129
16/01/2021	0.048	0.075	0.153	0.023	0.156	0.154
12/02/2021	0.059	0.089	0.182	0.032	0.185	0.178
14/03/2021	0.077	0.108	0.238	0.045	0.228	0.221
21/04/2021	0.095	0.131	0.244	0.046	0.242	0.231
11/05/2021	0.119	0.160	0.283	0.050	0.285	0.273
15/06/2021	0.167	0.207	0.326	0.062	0.306	0.310
02/07/2021	0.194	0.224	0.353	0.091	0.343	0.340
14/08/2021	0.208	0.245	0.340	0.108	0.364	0.321
15/09/2021	0.223	0.251	0.308	0.140	0.348	0.306
13/10/2021	0.188	0.218	0.238	0.134	0.275	0.249
14/11/2021	0.152	0.185	0.244	0.117	0.250	0.234
17/12/2021	0.125	0.164	0.202	0.070	0.112	0.099
16/01/2022	0.111	0.138	0.183	0.076	0.181	0.171
17/02/2022	0.145	0.170	0.247	0.113	0.252	0.245
17/03/2022	0.148	0.172	0.229	0.105	0.231	0.221
16/04/2022	0.197	0.221	0.292	0.138	0.301	0.286
16/05/2022	0.230	0.251	0.309	0.169	0.329	0.322

Date	EH WRL	EH Test	EH Reference	IH WRL	IH Test	IH Reference
15/06/2022	0.225	0.244	0.317	0.188	0.306	0.322
15/07/2022	0.218	0.210	0.309	0.218	0.279	0.232
14/08/2022	0.245	0.220	0.326	0.225	0.346	0.327
13/09/2022	0.259	0.260	0.295	0.196	0.311	0.284
8/10/2022	0.257	0.259	0.265	0.235	0.319	0.279

Hydrobiology

STREET
25 Southport Street
West Leederville 6007
WESTERN AUSTRALIA

POSTAL
PO Box 1034
West Leederville 6901
WESTERN AUSTRALIA

CONTACT
+61 (0)8 6218 0900 P
info@hydrobiology.com

ABN 68 120 964 650

www.hydrobiology.com