Report No. J022498

Detailed flora and vegetation survey of the Round Hill project (E47/1313)

Prepared for: HanRoy Pty Ltd
Date: 5/11/2024

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Executive Summary

The Round Hill survey area comprised two subsections of exploration licence E47/1313, located approximately 35 kilometres north-west of Newman in the Pilbara region of Western Australia.

HanRoy Pty Ltd (HanRoy) commissioned Rapallo to complete a two-phase detailed flora and vegetation survey of the survey area, with a combined size of 2097 hectares. The survey area is accessed via the Great Northern Highway and traversed by a network of unsealed roads and exploration tracks. Parts of the survey area located further away from tracks were accessed on foot. The first season was completed from 22 to 30 September 2023, and the second season from 8 to 16 April 2024.

A total of 41 quadrats were sampled over both seasons combined. Of these, 34 quadrats were surveyed in season one, and 40 quadrats were surveyed in season two. Additional quadrats were sampled in the second season to adequately sample all preliminary vegetation types identified during the first season.

The flora survey recorded 299 flora taxa from 47 different families. The most well represented families were Fabaceae (60 taxa), Poaceae (51 taxa), and Malvaceae (32 taxa).

Four weed taxa were recorded: *Bidens bipinnata, Malvastrum americanum, Cenchrus ciliaris* and *Portulaca oleracea* all permitted - s11 species under the *Biosecurity and Agriculture Management Act 2007* (BAM Act). No species identified by the Department of Biodiversity, Conservation and Attractions (DBCA) as 'Priority Alerts' for the Pilbara region were recorded.

The survey recorded five conservation significant taxa; all were Priority flora listed by DBCA.

- *Aristida jerichoensis* var. *subspinulifera* (Priority 3)
- *Indigofera gilesii* (Priority 3)
- *Ipomoea racemigera* (Priority 2)
- *Isotropis parviflora* (Priority 3)
- *Rhagodia* sp. Hamersley (Priority 3)

No threatened flora taxa were recorded on the survey area.

The desktop study identified 36 conservation significant flora taxa recorded from within 50 kilometres of the Round Hill survey area. All taxa were listed by DBCA as Priority Flora, with no threatened flora taxa identified in the desktop. In addition to the above species confirmed from the survey area, six taxa were assessed as highly likely to occur in the survey area, these were:

- *Acacia bromilowiana* (Priority 4)
- Aristida lazaridis (Priority 2)
- *Eremophila magnifica subsp. magnifica* (Priority 4)
- *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727) (Priority 3)
- *Lepidium catapycnon* (Priority 4)
- *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) (Priority 3)

Seven vegetation types were identified and mapped over the survey area:

- A – Mulga woodland over diverse tussock grassland on plains (839 hectares)
- B – Banded mulga woodland over *Triodia pungens* and *Triodia vanleeuwenii* (507 hectares)
- C – *Eucalyptus leucophloia* over *Triodia vanleeuwenii and Triodia pungens* on stony plains and rises (200 hectares)

- D – *Acacia catenulata, Acacia citrinoviridis*, and *Corymbia hamersleyana* over *Triodia pungens* and *Triodia vanleeuwenii* in drainage lines (9 hectares)
- E – *Acacia catenulata* and *Corymbia hamersleyana* over *Triodia pungens* and *Themeda triandra* in drainage at the base of low hills (15 hectares)
- F – *Triodia vanleeuwenii* and *Triodia wiseana* spinifex grassland with emergent *Eucalyptus leucophloia* on low hills and stony rises (315 hectares)
- G – *Triodia wiseana* and *Triodia angusta* closed spinifex grassland with emergent mallees and shrubs on undulating stony plain (212 hectares)

The survey area does not contain conservation listed vegetation communities.

Vegetation type F, A and B have a slightly raised local importance due to the presence of priority taxa, as a dominant taxon in the vegetation structure. Vegetation type F is supports *Isotropis parviflora* (Priority 3). Vegetation types A and vegetation type B support *Rhagodia* sp. Hamersley (Priority 3) based on both results of this survey, and the results of targeted searches completed earlier as presented in the desktop (Hancock 2022). However, these vegetation types are not considered regionally significant because *Isotropis parviflora* and *Rhagodia* sp. Hamersley (Priority 3) occur in a variety of habitats not just the vegetation types found on the survey area.

Vegetation type A may be considered locally significant because it contains *Acacia aptaneura* (mulga) as the dominant upper storey species on stony plains and floodplains. This matches the broad description of 'grove-intergrove mulga communities' which is listed by Kendrick as one of the "ecosystems at risk" in the Fortescue Plains subregion (PIL2) of the Pilbara IBRA region (Kendrick 2001b).

Vegetation condition of the survey area was mapped as Excellent (664 hectares: 32%), Very Good (578 hectares: 27%), and Good to Very Good. (855 hectares: 41%).

The abundant rainfall preceding the second season was reflected in high floristic diversity recorded in the second survey season. Survey effort was adequate to sample the vegetation of the survey area. The species accumulation curves calculated over abundance data over two survey season, indicated that the survey recorded 81% of the predicted number of taxa. This is reflected in the species accumulation curve by which after 41 quadrats had started to approach an asymptote.

1 Introduction

1.1 Project overview

The Round Hill project is situated in exploration licence E47/1313, located approximately 35 kilometres north-west of Newman in the Pilbara region of Western Australia.

HanRoy Pty Ltd (HanRoy) commissioned Rapallo Environmental (Rapallo) to complete a two-phase detailed flora and vegetation survey of the Round Hill project, in accordance with Environmental Protection Authority (EPA 2016) Technical Guidance. The first season was completed from 22 to 30 September 2023, and the second season from 8 to 16 April 2024.

1.2 Survey area

The Round Hill survey area comprised two subsections of E47/1313, which are a 197 hectare northern area and a 1900 hectare southern area, with a combined size of 2097 hectares (Figure 1.1). The survey area is accessed via the Great Northern Highway, and traversed by a network of unsealed roads and exploration tracks. Parts of the survey area located further away from tracks were accessed on foot.

1.3 Scope and objectives

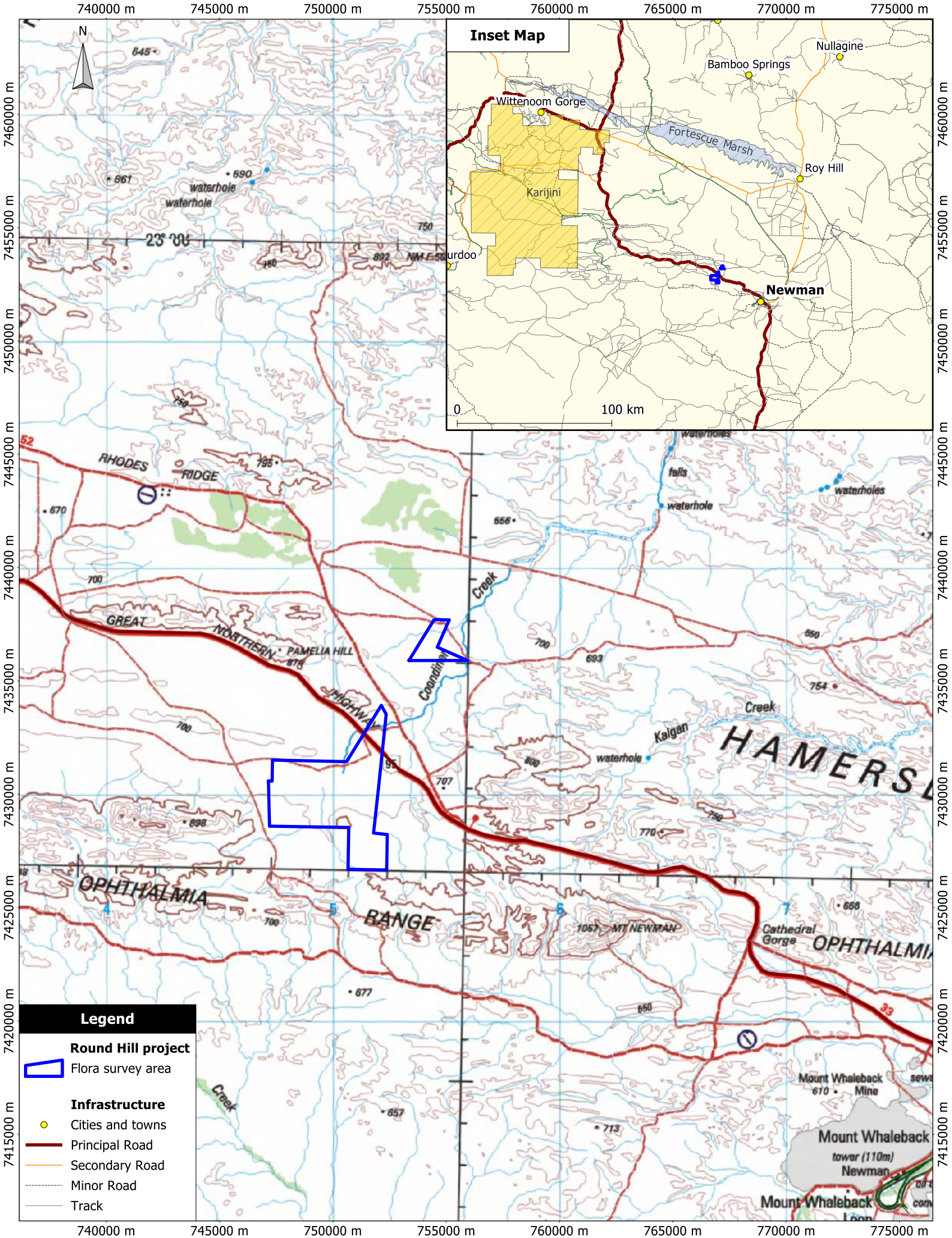
HanRoy commissioned Rapallo to complete a two-phase detailed flora and vegetation survey of the Round Hill survey area defined in section 1.2. The objective of the survey was to provide baseline flora and vegetation data for environmental impact assessments (EIA), which may be used to inform environmental approvals.

1.4 Survey timing

The detailed flora and vegetation survey aligned with Environmental Protection Authority *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA 2016a).

The Round Hill project is situated in the Eremaean Botanical Province. The recommended primary period for flora and vegetation surveys in the Eremaean is 6 to 8 weeks after the wet season (March to June), with supplementary surveys in the dry season after winter rainfall if available (EPA 2016a).

The flora and vegetation survey of the Round Hill project was completed in September 2023 and April 2024, which aligned with the EPA (2016a) recommended time for respectively a secondary and a primary survey season.



Rapallo environmental

Hanroy / Hancock Prospecting
Round Hill
Detailed flora and vegetation survey
(September 2023, April 2024)

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Datum: MGA94 Zone 50

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Figure 1.1

Location and extent of the survey area

2 Regional context

2.1 Climate and weather

The Round Hill project is situated in the Hamersley (PIL03) subregion of the Pilbara IBRA region. This area is part of the Eremaean Botanical Province (Beard 1990). The climate of the Hamersley subregion is described as semi-desert tropical with an average rainfall of 300 millimetres per year, usually occurring in summer cyclonic or thunderstorm events (Kendrick 2001a). Cyclones develop off the north-west coast and often cross the coastline between Karratha and Port Hedland and move inland over the Fortescue Valley system towards Newman (Beard 1990).

The closest Bureau of Meteorology (BOM) weather station to the survey area is Newman Aero (station number 007176), located approximately 35 kilometres southeast of the survey area. Data recorded at Newman (Figure 2.1) shows a mean annual rainfall of 317.7 millimetres. Mean monthly rainfall is highest in January with 70.2 millimetres, and lowest in September with 4.6 millimetres. The hottest months are December and January with mean maximum temperatures of 39.4 °C and 39.1 °C, respectively. The coolest month is July with a mean minimum temperature of 6.5 °C.

Evaporation in the Central Pilbara Region is estimated to be between 2000 millimetres and 3500 millimetres per annum, which is approximately ten times greater than annual rainfall (Gardiner 2003). This disparity maintains a typically arid landscape, except for areas located in proximity to river systems and shallow groundwater resources.

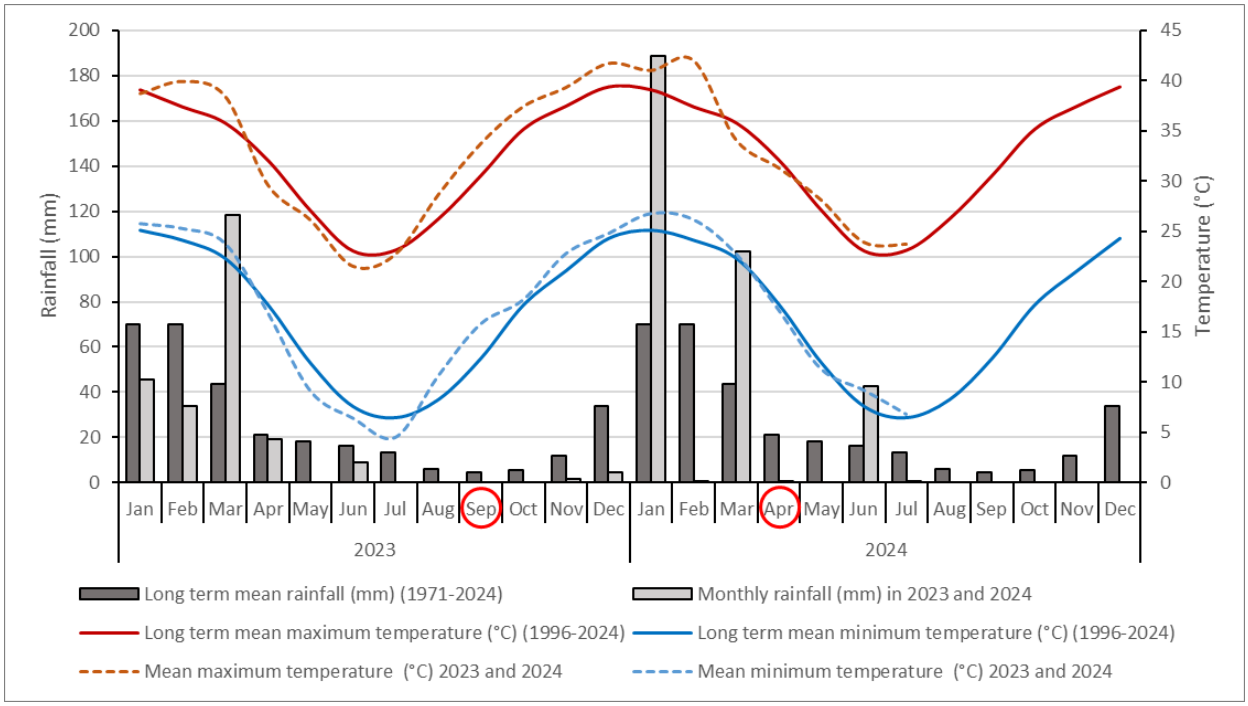

Figure 2.1 Long-term average monthly rainfall and temperatures, and 2023-2024 monthly rainfall and temperatures recorded at Newman Aero weather station

The two-season flora and vegetation survey was completed in September 2023 and April 2024 (circled red in Figure 2.1). During the first season from 22 to 30 September 2023, daily maximum temperatures ranged from 36.3°C to 38.1°C, and daily minimum temperatures ranged from 15.0°C to 23.3°C. Rainfall over the three months preceding the first season was 0.0 millimetres, and there was no rainfall recorded during the survey.

During the second season, from 8 to 16 April 2024, daily maximum temperatures ranged from 25.6°C to 34.9°C, with daily minimum temperatures ranging from 13.3°C to 20.0°C. Rainfall over the three months preceding the second season was 291.0 millimetres, with most rain falling in January and March 2024. The abundant rainfall preceding the April 2024 was reflected in high floristic diversity recorded in the second survey season.

2.2 Biogeography

2.2.1 IBRA bioregions

The bioregions of Australia are described in the Interim Biogeographic Regionalisation for Australia (IBRA) (Thackway & Cresswell 1995). Bioregions are large, geographically distinct areas of land with common characteristics such as geology, landform patterns, climate, ecological features and plant and animal communities. The latest version, IBRA7, classifies Australia's landscapes into 89 large geographically distinct bioregions and 419 subregions (Department of the Environment and Energy (DotEE) 2012).

The Round Hill project is located in the Hamersley (PIL03) subregion of the Pilbara IBRA region. The Hamersley subregion comprises the southern section of the Pilbara Craton. Geology is defined by mountainous areas of proterozoic sedimentary ranges and plateaux, dissected by gorges (basalt, shale and dolerite). Vegetation comprises mulga (*Acacia aneura* complex) low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* (snappy gum) over *Triodia brizoides* on skeletal soils of the ranges (Kendrick 2001a).

2.2.2 Land systems

The Land Systems of the Pilbara region are classified according to similarities in landform, soil, vegetation, geology and geomorphology (Van Vreeswyk et al. 2004). The survey area traverses five land systems, as summarised in Table 2.1 and mapped in Figure 2.2.

Table 2.1 Land systems of the survey area

Name	Land type	Description	Extent in survey area
Boolgeeda Land System	Stony plains with spinifex grasslands	Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands.	41 hectares (2%)
Newman Land System	Hills and ranges with spinifex grasslands	Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.	353 hectares (17%)
Rocklea Land System	Hills and ranges with spinifex grasslands	Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands.	156 hectares (7%)
Spearhole Land System	Wash plains on hardpan with mulga shrublands	Gently undulating gravelly hardpan plains and dissected slopes supporting groved mulga shrublands and hard spinifex.	1023 hectares (49%)
Wannamunna Land System	Wash plains on hardpan with mulga shrublands	Hardpan plains and internal drainage tracts supporting mulga shrublands and woodlands (and occasionally eucalypt woodlands).	524 hectares (25%)

2.2.3 Geology

2.2.3.1 Surface geology

The surface geology of the Round Hill survey area is summarised in Table 2.2 and mapped in Figure 2.3.

Table 2.2 Surface geology units of the survey area

Unit name	Code	Description	Extent in survey area
ferruginous duricrust 38498	Czl	Lateritic duricrust: Pisolitic, nodular or vuggy ferruginous laterite; some lateritic soils; ferricrete; magnesite; ferruginous and siliceous duricrusts and reworked products, calcrete, kaolinised rock, gossan; residual ferruginous saprolite	228 hectares (11%)
Brockman Iron Formation	Lchk	Banded iron-formation, chert, mudstone and siltstone	385 hectares (18%)
Weeli Wolli Formation	Lchw	Banded iron-formation (commonly jaspilitic), mudstone, siltstone; common interlayered metadoleritic sills	139 hectares (7%)
colluvium 38491	Qrc	Colluvial sediment: Colluvium, sheetwash, talus; gravel piedmonts and aprons over and around bedrock; clay-silt-sand with sheet and nodular kankar; alluvial and aeolian sand-silt-gravel in depressions and broad valleys in Canning Basin; local calcrete, reworked laterite	1345 hectares (64%)

2.2.3.2 Regolith

The Round Hill survey area is situated in the Pilbara Physiographic Province (PIP) and traverses five regolith units, as summarised in Table 2.3 and mapped in Figure 2.4.

Table 2.3 Regolith units of the survey area

Landform	Code	Description	Extent in survey area
Alluvial/fluvial	_Aa-PIP	Sand- or clay-rich alluvium on alluvial plain	23 hectares (1%)
Alluvial/fluvial	_A-PIP	Clay, silt, sand, and gravel in channels and on floodplains	1371 hectares (65%)
Colluvial	_C-PIP	Colluvium derived from different rock types; includes gravel, sand, silt and clay	118 hectares (6%)
Exposed	_X-PIP	Exposed bedrock	291 hectares (14%)
Residual or relict	_Rr-f-PIP	Ferruginous duricrust, massive to rubbly; includes iron-cemented reworked products	294 hectares (14%)

2.2.4 Soils

The survey area is located within the Fortescue botanical district of the Eremaean botanical province, which is synonymous with the Pilbara region (Beard 1990). This region is mountainous, with soils ranging from shallow, stony sandy loams along slopes, to cracking clays, stripped hardpans and calcareous loams along active waterways (Beard 1990).

The landforms of the survey area are typical of the eastern Pilbara with rocky hills, small gorges, mostly seasonal watercourses and gravelly loam valleys. The soils are typified by hard red alkaline soils on plains, pediments and alluvial areas, while shallow, skeletal soils are common on ranges that rise to

1,250 metres (Beard 1990). The southern part of eastern Pilbara region is characterised by earthy loams underlain by red-brown hardpan (Beard 1975, 1990).

The survey area traverses two distinct soil assemblages. The northern area and the vast majority of the southern area are characterised as soil unit Fa14 (1946 hectares: 93%), while small sections of the south and south-west of the southern area are characterised as soil unit Fa13 (151 hectares: 7%). These soil units are defined as follows (CSIRO Australia 2018):

- Fa13 – Ranges of banded jaspilite and chert along with shales, dolomites, and iron ore formations; some areas of ferruginous duricrust as well as occasional narrow winding valley plains and steeply dissected pediments. This unit is largely associated with the Hamersley and Ophthalmia Ranges. The soils are frequently stony and shallow and there are extensive areas without soil cover: chief soils are shallow stony earthy loams (Um5.51) along with some brown sands (Uc5.11) on the steeper slopes. Associated are hard alkaline red soils and loamy red duplex (Dr2.33, Dr2.32) soils on the limited areas of dissected pediments, while deep earthy loams (Um5.52) and earthy clays (Uf6.71) soils occur on the valley plains.
- Fa14 – Steep hills and steeply dissected pediments on areas of banded jaspilite and chert along with shales, dolomite, and iron ore formations; some narrow winding valley plains: chief soils are shallow stony earthy loams (Um5.51) along with some brown sands (Uc5.11) on the steeper slopes. Hard alkaline red soils and loamy red duplex (Dr2.33, Dr2.32) soils which occur on the pediments are more extensive in this unit than in unit Fa13. Deep earthy loams (Um5.52) and earthy clays (Uf6.71) soils occur on the valley plains

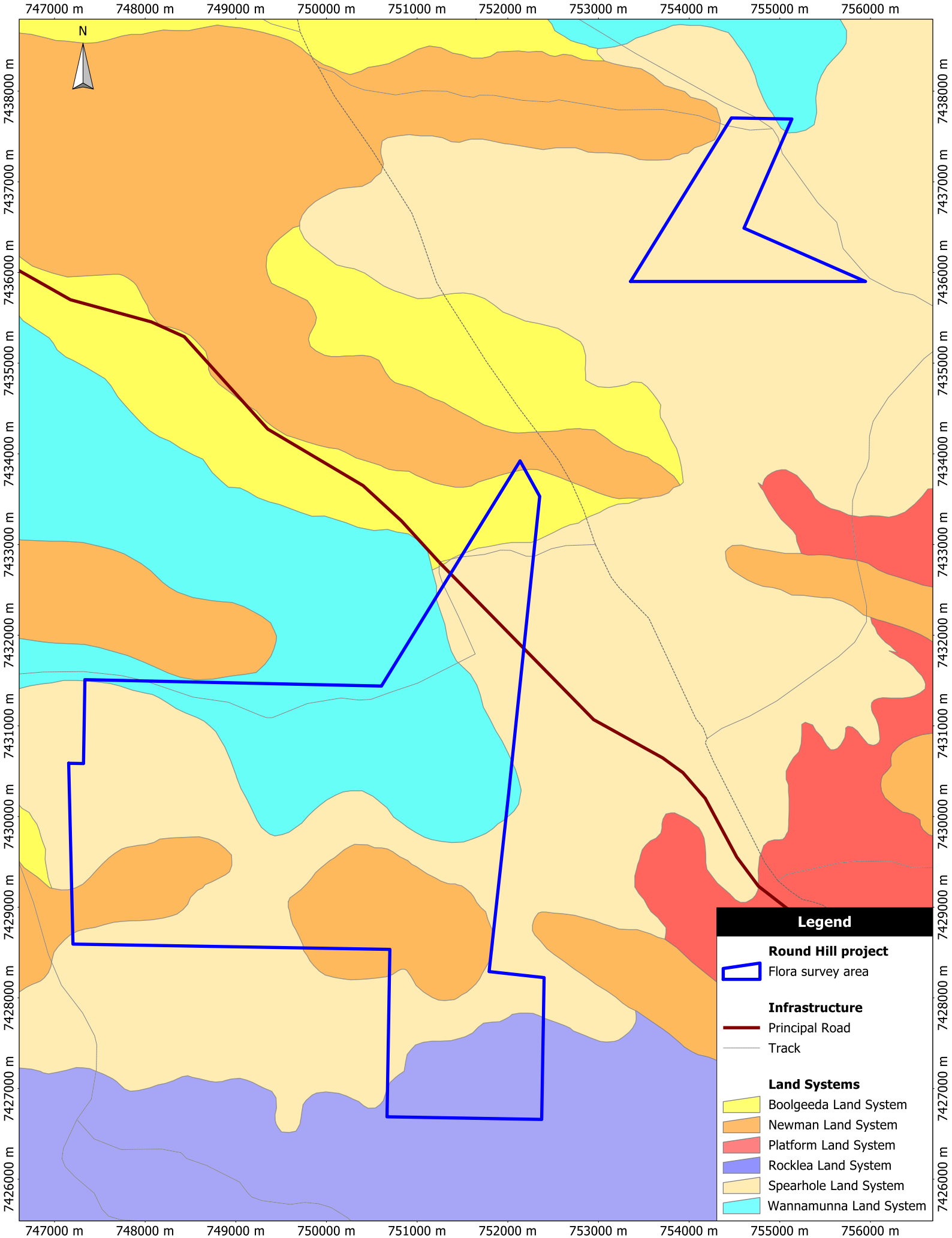

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Figure 2.2

Land systems of the survey area

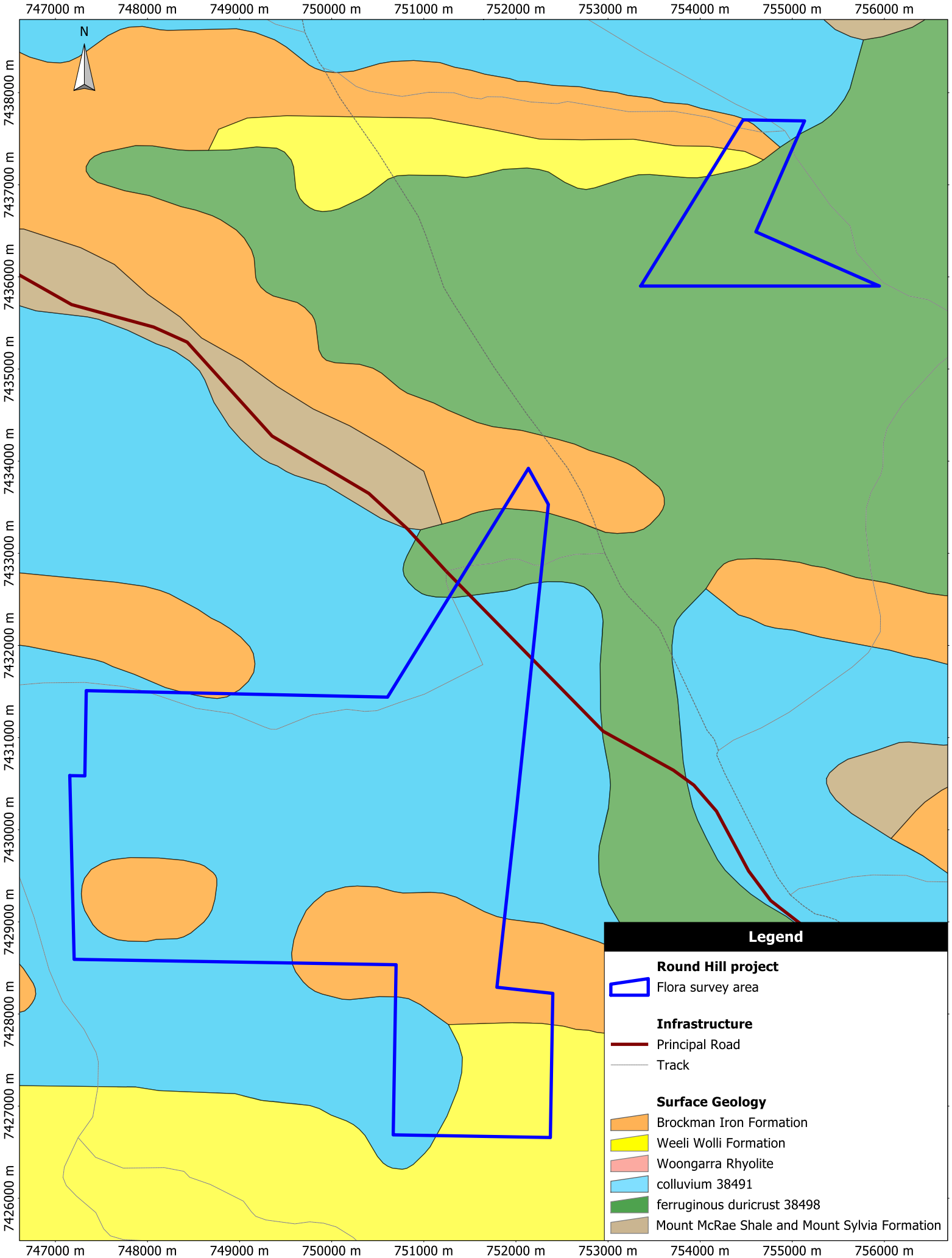

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Figure 2.3

Surface geology of the survey area

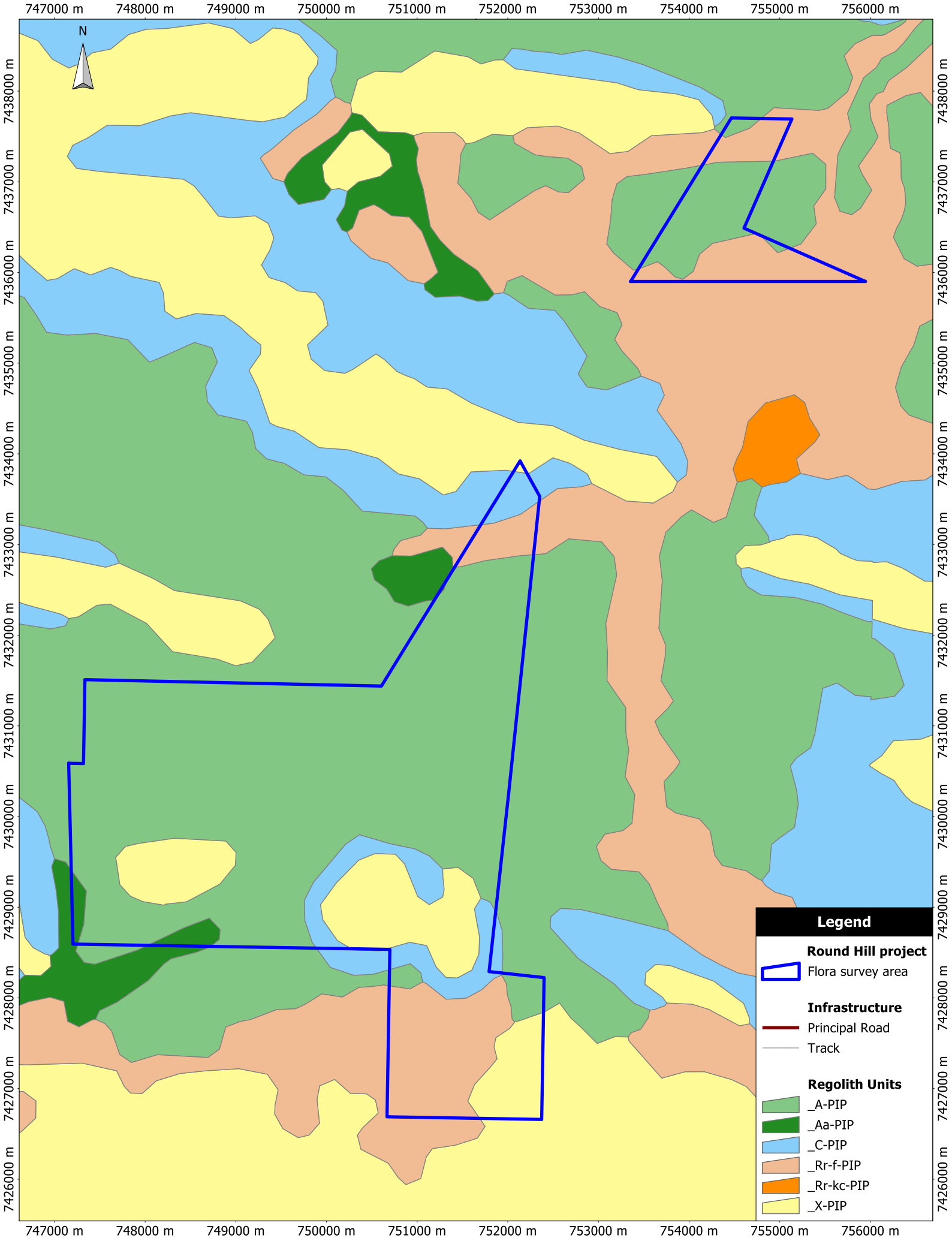

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Figure 2.4

Regolith units of the survey area

2.3 Regional vegetation

2.3.1 Botanical district

The Round Hill survey area is situated in the Fortescue botanical district of the Eremaean botanical province, which is synonymous with the Pilbara IBRA region. The Pilbara region receives a slightly higher than average rainfall than most of the Eremaean Province, due to the prevalence of cyclones off the coast, but this is not enough to modify the essentially desert appearance of the plant cover (Beard 1990).

The Fortescue botanical district consists predominantly of tree and shrub steppe communities with *Eucalyptus* trees, *Acacia* shrubs and spinifex grasses including *Triodia pungens* and *T. wiseana* (Beard, (1975). Mulga (species of the *Acacia aneura* complex) occurs in valleys and short-grass plains may be present on alluvial soils (Beard 1990).

The survey area is situated near the southern edge of the Fortescue botanical district, approximately 25 kilometres north of the boundary with the Ashburton botanical district (synonymous with the Gascoyne IBRA region), which is heavily dominated by mulga (Beard 1990). The southern boundary of the Fortescue botanical districts is defined by a change from *Triodia* (spinifex) dominated steppe (Fortescue) to Acacia dominated scrub (Ashburton), which Beard (1990) refers to as the *Acacia-Triodia* line. To the north of this line, spinifex vegetation is dominant, and to the south Acacia woodlands. Acacia woodlands and scrub are not entirely absent from the Pilbara, but spinifex country is the characteristic landscape element (Beard 1990).

2.3.2 Vegetation system-associations

Digital maps (shapefiles) of pre-European vegetation communities, based on state-wide mapping by J.S. Beard at 1:250,000 scale, are published by the Department of Primary Industries and Regional Development (Beard 2018).

The Round Hill project is situated in the Hamersley (PIL3) IBRA subregion. Vegetation of the Hamersley subregion is described as Mulga (*Acacia aneura* complex) low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (Kendrick 2001a).

Beard mapped the vegetation system-associations of the survey area as Hamersley 18 (78%), and Hamersley 82 (22%), with a tiny (260 m^2) section of the southern survey area intersecting Hamersley 175. These are mapped in Figure 2.5 and described as below (Beard 2018).

Hamersley 18 – Low woodland, open low woodland, to sparse low woodland of *Acacia aneura* (complex), *Eremophila fraseri*, *Acacia pruinocarpa*, over *Acacia* sp. aff. ligulata, and *Eremophila forrestii*; over *Ptilotus drummondii*, *Eremophila lanceolata*, *Brachyscome* sp., *Calocephalus francisii*, and *Rhodanthe floribunda*.

Hamersley 82 – Hummock grassland and low tree steppe of *Triodia wiseana* and *Eucalyptus leucophloia* (snappy gum). The vegetation within this system-association forms a mosaic following landforms:

- Ranges: *Eucalyptus leucophloia* and *Eucalyptus gamophylla* trees and mallees; over *Senna artemisioides* subsp. x *sturtii*, *Dodonaea viscosa*, *Grevillea wickhamii*, *Hakea lorea*, *Senna pleurocarpa* var. *pleurocarpa* shrubs; over *Triodia wiseana*, *Ptilotus rotundifolius*, *Acacia*

lycopodiifolia, *Gompholobium polyzygum*, *Calytrix exstipulata* hummock grassland, shrubs and forbs.

- Summits: *Eucalyptus kingsmillii*, *Eucalyptus gamophylla*, *Eucalyptus leucophloia*, *Eucalyptus* sp. trees and mallees; over *Senna artemisioides* subsp. x *sturtii*, *Dodonaea viscosa*, *Grevillea wickhamii*, *Hakea lorea*, *Senna pleurocarpa* var. *pleurocarpa* shrubs; over *Triodia wiseana*, *Ptilotus rotundifolius*, *Acacia lycopodiifolia*, *Atriplex* sp., *Gompholobium polyzygum* hummock grassland, shrubs and forbs.
- Gorge floors: *Eucalyptus camaldulensis*, *Eucalyptus microtheca*, *Eucalyptus dichromophloia*, *Acacia pruinocarpa*, *Melaleuca leucadendra* trees; over *Hibiscus goldsworthii*, *Arivela viscosa* shrubs and forbs; over *Swainsona stenodonta*, *Tephrosia* sp., *Jasminum lineare*, *Duperreya sericea* forbs, shrubs, and vines.

Hamersley 175 – Grasslands, short bunch-grass savanna of *Astrebla pectinata*, *Aristida latifolia*, *Chrysopogon fallax*, *Eragrostis setifolia*, *Angianthus* sp. tussock grasses and forbs.

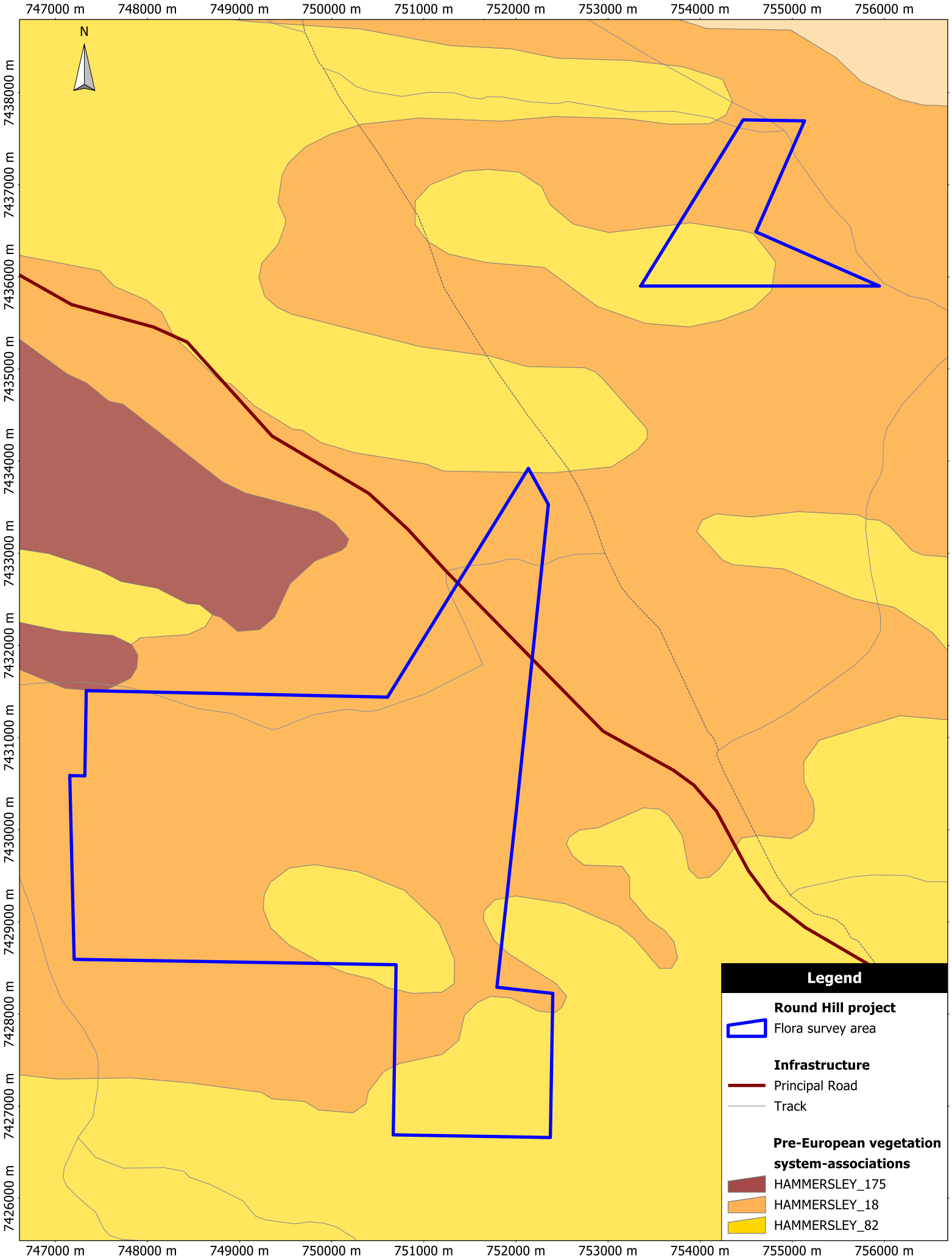
Table 2.4 Pre-European vegetation within the survey area

Beard Vegetation System and Association	Extent in survey area	Total current extent in Australia (1)	Pre-European extent remaining (1)
Hamersley 18	1627 hectares	576 542 hectares	99.19 %
Hamersley 82	470 hectares	2 165 224 hectares	99.43 %
Hamersley 175	0.026 hectares	92 751 hectares	99.69 %

Footnotes: 1) Numbers from 2018 Statewide Vegetation Statistics (DBCA 2019)

Vegetation that is not a Threatened or Priority Ecological Community may still be considered significant if it has a restricted distribution, or has experienced a degree of historical impact from threatening processes (EPA 2016b). Vegetation types retaining less than 30% of their pre-European extent generally experience accelerated species loss at an ecosystem level (EPA 2000) and are regarded as being 'vulnerable', while vegetation types retaining less than 10% of their original extent are regarded as being 'endangered' (EPA 2000, 2016b, Shepherd *et al.* 2002, DER 2014).

As presented in Table 2.4, the vegetation system-associations of the survey area have close to 100% of their original extent remaining, and would be considered 'least concern' (DER 2014).



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Detailed flora and vegetation survey
(September 2023, April 2024)

Original Size: A4
Scale: 1:50,000
Datum: MGA94 Zone 50

0 1 km

Figure 2.5

Pre-European vegetation system-associations

3 Methods

A two-season detailed flora and vegetation survey was completed over the Round Hill survey area by a team of four from 22 to 30 September 2023 (season one), and by a team of six botanists from 8 to 16 April 2024 (season two). The majority of the survey area was accessed by four-wheel drive vehicle using existing tracks. Parts of the survey area located further away from tracks were accessed on foot.

The survey aligned with Environmental Protection Authority (EPA) *Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA 2016a).

3.1 Personnel and licensing

The personnel involved in the field survey, data entry and analysis, and the preparation of this report are listed in Table 3.3. The survey was conducted under Flora Taking (Biological Assessment) licences pursuant to Regulation 62 of the Biodiversity Conservation Regulations 2018. As part of the license conditions, a list of flora taxa recorded in the survey will be forwarded to the DBCA.

Table 3.1 Personnel involved in the survey

Name	Position	Survey 2023	Survey 2024	Taxonomy	Analysis	Reporting
Marieke Weerheim	Senior Botanist	•	•		•	•
Sharnya Yates	Botanical Taxonomist			•		
Ryan Craig	Senior Botanist			•		
Linda Dalgliesh	Senior Botanist	•	•			
Belinda Forbes	Botanist	•	•			
Arnika Thorbjornsen	Botanist	•				
Molly George	Botanist		•			
Dakota Scrimshaw	Field Botanist		•			•
Rebecca Iranzo-Bennett	Field Botanist		•			
Jasmine Kasper	Ecologist				•	•

3.2 Desktop study

The desktop study comprised a search of paid and free databases, and a review of available literature relevant to the survey area. The desktop served to compile a list of conservation significant flora taxa and vegetation communities with the potential to occur within the survey area.

Database search parameters are outlined in Table 3.2 below with relevant reports reviewed in Table 3.3. Conservation codes for Australian flora are detailed Appendix I.

Table 3.2 Flora database search parameters

Source of information	Search area
DBCA Threatened and Priority Flora Database (including WA Herbarium database records)	50 km radius surrounding the survey area

Source of information	Search area
DBCA Threatened and Priority Ecological Communities (TEC-PEC) database	50 km radius surrounding the survey area
Atlas of Living Australia (ALA) database	50 km radius surrounding the survey area
Department of Agriculture Water and the Environment (AWE) (2021) Protected Matters search tool	50 km radius surrounding the survey area
Hancock Prospecting (2022) Round Hill Restricted Flora database: Spatial data compiled from targeted conservation significant surveys completed between 2007 and 2022	0 km

Table 3.3 Relevant reports reviewed for the desktop

Report title	Distance to Round Hill survey area
Aecom (2020) Rhodes Ridge targeted flora survey	30 kilometres west of the survey area
Aecom (2021) Rhodes Ridge - Giles Point and Bakers Road upgrades targeted flora survey	Adjacent to the survey area (closest point 500 metres west)
Astron (2020) Rhodes Ridge detailed flora and vegetation survey	4 kilometres north-west of the survey aera
Astron (2021) Rhodes Ridge Priority Flora Searches	Adjacent to the survey area, closest points 50-100 metres from survey area boundary
Astron (2019) Rhodes Ridge targeted flora survey	Closest point 2 kilometres north-west of the northern survey area
Biologic (2020) Rhodes Ridge NVCP targeted flora survey	10 kilometres north-west of the survey area
Biologic (2021) Western Ridge detailed flora and vegetation survey	Approximately 20 kilometres south-east from the survey area
Stantec (2021) Rhodes Ridge targeted flora survey	Approximately 20 kilometres west of the survey area
Rio Tinto (2017) Flora, vegetation, and fauna habitat assessment at Ophthalmia	Approximately 10 kilometres west of the survey area

The conservation significant taxa identified in the desktop were reviewed for likelihood of occurrence within the survey area, based on the likelihood categories outlined in Appendix II. Desktop results and likelihood assessment are presented in Appendix III.

3.3 Field survey

A two-season detailed flora and vegetation survey was completed over the Round Hill survey area by a team of four from 22 to 30 September 2023 (season one), and by a team of six botanists from 8 to 16 April 2024 (season two) (Table 3.1). Survey effort is mapped in Figure 3.1. The majority of the survey area was accessed by four-wheel drive vehicle using existing tracks. Parts of the survey area located further away from tracks were accessed on foot.

3.3.1 Quadrats

A total of 41 quadrats were sampled over both seasons combined, as summarised in Appendix V and mapped in Figure 3.1. Of these, 34 quadrats were surveyed in season one, and 40 quadrats were surveyed in season two. Additional quadrats were sampled in the second season in order to adequately

sample all preliminary vegetation types identified during the first season. Quadrat RHQ24 was not re-sampled during the second season following heritage surveys just prior which identified this site as falling within a restricted area.

Quadrats were accessed via 4WD vehicle and surveyed on foot. Flora quadrats were 50 by 50-metres in size, and were selected within all preliminary vegetation types discernible through aerial photography interpretation, topography, and pre-European vegetation and landform mapping, in combination with on-ground observations. Quadrats were accessed via 4WD vehicle and surveyed on foot.

The following information was recorded at each quadrat:

- Site name, date, photographs, GPS coordinates or corner points
- Landform, aspect, slope
- Soil type, soil colour
- Rock type, rock cover, rock size
- Vegetation condition rating (as per Table 2 in EPA 2016c)
- Disturbances noted in the area including estimated fire history
- Vascular plant species – including height and approximate foliage cover

3.3.2 Relevés, vegetation notes, and opportunistic collections

Relevés comprised an unbounded search of a central point with data recorded for all dominant flora taxa. Nine relevés were sampled during the first survey season. Vegetation notes comprised photos, a brief vegetation description, and collection of one or more dominant taxa in order to further refine vegetation mapping.

Two fauna surveys were completed by Rapallo over the Round Hill survey area (Rapallo 2024a and 2024b *in prep*.). Site photos and notes collected during these surveys were also used to verify and further refine vegetation boundaries.

Preliminary vegetation boundaries were mapped in the field using aerial photographs and GPS waypoints with associated vegetation notes.

3.3.3 Specimen collection and identification

Flora specimens were collected and pressed as per Western Australian Herbarium (2008) guidelines. Each specimen was assigned a unique field name and field number and was marked with a plant tag containing specimen and location information. All specimens were pressed and dried on the day of collection. Fragile material such as flowers, seed capsules, or very small specimens were sealed in paper bags which were marked as per the plant tags.

Taxonomic identification of flora specimens was completed by Sharnya Yates (Table 3.1) with the use of the WA Herbarium reference collection, latest flora identification keys, and recent scientific publications. As per section 7.2 of EPA (2016c) and under flora licence conditions, suitable voucher specimens will be lodged with the Western Australian Herbarium.

3.3.4 Vegetation classification and mapping

Vegetation types of the survey area were classified and mapped using a combination of statistical analysis, manual classification, and field-based observations. Quadrats were initially grouped into

interim vegetation types based on quadrat data collected on species composition, vegetation structure, fire history, landform, soil, rock cover, and site photographs.

PATN software (Belbin 2013) was used to group the quadrats based on a statistical measure of similarity of species presence and density. In the final step, the grouping of quadrats produced by PATN analysis was augmented by the interim vegetation types, quadrat data, site photos, and aerial photography, to derive the final vegetation types.

Data and site photos collected at relevés and vegetation note sites, as well as data collected during the two fauna surveys completed by Rapallo over the same survey area, was used to verify and refine vegetation boundaries.

Final vegetation boundaries were drawn based on aerial photographs using field data and PATN classification, elevation, and biogeology mapping.

PATN analysis procedure

Statistical analysis to support classification of vegetation types was carried out using PATN software (Belbin 2013). PATN analysis was performed on data from all 41 quadrats utilising the combined data from both seasons. Taxa that were unidentified or identified only to family level were excluded. Taxa identified only to genus level when there were multiple species of that genus present in the dataset, were excluded from the analysis. Weeds were retained in the dataset.

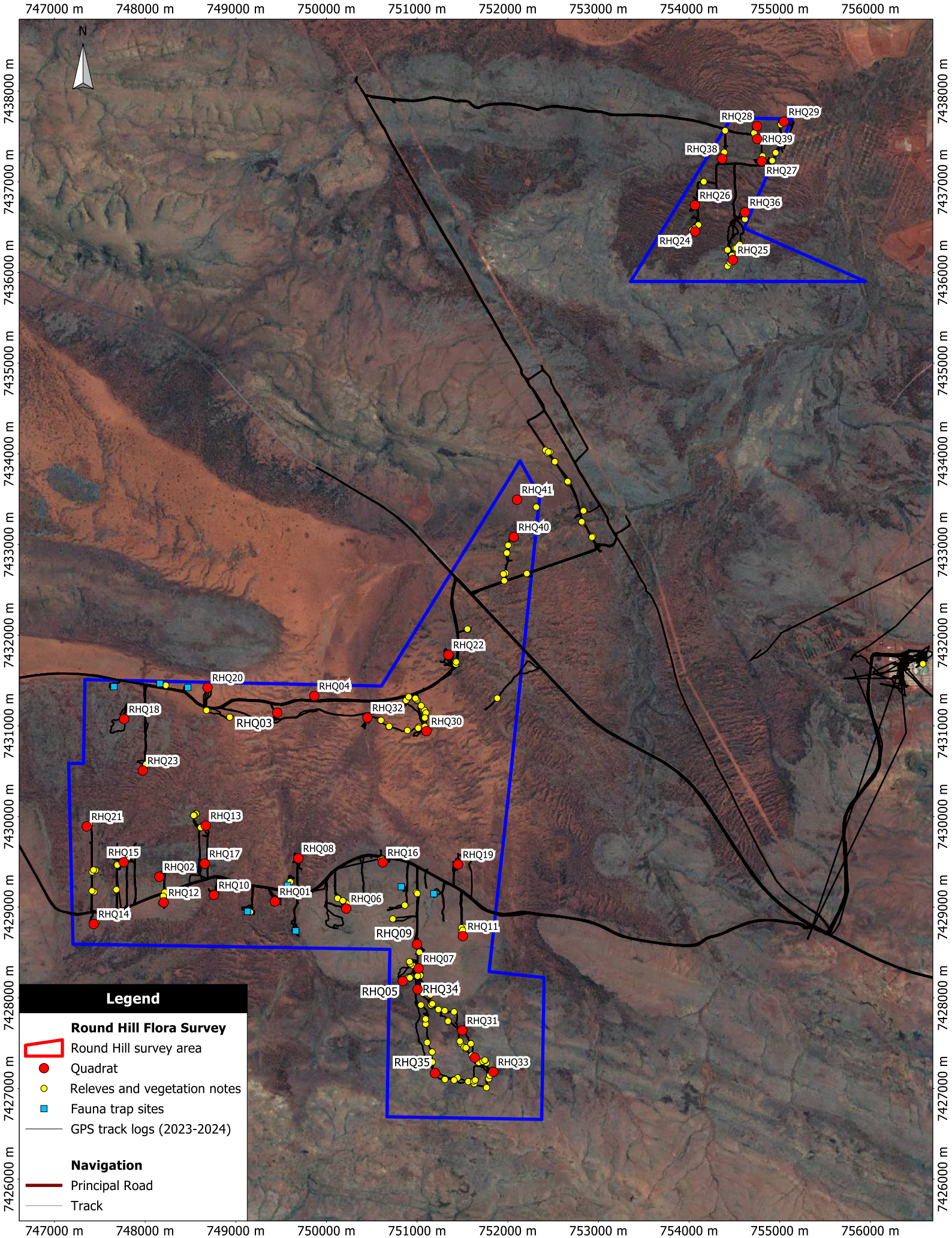
Mulga species recorded during the survey (*Acacia aptaneura*, *A. incurvaneura*, *A. pteraneura*, and *A*. sp. 'aneura complex') were grouped together and treated as one species during the analysis due to the difficulties in separating these species in the field. The total number of flora taxa included in the PATN analysis was 281.

Prior to analysis, percentage cover data for each taxon at each quadrat was re-coded into cover scores ranging from 1 (<2% cover) to 5 (>75% cover). A two-step association measure was used to classify flora taxa into twelve groups. The final association of sites used the Agglomerative Hierarchical Fusion classification strategy, the Flexible UPGMA classification technique and the Bray and Curtis association measure, with beta of -0.1, producing seven groups of sites.

The PATN dendrogram is presented in section 4.2.6.

3.3.5 Nomenclature and conservation listing

Flora taxonomy and nomenclature follows FloraBase (Western Australian Herbarium 1998). FloraBase was also accessed to verify conservation codes, distribution records, habitat requirements, and flowering times. Conservation codes cited in this report are as per Appendix I.



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Datum: MGA94 Zone 50

0 1 km

Figure 3.1

Flora survey effort over the Round Hill survey area

4 Results and Discussion

4.1 Desktop results

The desktop study returned 1000 vascular plant taxa (species and sub species) representing 90 plant families from within 50 kilometres of the survey area. These included 49 conservation significant flora taxa representing 31 different plant families.

4.1.1 Conservation significant flora

The desktop study identified 36 conservation significant flora taxa recorded from within 50 kilometres of the Round Hill survey area. All taxa were listed by DBCA as Priority Flora, with no threatened flora taxa identified in the desktop.

Desktop data is mapped in Figure 4.1 showing both regional desktop data and fine-scale data from targeted conservation significant flora surveys completed previously over parts of the current Round Hill survey area (Hancock 2022). As shown in Figure 4.1 the targeted surveys primarily followed exploration gridlines established up until 2022 and covered primarily the central southern parts of the southern survey area (including the Round Hill landform) and central parts of the northern survey area.

The likelihood of occurrence for each of these 36 taxa within the Round Hill survey area was assessed after the field surveys (when the habitats within the survey area were confirmed) according to the matrix presented in Appendix II. Results are summarised in Table 4.1 with complete results and likelihood rankings presented in Appendix III.

Table 4.1 Summary of desktop results for conservation significant taxa

Likelihood ranking	Conservation status				Total taxa
	P1	P2	P3	P4	
Confirmed to occur in the survey area	1	1	4		**6**
Highly likely to occur in survey area		1	2	3	**6**
Likely to occur in the survey area		3	3	1	**7**
Possible to occur in the survey area		1	7	2	**10**
Unlikely to occur in the survey area		1	6		**7**
Grand total	**1**	**7**	**22**	**6**	**36**

Six taxa were confirmed to occur in the survey area based on both desktop results and survey data, these are listed below:

- *Aristida jerichoensis* var. *subspinulifera* (Priority 3)
- *Indigofera gilesii* (Priority 3)
- *Ipomoea racemigera* (Priority 2)
- *Paranotis* sp. Pilbara (Priority 1)
- *Isotropis parviflora* (Priority 3)
- *Rhagodia* sp. Hamersley (Priority 3)

***Aristida jerichoensis* var. *subspinulifera* (Priority 3)**

Aristida jerichoensis var. *subspinulifera* is a compactly tufted perennial grass up to 0.8 metres in height. It is typically found on hardpan plains across a variety of habitat types including mulga woodlands/mixed acacia shrublands over tussock grasslands, low open woodland of *Eucalyptus tephrodes*, floodplains and drainages with brown-red sandy clay loam, ironstone found within the drainages, and flats with no rocks (Western Australian Herbarium 1998).

This taxon was recorded during the Round Hill flora survey from quadrat RHQ04 located in vegetation type A (Figure 4.3). The desktop study returned two further records of this taxon from within the survey area, as mapped in Figure 4.1.

Plate 4.1 *Aristida jerichoensis* var. *subspinulifera* recorded during the survey

***Indigofera gilesii* (Priority 3)**

Indigofera gilesii is a shrub growing up to 1.5 metres high, with purple to pink flowers occurring in May or August. It typically grows in pebbly loam soils amongst boulders and outcrops on hills (Western Australian Herbarium 1998). It can occur in the variety of vegetation associations including open heath with *Santalum lanceolatum* and *Acacia hamersleyensis*, in steep, gritty soil with *Eucalyptus kingsmillii*, *Eucalyptus leucophloia* over *Ptilotus obovatus,* and *Eucalyptus leucophloia* over *Eremophila* sp. and *Triodia pungens* (DBCA database records).

This taxon was recorded during the detailed flora survey from quadrat RHQ06 located on the Round Hill in vegetation type F (Figure 4.3). Desktop results show further records of this taxon from within the survey area, as mapped in Figure 4.1.

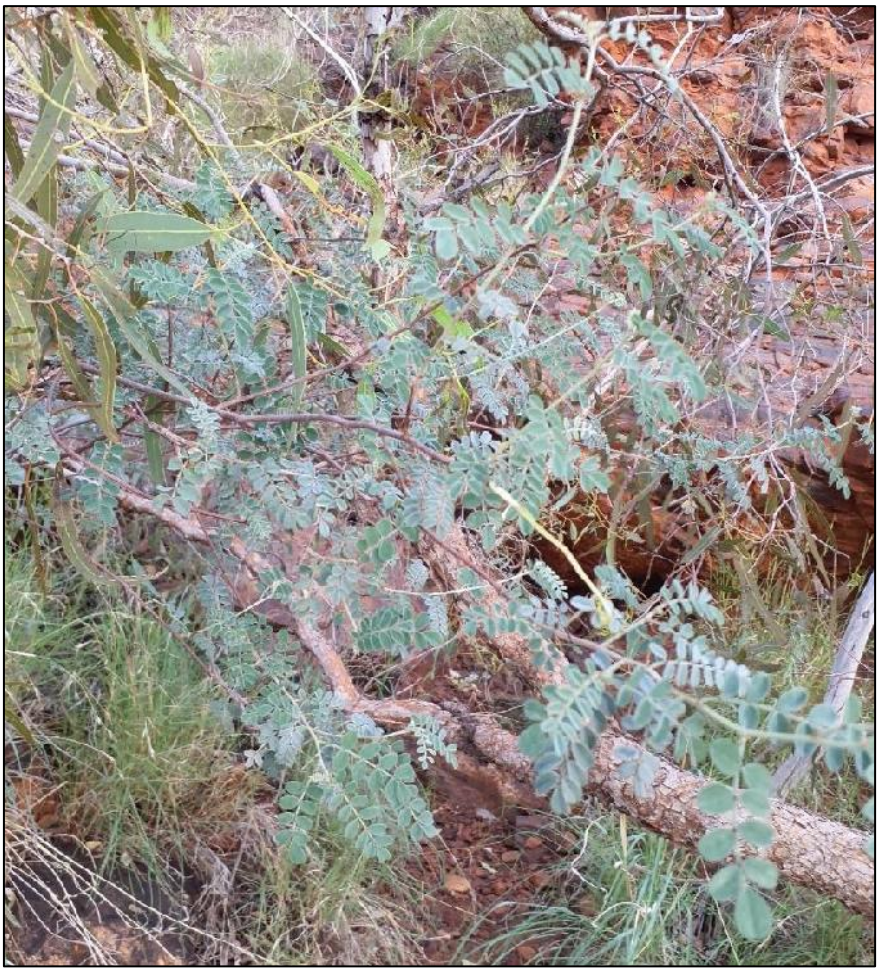


Plate 4.2 ***Indigofera gilesii*** **(Priority 3) recorded during the survey**

Isotropis parviflora **(Priority 3)**

Isotropis parviflora is a small low shrub up to 0.1 metres tall with white or pink flowers in March or June. It is typically found on valley slopes of ironstone plateaus but can occur in a variety of habitats, including open hummock grassland of Triodia with scattered Eucalyptus and Corymbia trees, over open mixed Acacia shrubland (Western Australian Herbarium 1998).

This taxon was recorded during the detailed flora survey of Round Hill from quadrat RHQ12 located in vegetation type F (Figure 4.3). The desktop returned many more records of this taxon from the southern part of the survey area both from the Round Hill itself and a stony rise to the west of the Round Hill with the same habitat (vegetation type F), as mapped in Figure 4.1.

Plate 4.3 ***Isotropis parviflora*** **recorded during the survey**

Ipomoea racemigera **(Priority 2)**

Ipomoea racemigera is a creeping annual herb or climber, with white flowers occurring in April and June (Western Australian Herbarium 1998). It is typically found in drainage lines with dark red clay and occasional ironstone pebble rock surface layer. DBCA database records describe this taxon recorded from a variety of vegetation types associated with drainage, including low open forest of *Eucalyptus xerothermica, Acacia aptaneura* and *Hakea lorea* over mixed tussock grassland and sedges; Open forest of Eucalyptus camaldulensis and Melaleuca argentea over low open woodland of mixed acacias over open shrubland of Myoporum montanum.

This taxon was recorded from quadrat RHQ22 located in a drainage line within vegetation type A (Figure 4.3). This taxon was not recorded previously within the survey area, with the nearest desktop records approximately 27 kilometres southeast of the survey area (Figure 4.1).

Plate 4.4 **Ipomoea racemigera (Priority 2) recorded during the survey**

***Rhagodia* sp. Hamersley (Priority 3)**

Rhagodia sp. *Hamersley* as is spindly shrub, growing up to 2 metres tall (but usually much smaller) that produces flowers in November. It is typically found in floodplains with red-brown sandy clay loam and recorded in wide variety of vegetation associations, including Acacia thickets over mixed grassland, emergent eucalypts over Triodia grassland and in very open mulga woodland over patchy mixed tussock grasses (DBCA database records and Western Australian Herbarium 1998).

This taxon was recorded during the Round Hill flora survey from eight quadrats located in four different vegetation types (Figure 4.3). The desktop returned many records of this taxon, most of which from the mulga woodland areas within both the northern and southern parts of the survey area, as mapped in Figure 4.1.

Plate 4.5 *Rhagodia* sp. Hamersley (Priority 3) recorded during the survey

***Paranotis* sp. Pilbara (Priority 1)**

Paranotis sp. Pilbara is a tall grass ranging from 0.3 to 1 metres in height. DBCA database records describe this taxon as recorded from an open depression between ironstone hills in a mixed tussock grassland consisting of *Themeda triandra* and *Aristida lazarides*, and from a major creekline on reddish-brown sandy loam soil with an open woodland consisting of *Eucalyptus victrix*, *Eucalyptus camaldulensis* subsp. *obtusa* and low open woodland of *Eucalyptus* xerothermica, over tall open shrubland with *Petalostylis labicheoides, Androcalva luteiflora, Gossypium sturtianum* var. *sturtianum* over *Triodia longiceps*. Not much is known of this taxon, and FloraBase (Western Australian Herbarium 1998) provides not descriptions as yet.

The desktop returned one DBCA database record of this taxon within the survey area, located in the southern survey area and recorded in 2021, with several more records within 150-300 metres from the survey area boundary (Figure 4.1). This taxon was not recorded during the survey, and the DBCA database location could not be revisited as it is located in a heritage area.

4.1.2 Introduced flora (weeds)

Weed classification in Western Australia

The *Biosecurity and Agriculture Management Act 2007* (BAM Act) categorises the weeds of Western Australia into four main classifications:

- Declared Pests (under Section 22 of the Act);
- Permitted (under Section 11 of the Act);
- Prohibited (under Section 12 of the Act); and
- Permitted requiring a permit (Section 73, BAM Regulations 2013).

Under the BAM Act all declared plant pests are placed in one of three categories:

- C1 (Exclusion) — Pests will be assigned to this category if they are 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) — Pests will be assigned to this category if they are present in Western Australia in low enough numbers or in sufficiently limited areas that their eradication is still feasible; and
- C3 (Management) — Pests will be assigned to this category if they are 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.

Fifteen introduced taxa have been identified by DBCA as 'Priority Alerts' for the Pilbara region, including **Azadirachta indica, *Calotropis procera, *Chloris gayana, *Clitoria ternatea, *Cryptostegia grandiflora, *Cylindropuntia spp., *Euphorbia tirucalli, *Jatropha gossypifolia, *Lantana camara, *Moringa oleifera, *Ricinus communis, *Schinus molle var. areira, *Vachellia nilotica, *Washingtonia robusta and *Xanthium strumarium* (DPaW 2014). None of these taxa were recorded during the survey.

Weeds identified in the desktop study

The desktop study identified six introduced flora taxa (weeds) from within 50 kilometres of the survey area, as listed below in Table 4.2. All weed species identified in the desktop are listed as Permitted – s11 within the state of Western Australia as per the Western Australian Organism List (DPIRD 2024).

Four introduced (weed) species were recorded from the Round Hill survey area during the flora and survey. All weeds recorded during the survey were also identified in the desktop. Weeds recorded during the survey area are indicated in the last column of Table 4.2 and discussed in section 4.2.5.

Table 4.2 Weeds identified in the desktop within 50 kilometres of the survey area

Family	Taxon	Status (WAOL)	Recorded in the survey
Asteraceae	*Sonchus oleraceus*	Permitted - s11	No
Asteraceae	*Bidens bipinnata*	Permitted - s11	Yes
Malvaceae	*Malvastrum americanum*	Permitted - s11	Yes
Poaceae	*Cenchrus ciliaris*	Permitted - s11	Yes
Poaceae	*Cenchrus setiger*	Permitted - s11	No
Poaceae	*Setaria verticillata*	Permitted - s11	No

Family	Taxon	Status (WAOL)	Recorded in the survey
Polygonaceae	*Rumex vesicarius*	Permitted - s11	No
Portulacaceae	*Portulaca oleracea*	Permitted - s11	Yes
Solanaceae	*Solanum nigrum*	Permitted - s11	No

4.1.3 Conservation significant vegetation

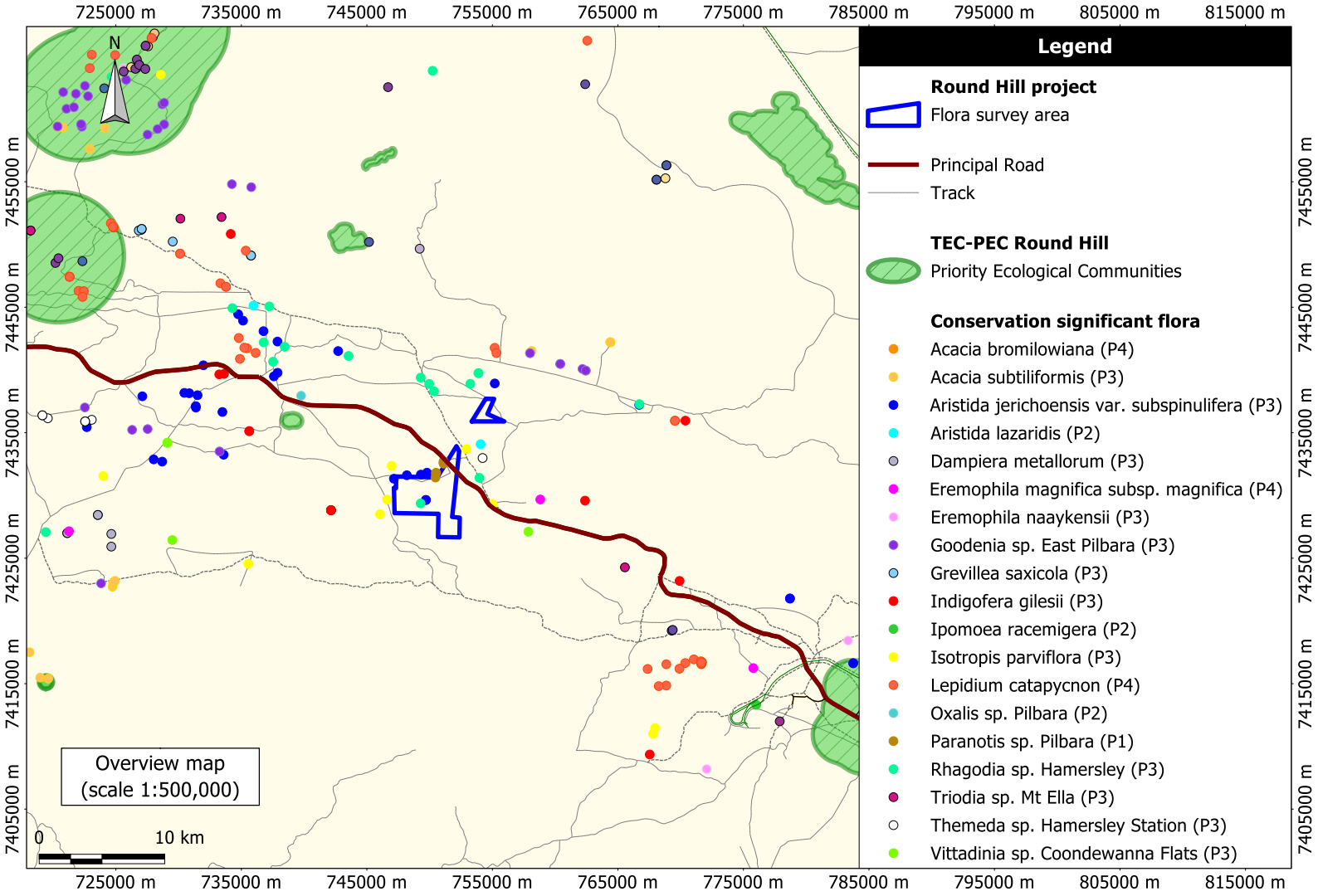
Search results of the DBCA Threatened and Priority Ecological Communities (TEC-PEC) database yielded seven PECs were within 50 kilometres of the survey area. These are discussed in (Table 4.3) against descriptions from the Priority Ecological Communities List (DBCA 2023). Distance of the nearest PEC boundaries relative to the survey area are shown in Figure 4.1. Review of the PEC locations, landforms, and descriptions indicates that all these PEC are considered unlikely to occur in the survey area.

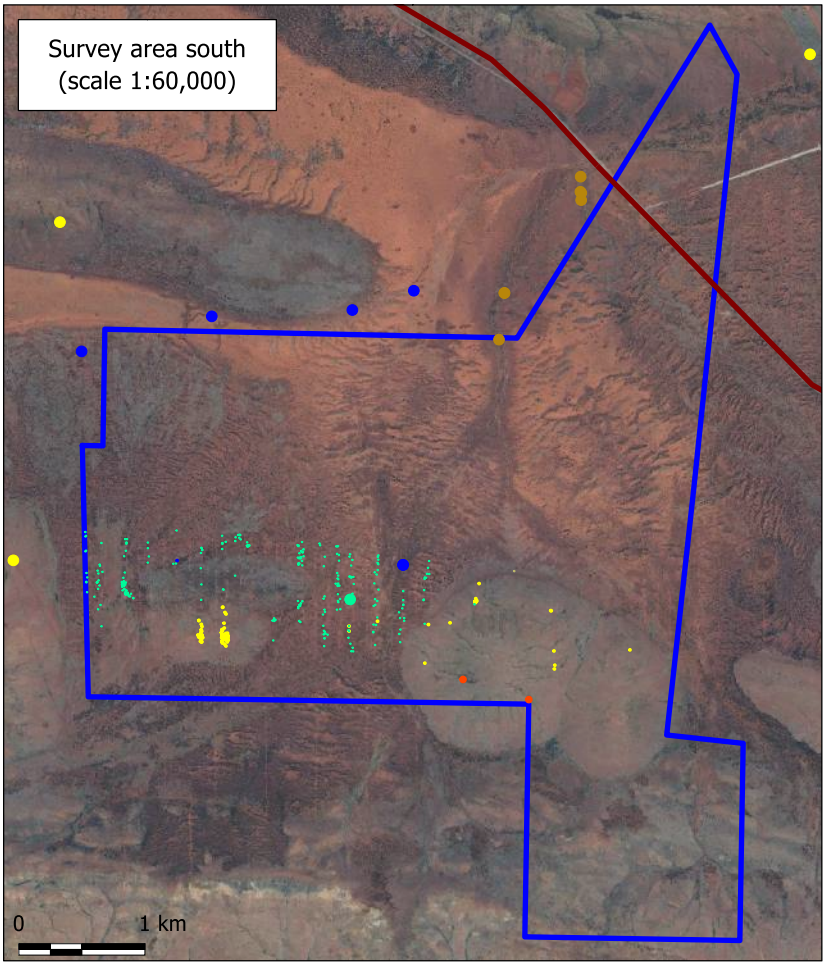
Table 4.3 Priority ecological communities identified in the desktop

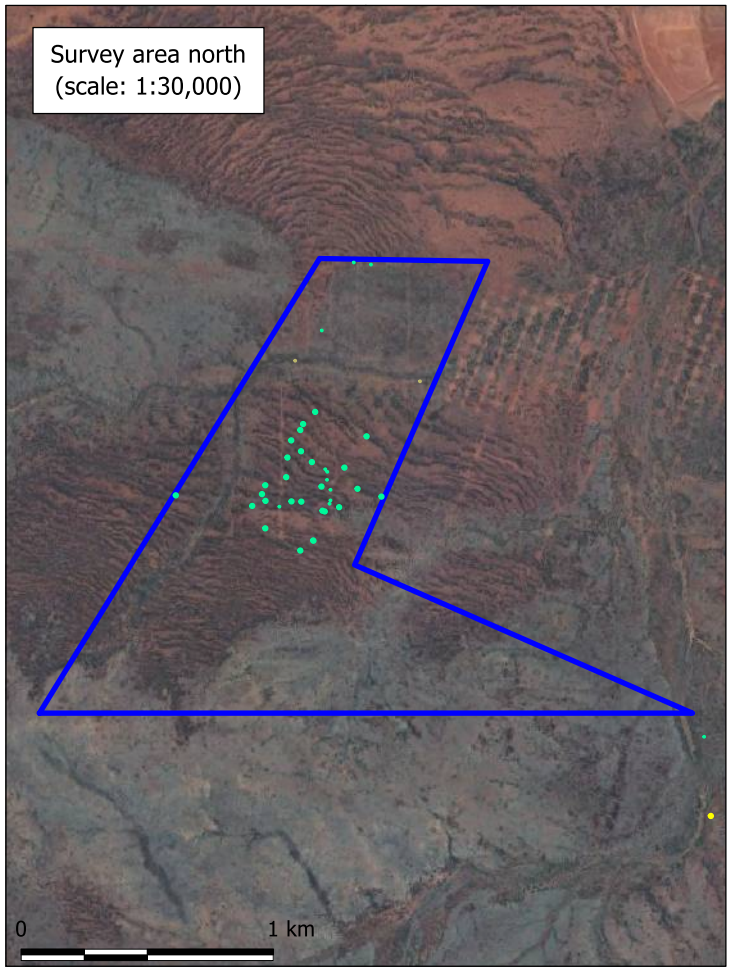
Name	Status	Description	Comments
Ethel Gorge Aquifer Stygobiont Community	Critically Endangered	The community is known from the Ethel Gorge (Ophthalmia Basin) alluvium calcrete aquifer on the Fortescue River in the vicinity of the town of Newman. It comprises a diverse assemblage of stygofauna species and is the known occurrence of this community. At least one species of *Chydaekata* is known only from this community.	Located approximately 32 kilometres southeast from the Round Hill survey area. As the survey area is not located on the Fortescue River and does not contain large calcrete deposits like those present at Ethel Gorge, this PEC is considered unlikely to occur in the survey area.
Coolibah - Lignum Flats (sub-type 1)	Priority 3	Woodland or forest of *Eucalyptus victrix* (coolibah) over thicket of *Duma florulenta* (lignum) on red clays in run-on zones. Associated species include *Eriachne benthamii*, *Themeda triandra*, *Aristida latifolia*, *Eulalia aurea* and *Acacia aneura*. Three subtypes have been identified as part of this community. Sub-type 1 is described as Coolibah and mulga (*Acacia aneura*) woodland over lignum and tussock grasses on clay plains (Coondewanna Flats and Wanna Munna Flats). **Threats:** dewatering and grazing, clearing associated with infrastructure corridors, altered fire regimes leading to changes in floristics and structure, weed invasion.	Located approximately 8-9 kilometres west at the closest point, to the Round Hill survey area. *Eucalyptus victrix* woodlands were not recorded in the survey area and the vegetation within the survey area does not resemble that of the survey area. The PEC is considered unlikely to occur in the survey area.
Vegetation of sand dunes of the Hamersley Range/Fortescue Valley (*previously 'Fortescue*	Priority 3	Red linear iron-rich sand dunes lie on the Divide Land system at the junction of the Hamersley Range and Fortescue Valley, between Kalgan Creek and the	Several sites approximately 28 to 45 km northeast-northwest of the survey area.

Name	Status	Description	Comments
Valley Sand Dunes')		low hills to the west. A small number are vegetated with *Acacia dictyophleba* scattered tall shrubs over *Crotalaria cunninghamii*, *Trichodesma zeylanicum* var. *grandiflorum* open shrubland. They are regionally rare, small and fragile and highly susceptible to threatening processes. Previously 'Fortescue Valley Sand Dunes'. **Threats**: weed invasion especially buffel grass, grazing by cattle, altered fire regimes, erosion and clearing for mining and infrastructure.	Sand dunes were not recorded in the survey area and the vegetation within does not resemble that of the PEC description. The PEC is considered unlikely to occur in the survey area.
Riparian communities of springs and pools in the Pilbara	Priority 2	The community includes flora with restricted distributions or populations that are highly disjunct or are major range extensions from northern and eastern Australia. These include *Imperata cylindrica*, *Cladium procerum, Schoenus falcatus* and *Fimbristylis sieberiana* (P3). In the Pilbara these taxa are almost exclusively restricted to the riparian zones of permanent wetlands with high soil moisture maintained by groundwater flows. Occurrences are disjunct with sites typically associated with groundwater discharge in gorge and valley wetlands that are often coupled with significant shading. **Threats:** hydrological change associated with mining, altered fire regimes, weed invasion (*Cenchrus ciliaris*, *Passiflora foetida*), grazing (camels), increased visitation.	Several sites approximately 20 kilometres northwest of the study area surrounding the priority 3 Kumina Land System. The survey area does not contain permanent wetlands, and the vegetation described for the PEC has not been recorded within. This PEC is considered unlikely to occur in the survey area.
Kumina Land System	Priority 3	Ferricrete duricrust plains, uplands and plateaux remnants, relief up to 15 m. Duricrust plains and plateau remnants support hard spinifex grasslands. **Threats:** mining	Several areas located approximately 16 kilometres northwest of the survey area. The Kumina land system does not occur within the survey area. This PEC is considered unlikely to occur in the survey area.
Weeli Wolli Spring community	Priority 1	Weeli Wolli Spring's riparian woodland and forest associations are unusual because of the composition of the understorey. The sedge and herb field communities that fringe many of the pools and associated water bodies along the main channels of Weeli Wolli Creek have not been recorded from any other	Several sites approximately 26 to 33 kilometres northwest of the Round Hill survey area. No permanent wetlands or large calcrete deposits have been recorded

Name	Status	Description	Comments
		wetland site in the Pilbara. The spring and creek line are also noted for their relatively high diversity of stygofauna, and this is probably attributed to the large-scale calcrete and alluvial aquifer system associated with the creek. The valley of Weeli Wolli Spring also supports a very rich microbat assemblage including a threatened species. **Threats:** dewatering and re-watering altering patterns of inundation, weed invasion, increased visitation.	within the survey area. This PEC is considered unlikely to occur in the survey area.
West Angelas Cracking Clays	Priority 1	Open tussock grasslands of *Astrebla pectinata*, *Astrebla elymoides*, *Aristida latifolia*, in combination with low scattered shrubs of *Sida fibulifera*, on basalt (Jerrinah formation) derived cracking-clay loam depressions and flowlines. Occurs throughout the central and eastern Hamersley Range from near Tom Price east to Newman. **Threats:** clearing for mining, infrastructure and solar farms, possible weed invasion, fragmentation and altered fire regimes.	Several sites located approximately 30 – 40 kilometres southwest of the survey area. Key defining flora taxa in the vegetation description of this PEC were not recorded during the flora survey. This PEC is considered unlikely to occur in the survey area.







Rapallo environmental

Hanroy / Hancock Prospecting
Round Hill
Detailed flora and vegetation survey
(September 2023, April 2024)

Original Size: A4
Scale: 1:500,000 (overview map)
Datum: MGA94 Zone 50

0 10 km

Figure 4.1

Flora desktop results:
Conservation significant flora and
Priority ecological communities

4.2 Field survey results

4.2.1 Flora taxa recorded during the survey

The two-season flora and vegetation survey of the Round Hill survey area recorded 299 flora taxa from 47 different families. The most well represented families were Fabaceae (60 taxa), Poaceae (51 taxa), and Malvaceae (32 taxa).

The survey recorded five conservation significant taxa and four weeds, as discussed below. The full list of flora taxa recorded during the survey is presented in Appendix IV. A list of quadra locations and survey dates is presented in Appendix V. Quadrat data is presented in Appendix VI.

4.2.2 Conservation significant flora

Five conservation significant flora taxa were recorded in the survey area, as mapped in Figure 4.3. All of these were listed DBCA priority taxa. No Threatened flora were recorded. Four of the Priority taxa recorded during the study had been recorded in the survey area previously as identified in the desktop study, while one taxon (*Ipomoea racemigera*, Priority 2) was new to the survey area. Conservation significant flora are described in detail in section 4.1.1 above.

4.2.3 Flora of other significance

Flora species, subspecies, varieties, hybrids, and ecotypes may be considered significant for reasons other than listing as a Threatened or Priority flora taxon. This may include, but is not limited to, range extensions, keystone species, relic status, local endemism and anomalous features (EPA 2004). No flora taxa that matched these criteria were recorded in the survey area.

4.2.4 Phreatophytes

Phreatophytes are taxa dependent on groundwater. Obligate phreatophytes are taxa that can only occur in areas with access to permanent groundwater, with the strongest indicators being *Melaleuca argentea*. Facultative phreatophytes are taxa that can also occur in areas without permanent access to groundwater. No obligate or facultative phreatophytes were recorded in the survey area.

4.2.5 Introduced flora taxa (weeds)

Four introduced flora taxa (weeds) were recorded during the survey, these are listed previously in Table 4.2. Weeds were recorded in five of the seven broad vegetation types identified during the survey, as summarised in Table 4.4.

The greatest number of weeds species were recorded from vegetation type A which supported all four weed taxa detected during the survey.

Note that numbers in Table 4.4 represent the number of quadrats where these species were recorded, not the number of individual plants at these locations, with presence of a weed species within a quadrat counted as one occurrence, regardless of whether it was (for example) a single plant, multiple plants in various spots within the quadrat, or a dense population covering half the quadrat.

Table 4.4 Weeds recorded during the survey

Family	Taxon	WAOL status	Vegetation code						
			A	B	C	D	E	F	G
Asteraceae	**Bidens bipinnata*	Permitted - s11	10	2	4		1	2	
Malvaceae	**Malvastrum americanum*	Permitted - s11	2						
Poaceae	**Cenchrus ciliaris*	Permitted - s11	3				1		
Portulacaceae	**Portulaca oleracea*	Permitted - s11	9	1					

None of the weeds recorded during the survey were considered Weeds of National Significance (WONS) (Centre for Invasive Species Solutions 2021), or were they listed as declared pests, prohibited, or requiring a permit under the *Biosecurity and Agriculture Management Act 2007*, nor were any of them identified by DBCA as 'Priority Alerts' for the Pilbara region.

4.2.6 Vegetation of the survey area

Seven vegetation types were identified, described, and mapped across the Round Hill survey area. Vegetation classification comprised a combination of PATN analysis, refined by manual classification.

The PATN dendrogram is presented in Figure 4.2. Classification produced by PATN aligned well with manual classification, and no quadrats were classified differently from the PATN outcomes.

Vegetation types recorded in the Round Hill survey area are summarised in Table 4.5 and described in Table 4.5. The vegetation map is presented in Figure 4.3.

Table 4.5 Vegetation types recorded in the Round Hill survey area: Summary table

Code	Name	Quadrats	Area (ha)	Area %
A	Mulga woodland over diverse tussock grassland on plains	11	839	40.0%
B	Banded mulga woodland over *Triodia pungens* and *Triodia vanleeuwenii*	8	507	24.2%
C	*Eucalyptus leucophloia* over *Triodia vanleeuwenii* and *Triodia pungens* on stony plains and rises	8	200	9.5%
D	*Acacia catenulata*, *Acacia citrinoviridis*, and *Corymbia hamersleyana* over *Triodia pungens* and *Triodia vanleeuwenii* in drainage lines	2	9	0.4%
E	*Acacia catenulata* and *Corymbia hamersleyana* over *Triodia pungens* and *Themeda triandra* in drainage at the base of low hills	2	15	0.7%
F	*Triodia vanleeuwenii* and *Triodia wiseana* spinifex grassland with emergent *Eucalyptus leucophloia* on low hills and stony rises	7	315	15.0%
G	*Triodia wiseana* and *Triodia angusta* closed spinifex grassland with emergent mallees and shrubs on undulating stony plain	3	212	10.1%

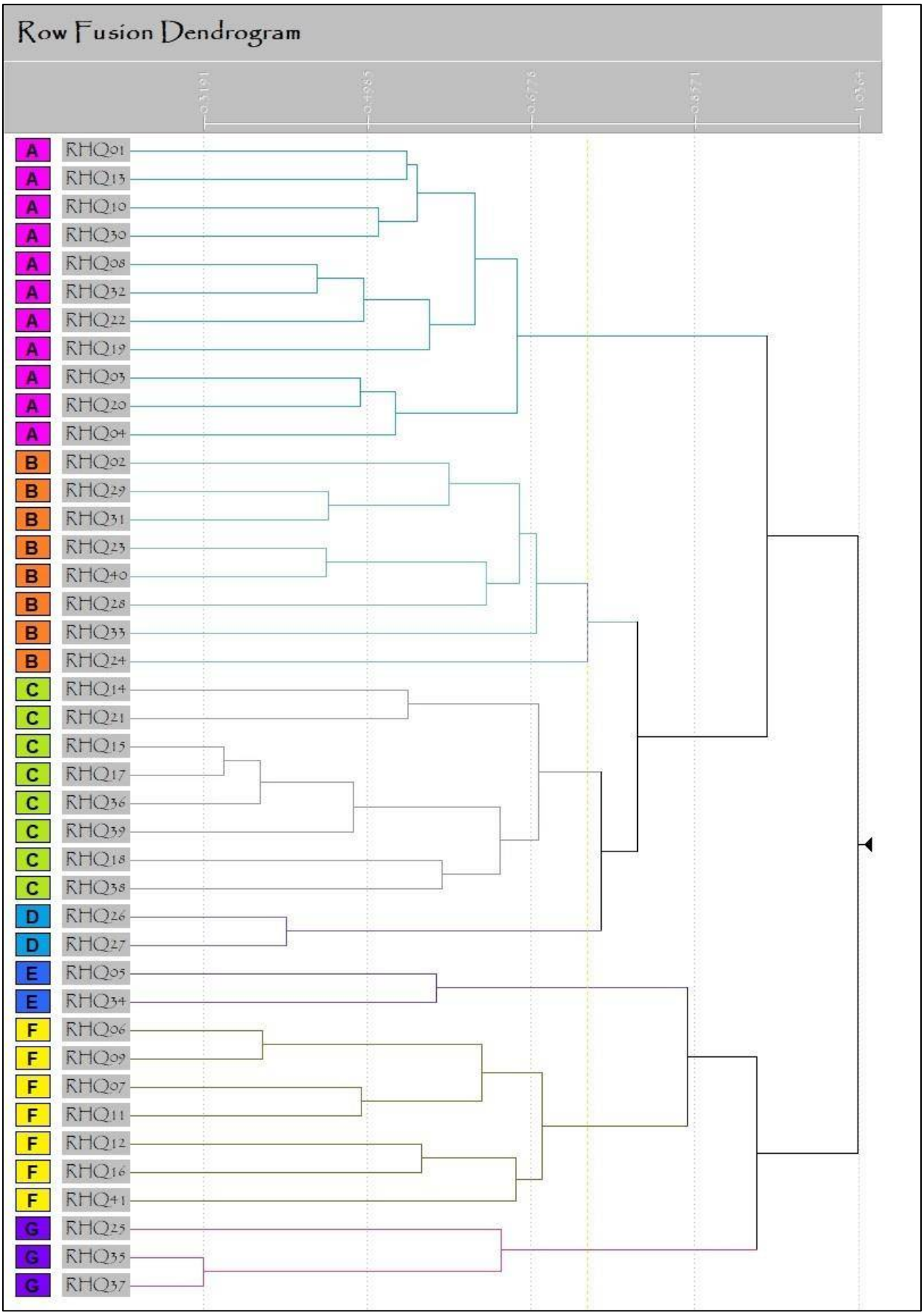


Figure 4.2 PATN dendrogram

Table 4.6 Vegetation types recorded in the Round Hill survey area

Code	Vegetation type	Photo
A	**Mulga woodland over diverse tussock grassland on plains** Description: *Acacia aptaneura*, *Acacia catenulata* subsp. *occidentalis*, *Acacia* sp. (aneura complex), and *Acacia pruinocarpa* low open woodland with occasional *Corymbia candida* and *Eucalyptus xerothermica*; over Acacia rhodophloia, *Hakea lorea* subsp. *lorea*, and *Acacia tetragonophylla* tall shrubs; over *Eremophila galeata*, *Eremophila forrestii* subsp. *forrestii*, *Senna artemisioides* subsp. *helmsii*, and Psydrax latifolia medium shrubs; over Ptilotus obovatus, Ptilotus schwartzii, Gomphrena canescens subsp. canescens low shrubs; over *Arivela viscosa*, *Enchylaena tomentosa*, *Abutilon otocarpum* , *Evolvulus* alsinoides var. *villosicalyx* forbs; over diverse tussock grassland dominated by *Eriachne benthamii*, *Chrysopogon fallax*, *Aristida contorta* and *Themeda triandra*; and isolated *Triodia pungens* hummock grasses; with *Sida* sp. L (A.M. Ashby 4202), *Duperreya commixta*, and **Portulaca oleracea* creepers/climbers, and *Cheilanthes sieberi* ferns. Landform: Plain, non-incised drainage, medium drainage channel Land systems: Wannamunna Land System (primarily) and Spearhole Land Systems Extent: 839 hectares (40.0% of the survey area) Quadrats: RHQ01, RHQ03, RHQ04, RHQ08, RHQ10, RHQ13, RHQ19, RHQ20, RHQ22, RHQ30, RHQ32 Vegetation condition: Very good to good Disturbances: Roads or tracks, signs of grazing, exploration, rubbish, weeds Conservation significant flora: *Rhagodia* sp. Hamersley (M. Trudgen 17794) (P3), *Ipomoea racemigera* (P2), *Aristida jerichoensis* var. *subspinulifera* (P3) GDV indicator species: None recorded Weeds: **Bidens bipinnata, *Cenchrus ciliaris, *Malvastrum americanum, *Portulaca oleracea*	 Quadrat RHQ22 in season 1

Code	Vegetation type	Photo
B	**Banded mulga woodland over *Triodia pungens and Triodia vanleeuwenii*** Description: *Acacia catenulata* subsp. *occidentalis*, *Acacia aptaneura*, *Acacia pruinocarpa*, *Grevillea berryana*, and *Eucalyptus leucophloia* low woodland to open woodland; over *Acacia ayersiana*, *Acacia tetragonophylla*, and *Acacia incurvaneura* tall shrubland; over *Eremophila forrestii* subsp. *forrestii*, *Eremophila galeata*, *Acacia adsurgens*, *Eremophila exilifolia*, *Anthobolus leptomerioides* and *Psydrax latifolia* shrubland; over *Ptilotus obovatus*, *Hibiscus burtonii* low to dwarf shrubs; over *Arivela viscosa*, *Evolvulus alsinoides* var. *villosicalyx*, *Euphorbia australis* var. *hispidula* forbs; over *Triodia pungens*, *Triodia vanleeuwenii*, Triodia melvillei, and Trioda wiseana open hummock grassland; and *Aristida inaequiglumis*, *Themeda triandra* and *Aristida contorta* tussock grasses; with *Cheilanthes sieberi* subsp. *sieberi ferns*; and *Cynanchum viminale* subsp. *australe* climbers. Landform: Plain, floodplain, small hill Land systems: Spearhole Land System (primarily) small extent in Boolgeeda Land System Extent: 507 hectares (24.2% of the survey area) Quadrats: RHQ02, RHQ23, RHQ24, RHQ28, RHQ29, RHQ31, RHQ33, RHQ40 Vegetation condition: Excellent, Very Good, Good Disturbances: Roads or tracks, signs of grazing, exploration, weeds Conservation significant flora: *Rhagodia* sp. Hamersley (M. Trudgen 17794) (P3) GDV indicator species: None Weeds: **Bidens bipinnata, *Portulaca oleracea*	 Quadrat RHQ40 in season 2

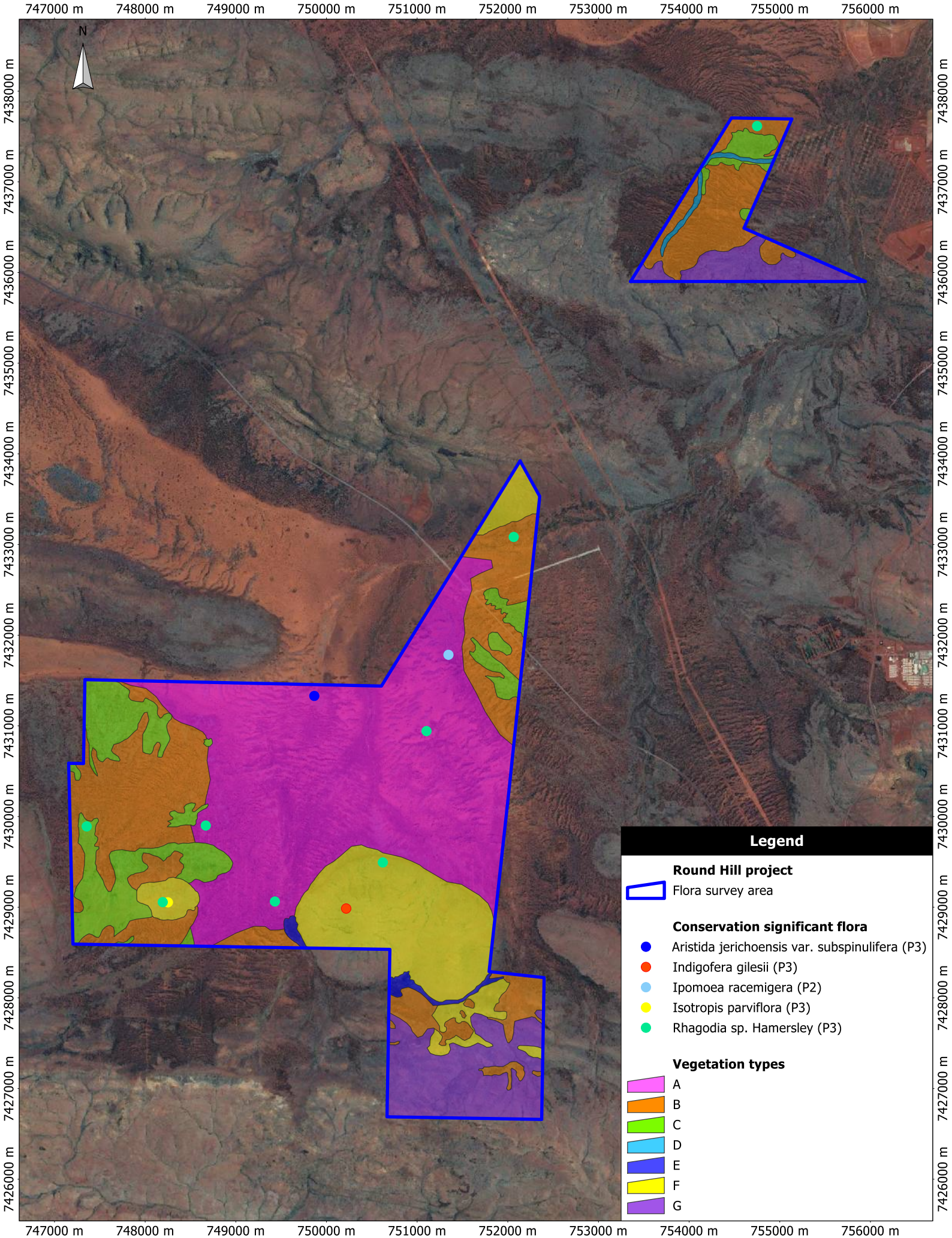
Code	Vegetation type	Photo
C	***Eucalyptus leucophloia* over *Triodia vanleeuwenii* and *Triodia pungens* on stony plains and rises** Description: *Eucalyptus leucophloia* subsp. *leucophloia*, *Acacia pruinocarpa*, *Acacia aptaneura*, and *Corymbia deserticola* subsp. *deserticola* low open woodland; over *Acacia catenulata* subsp. *occidentalis* and *Acacia* sp. (aneura complex) tall shrubs; over *Acacia rhodophloia*, *Acacia sibirica*, and *Eremophila exilifolia* shrubs; over *Ptilotus obovatus*, *Hibiscus sturtii*, *Seringia exastia* low shrubs; over *Hibiscus sturtii*, *Solanum lasiophyllum*, *Euphorbia australis* var *hispidula* sparse forbs; over *Triodia vanleeuwenii* and *Triodia pungens* hummock grassland; with Duperreya commixta climbers. Landform: Plain, stony plain, small hill Land systems: Spearhole Land System (primarily) and Newman Land System Extent: 200 hectares (9.5% of the survey area) Quadrats: RHQ14, RHQ15, RHQ17, RHQ18, RHQ21, RHQ36, RHQ38, RHQ39 Vegetation condition: Excellent, Very Good Disturbances: Roads or tracks, exploration, rubbish, signs of grazing, weeds Conservation significant flora: *Rhagodia* sp. Hamersley (M. Trudgen 17794) (P3) GDV indicator species: None recorded Weeds: **Bidens bipinnata*	 Quadrat RHQ15 in season 1

Code	Vegetation type	Photo
D	***Acacia catenulata*, *Acacia citrinoviridis*, and *Corymbia hamersleyana* over *Triodia pungens* and *Triodia vanleeuwenii* in drainage lines** Description: *Acacia catenulata* subsp. *occidentalis*, *Acacia citrinoviridis* and *Corymbia hamersleyana* low open forest; over *Petalostylis labicheoides*, *Senna artemisioides* subsp. x *artemisioides*, *Acacia pruinocarpa*, *Psydrax latifolia*, *Capparis lasiantha* medium to tall shrubs; over *Ptilotus obovatus*, *Eremophila forrestii* subsp. *forrestii* low shrubs; over *Arivela viscosa* sparse forbs; over *Triodia pungens* and *Triodia vanleeuwenii* hummock open hummock grassland; and *Eriachne mucronata* tussock grasses; with *Duperreya commixta* climbers. Landform: Medium drainage channel Land systems: Spearhole Land System Extent: 9 hectares (0.4% of the survey area) Quadrats: RHQ26, RHQ27 Vegetation condition: Excellent, Very Good Disturbances: Roads or tracks, signs of grazing Conservation significant flora: None recorded GDV indicator species: None recorded Weeds: None recorded	 Quadrat RHQ26 in season 1

Code	Vegetation type	Photo
E	***Acacia catenulata* and *Corymbia hamersleyana* over *Triodia pungens* and *Themeda triandra* in drainage at the base of low hills** Description: *Acacia catenulata*, *Corymbia hamersleyana*, *Eucalyptus xerothermica*, and *Santalum lanceolatum* low open forest; over *Acacia tenuissima*, *Acacia adsurgens*, *Acacia bivenosa* tall to medium shrubs; over *Seringia exastia* and *Androcalva luteiflora* low shrubs; over *Arivela viscosa* sparse forbs; over Triodia pungens and *Themeda triandra* closed hummock and tussock grassland; with *Duperreya commixta* climbers. Landform: Drainage depression at base of hill, Minor drainage Land systems: Newman and Spearhole Land System (occurs at intersection of these land systems) Extent: 15 hectares (0.7% of the survey area) Quadrats: RHQ05, RHQ35 Vegetation condition: Very good, Excellent Disturbances: None noted Conservation significant flora: None recorded GDV indicator species: None recorded Weeds: **Bidens bipinnata*, **Cenchrus ciliaris*	 Quadrat RHQ05 in season 2

Code	Vegetation type	Photo
F	***Triodia vanleeuwenii* and *Triodia wiseana* spinifex grassland with emergent *Eucalyptus leucophloia* on low hills and stony rises** Description: *Eucalyptus leucophloia* subsp. *leucophloia* (snappy gum), *Corymbia deserticola* subsp. deserticola and Corymbia hamersleyana isolated trees; over Acacia monticola and *Hakea chordophylla* tall shrubs; over *Acacia ancistrocarpa*, *Senna glutinosa* subsp. *glutinosa*, senna glutinosa subsp. *pruinosa*, and *Acacia adsurgens* medium shrubs; over *Acacia hilliana*, *Acacia adoxa* var. *adoxa*, *Androcalva luteiflora*, and Indigofera monophylla low shrubs; over *Goodenia triodiophila*, *Hibiscus burtonii*, *Solanum lasiophyllum* forbs; over *Triodia vanleeuwenii* and *Triodia wiseana* hummock grassland; with *Duperreya commixta* climbers. Figs (*Ficus brachypoda*) grow in the minor gullies in the Round Hill landform. Landform: Hilltop and hillslopes, stony rises, minor drainage channels Land systems: Newman Land System (primarily), Boolgeeda Land System Extent: 315 hectares (15.0% of the survey area) Quadrats: RHQ06, RHQ07, RHQ09, RHQ11, RHQ12, RHQ16, RHQ41 Vegetation condition: Very Good, Excellent Disturbances: Roads or tracks, exploration, old fire scars, weeds Conservation significant flora: *Rhagodia* sp. Hamersley (M. Trudgen 17794) (P3), *Indigofera gilesii* (P3), *Isotropis parviflora* (P3) GDV indicator species: None recorded Weeds: **Bidens bipinnata*	 Quadrat RHQ06 in season 2

Code	Vegetation type	Photo
G	***Triodia wiseana* and *Triodia angusta* closed spinifex grassland with emergent mallees and shrubs on undulating stony plain** Description: *Eucalyptus socialis* subsp. *eucentrica*, *Eucalyptus leucophloia* subsp. *leucophloia*, and *Eucalyptus trivalva* low open woodland to isolated trees; over Acacia sibirica, *Acacia tetragonophylla*, *Acacia synchronicia*, and *Acacia bivenosa* sparse to isolated shrubs; over *Scaevola spinescens* and *Eremophila lachnocalyx* isolated low shrubs; over *Triodia wiseana* and *Triodia angusta* closed hummock grassland. Patches of tall sparse shrubland dominated by *Acacia inaequilatera* occur along minor drainage lines within this vegetation type. Landform: Undulating stony plain Land systems: Rocklea and Spearhole Land Systems Extent: 212 hectares (10.1% of the survey area) Quadrats: RHQ25, RHQ35, RHQ37 Vegetation condition: Excellent Disturbances: None noted Conservation significant flora: None recorded GDV indicator species: None recorded Weeds: None recorded	 Quadrat RHQ35 in season 2



Rapallo environmental

Hanroy / Hancock Prospecting
Round Hill
Detailed flora and vegetation survey
(September 2023, April 2024)

Original Size: A4
Scale: 1:50,000
Datum: MGA94 Zone 50

0 1 km

Figure 4.3

Vegetation types and conservation significant flora recorded in the Round Hill survey area

4.2.7 Vegetation condition of the survey area

Vegetation condition of the survey area was mapped using vegetation polygons as a basis, with each polygon assigned the vegetation condition score recorded for the quadrats within. Where multiple quadrats occurred within a polygon, the dominant condition score was used to represent the whole polygon. For several polygons there was an equal number of quadrats classified as good and very good, with no clear boundaries visible between areas of varying condition. These polygons were classified as Good to Very good.

Due to the size of the survey area, approximately 44% of the polygons did not have a quadrat within. For these polygons vegetation condition was either assigned based on vegetation notes and photos (if available), or extrapolated from aerial photography and condition scores of adjacent polygons.

Vegetation condition of the survey area is mapped in Figure 4.4. Vegetation condition of 32% the survey area was mapped as Excellent (664 hectares), 27% was mapped as Very Good (578 hectares), and 41% of the survey area (855 hectares) was mapped as Good to Very Good.

4.2.8 Conservation significant vegetation

None of the vegetation types recorded in the survey area aligned with known Threatened or Priority Ecological Communities, as discussed in the desktop (section 4.1.3). The desktop study concluded that the survey area is unlikely to contain any (currently) listed conservation significant vegetation communities.

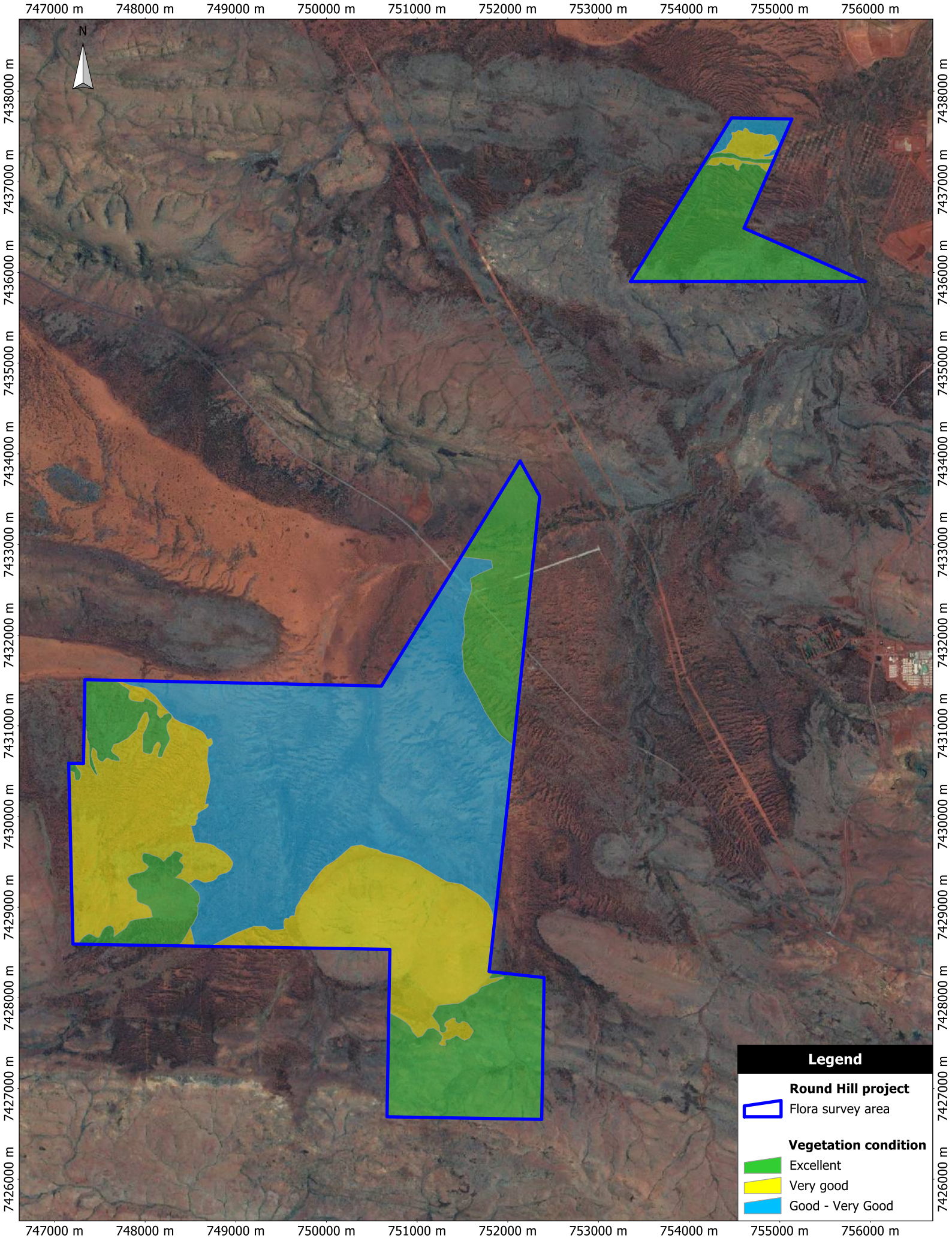
Vegetation may be of significance for reasons other than a listing as a TEC or a PEC. This may include, although is not limited to, having a restricted distribution, historical impact from threatening processes, a role as a refuge for protected flora and fauna, providing an important function required to maintain ecological integrity of a significant ecosystem (EPA 2016c).

Local significance can be determined where a vegetation type is confined to a specialised habitat and/or landform that is not common in the local area or the vegetation types are supporting conservation significant species or groundwater dependent species.

No taxa were recorded during the survey that indicates groundwater dependent vegetation.

Grove-intergrove mulga communities – Vegetation type A may be considered locally significant because it contains *Acacia aptaneura* (mulga) as the dominant upper storey species on stony plains and floodplains. This matches the broad description of 'grove-intergrove mulga communities' which is listed by Kendrick as one of the "ecosystems at risk" in the Fortescue Plains subregion (PIL2) of the Pilbara IBRA region (Kendrick 2001b).

Vegetation type F, A and B have a slightly raised local importance due to the presence of priority taxa, as a dominant taxon in the vegetation structure. Vegetation type F is supports *Isotropis parviflora* (Priority 3). Vegetation types A and vegetation type B support *Rhagodia* sp. Hamersley (Priority 3) based on both results of this survey, and the results of targeted searches completed earlier as presented in the desktop (Hancock 2022). However, these vegetation types are not considered regionally significant because *Isotropis parviflora* and *Rhagodia* sp. Hamersley (Priority 3) occur in a variety of habitats not just the vegetation types found on the survey area.



Rapallo environmental

Hanroy / Hancock Prospecting
Round Hill
Detailed flora and vegetation survey
(September 2023, April 2024)

Original Size: A4
Scale: 1:50,000
Datum: MGA94 Zone 50

0 1 km

Figure 4.4

Vegetation condition across the survey area

4.3 Survey adequacy and limitations

4.3.1 Survey completeness

To provide an indication of survey completeness of the detailed flora survey, the software program EstimateS (Version 9.1.0) (Colwell 2013) was used to generate species accumulation curves and to calculate predicted species richness. Species accumulation curves represent a theoretical model of the relationship between survey effort and species accumulation: as the number of quadrats increases, the accumulation of flora taxa decreases until the curve reaches an asymptote (Gotelli & Colwell 2011).

Since models can only be generated from data collected through systematic methods, the species accumulation curve and predicted species richness could only be calculated from quadrat data. Analyses were conducted on presence-absence data from all 41 quadrats sampled. Taxa that were identified only to family level, and taxa identified only to genus level when there were multiple species of that genus present in the dataset were excluded from the analysis. Weeds were retained in the dataset. The total number of taxa included in the analysis was 283.

Analysis was completed on abundance data coded as cover scores (1-5), using the default settings, with the following exceptions:

- Accumulations (runs) were randomised 10,000 times without replacement.
- Upper abundance limit for rare or infrequent species was set to 5.

The species accumulation curve is presented in Figure 4.5, plotting number of flora taxa (y-axis) against the number of quadrats surveyed (x-axis). Observed species richness is presented as a sample-based rarefaction curve, computing the mean expected number of flora taxa (S(est)) over all possible combinations of 1, 2, and up to 41 quadrats (Colwell *et al.* 2012). Predicted species richness was calculated by taking the average of the estimators ACE, Chao 1 and Jackknife 1.

Predicted species richness was 384 taxa, which indicates that 81% of the (estimated) total flora taxa present in the Round Hill survey area were recorded in the quadrats. This is reflected in the species accumulation curve, which after 41 quadrats has started to approach an asymptote (Figure 4.5).

Opportunistic collections and collections at vegetation notes and relevés yielded an additional eight fully identified taxa which were not recorded in quadrats. This indicates that the survey recorded 84% of predicted taxa.

Another way of illustrating survey completeness is to look at the rate of increase, defined here as the percentage increase in taxa with each additional quadrat sampled. After 41 quadrats, the rate of increase had dropped to 0.7% or less than two additional taxa per additional quadrat sampled. This indicates that significant additional sampling effort would be required to reach the predicted total of 348 taxa. Extrapolation of the rarefaction curve calculated by EstimateS (Colwell *et al.* 2012) further supports this.

In summary, survey effort was adequate to sample the vegetation of the survey area, recording approximately 81% of the predicted floristic diversity from quadrats, and 84% of predicted over the survey as a whole.

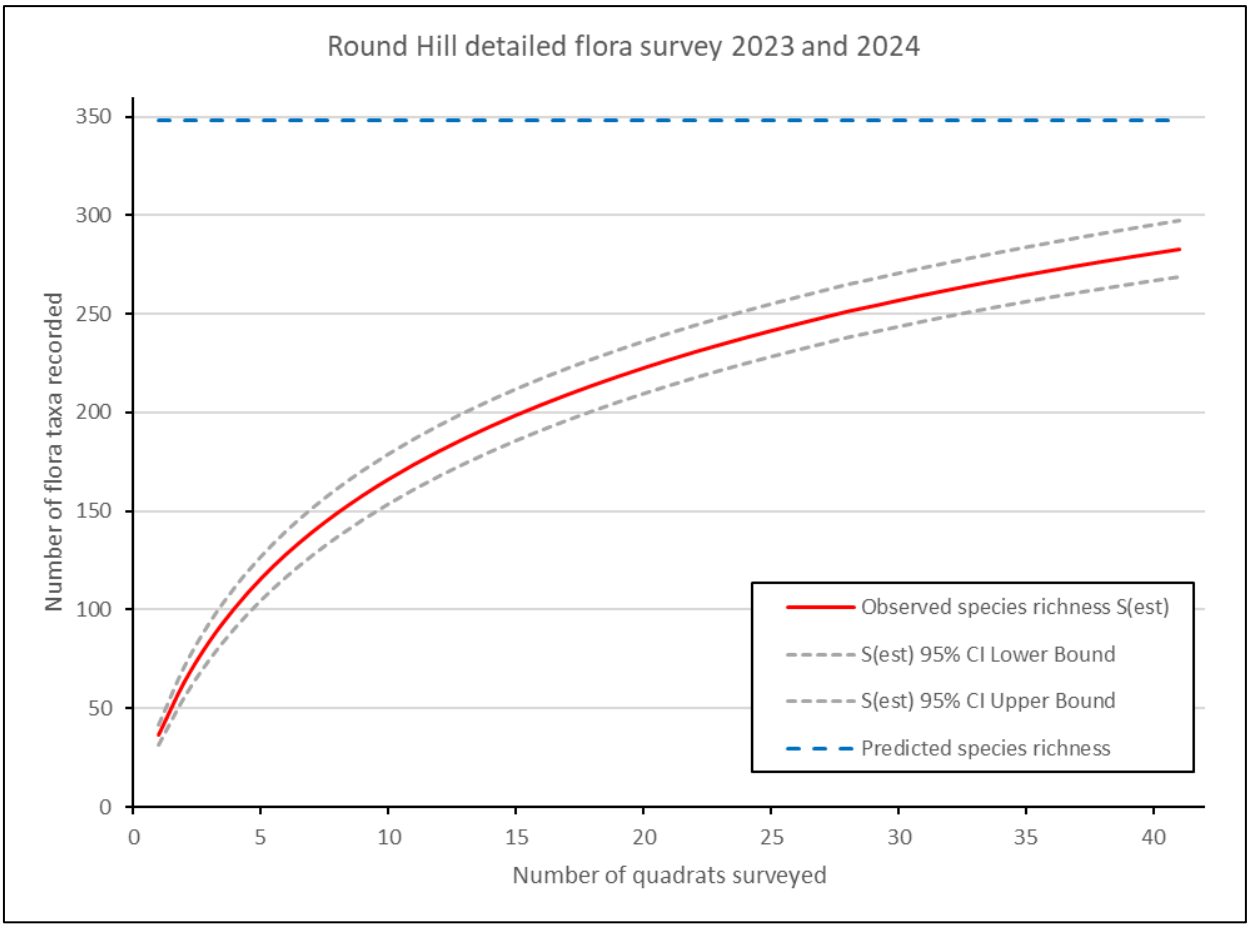


Figure 4.5 Species accumulation curve after two survey seasons

4.3.2 Assessment against EPA technical guidance

The detailed flora and vegetation survey was conducted in accordance with Environmental Protection Authority (EPA) *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* and aligned with criteria for a detailed flora survey (EPA 2016c). An assessment of the survey against EPA criteria for detailed flora and vegetation surveys, and for quadrat sampling, is provided in Table 4.7.

Table 4.7 Assessment of the survey against EPA technical guidance

EPA (2016c) criteria for detailed flora surveys	Survey met EPA criterion	Details
Surveys should be conducted during optimal survey timing for the botanical province.	Yes	A two-season detailed flora and vegetation survey was completed over the Round Hill survey area in September 2023 and April 2024. This timing comprised the recommended secondary (2023) and primary (2024) survey season for the Eremaean botanical province.
Adequate survey may necessitate multiple sampling events in the same season or in different seasons.	Yes	The survey was completed in two phases to cover two different seasons.
Where desktop results indicate that there is insufficient local and regional information, the survey must extend beyond the proposal area.	Yes	Sufficient local and regional information is available.

EPA (2016c) criteria for detailed flora surveys	Survey met EPA criterion	Details
Quadrats should be placed at representative locations throughout the survey area considering landform, geology, elevation, slope, aspect, surface or groundwater expression, and soil type, as well vegetation structure, composition, and condition.	Yes	Quadrats were positioned at representative locations within preliminary vegetation types identified at the time of survey. Quadrats were positioned within all land systems of the survey area. Quadrats were positioned within all landforms identified within the survey area.
Quadrats should be positioned to avoid the boundary or transition zone between vegetation units and to minimise the influence of edge effects.	Yes	Quadrats were positioned away from vegetation boundaries.
Where possible, quadrats should be located in intact mature vegetation and in areas of best condition.	Yes	Within each vegetation type, quadrats were positioned in the best quality representative areas within.
Survey design should consider disturbance events (such as fire).	Yes	Disturbances in the form of tracks, weeds, cattle and historic fire were present in some parts of the survey area and could not be completely avoided. However, these disturbances were minor and as above quadrats were positioned in the best quality representative vegetation.
Quadrat size should be appropriate for the bioregion.	Yes	Quadrats were 50 by 50 meters, as is appropriate for the Pilbara.
The survey effort should be adequate to characterise the flora and vegetation within the survey area.	Yes	The species accumulation curve indicates that the survey sampled 81% of the predicted floristic diversity of the survey area. Additional quadrats are unlikely to further improve vegetation classification and mapping of the survey area.
A minimum of three quadrats should be sampled in each vegetation unit. Quadrats within a widespread vegetation unit should be located to sample throughout its geographic range.	Yes	Seven vegetation types were identified in the survey area. Only vegetation types D and E were sampled with two quadrats each. However, these vegetation types covered a small percentage of the survey area (respectively 0.4% and 0.7%). All other vegetation types were sampled by 3 or more quadrats.
Detailed surveys of linear infrastructure should incorporate vegetation unit characterisation of an area 500-1000 m on both sides of the infrastructure corridor (where this is not already part of the survey area) to provide context for EIA.	Yes	The survey area did not comprise a linear survey corridor. The southern survey area was approximately 4 by 5 kilometres in size, and the northern area was approximately 1.8 by 0.8 kilometres. As such, it would be considered adequate for linear infrastructure placed within.
Opportunistic collections, systematic transects and targeted inspections of potential habitat are required to verify that the survey area has been well characterised and important values identified.	Yes	Opportunistic collections and mapping notes were taken throughout the survey area in both survey seasons.
Survey effort should be intensified in areas with unusual habitat or potential to provide habitat for conservation significant flora and or vegetation.	Yes	The vegetation of the survey area was generally considered representative for the region, with no unusual habitat identified during the survey.

4.3.3 Survey limitations table

Table 4.8 Limitations of the detailed flora survey

Aspect	Limitation	Discussion
Availability of contextual information at a regional and local scale	No	Sufficient flora and vegetation information was available to place the survey area in a regional context.
Competency/experience of the team carrying out the survey, including experience in bioregion surveyed	No	The survey was completed by a team of six botanist with experience completing biological surveys across Western Australia. The senior botanists on the survey each have extensive (10+ years) experience conducting and leading Pilbara surveys.
Proportion of flora recorded and/or collected, any identification issues	No	There were no identification issues.
Was the appropriate area fully surveyed (effort and extent)	No	The entire survey area was accessed and surveyed a combination of vehicle access and access on foot. Quadrats were positioned in all preliminary vegetation types, and across the entire survey area.
Access restrictions within the survey area	No	There were no survey limitations due to access restrictions.
Survey timing, rainfall, season of survey	No	The first survey season was completed in September 2023, and the second season survey in April 2024, which falls within the secondary and primary recommended timing for surveys in the Eremaean botanical province (EPA 2016c).
Disturbances that may have affected the results of the survey (e.g. fire, flooding, clearing)	No	The survey area has been affected by a variety of disturbances, with weeds, cattle, tracks, and fire. However, these disturbance were relatively minor, and extensive areas of undisturbed vegetation were available for sampling.

4.4 Conclusions

4.4.1 Summary of findings

The flora survey recorded 299 flora taxa from 47 different families. These comprised 295 native taxa and four introduced taxa (weeds). The survey recorded five conservation significant taxa, all Priority Flora listed by DBCA (*Aristida jerichoensis* var. *subspinulifera* (Priority 3), *Indigofera gilesii* (Priority 3), *Ipomoea racemigera* (Priority 2), *Isotropis parviflora* (Priority 3) and *Rhagodia* sp. Hamersley (Priority 3). No threatened flora taxa were recorded on the survey area.

The desktop study identified 36 conservation significant flora taxa recorded from within 50 kilometres of the survey area. All taxa were listed by DBCA as Priority Flora, with no threatened flora taxa identified in the desktop. Six taxa were assessed as highly likely to occur in the survey area, these were *Acacia bromilowiana* (Priority 4), *Aristida lazaridis* (Priority 2), *Eremophila magnifica subsp. magnifica* (Priority 4), *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727) (Priority 3), *Lepidium catapycnon* (Priority 4) and *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) (Priority 3).

Seven vegetation types were identified and mapped over the survey area.

- A – Mulga woodland over diverse tussock grassland on plains (839 hectares)
- B – Banded mulga woodland over *Triodia pungens* and *Triodia vanleeuwenii* (507 hectares)
- C – *Eucalyptus leucophloia* over *Triodia vanleeuwenii and Triodia pungens* on stony plains and rises (200 hectares)
- D – *Acacia catenulata, Acacia citrinoviridis*, and *Corymbia hamersleyana* over *Triodia pungens* and *Triodia vanleeuwenii* in drainage lines (9 hectares)
- E – *Acacia catenulata* and *Corymbia hamersleyana* over *Triodia pungens* and *Themeda triandra* in drainage at the base of low hills (15 hectares)
- F – *Triodia vanleeuwenii* and *Triodia wiseana* spinifex grassland with emergent *Eucalyptus leucophloia* on low hills and stony rises (315 hectares)
- G – *Triodia wiseana* and *Triodia angusta* closed spinifex grassland with emergent mallees and shrubs on undulating stony plain (212 hectares)

The survey area does not contain conservation listed vegetation communities.

Vegetation type F, A and B have a slightly raised local importance due to the presence of priority taxa, as a dominant taxon in the vegetation structure. Vegetation type F is supports *Isotropis parviflora* (Priority 3). Vegetation types A and vegetation type B support *Rhagodia* sp. Hamersley (Priority 3) based on both results of this survey, and the results of targeted searches completed earlier as presented in the desktop (Hancock 2022). However, these vegetation types are not considered regionally significant because *Isotropis parviflora* and *Rhagodia* sp. Hamersley (Priority 3) occur in a variety of habitats not just the vegetation types found on the survey area.

Vegetation type A may be considered locally significant because it contains *Acacia aptaneura* (mulga) as the dominant upper storey species on stony plains and floodplains. This matches the broad description of 'grove-intergrove mulga communities' which is listed by Kendrick as one of the "ecosystems at risk" in the Fortescue Plains subregion (PIL2) of the Pilbara IBRA region (Kendrick 2001b).

Vegetation condition of the survey area was mapped as Excellent (664 hectares: 32%), Very Good (578 hectares: 27%), and Good to Very Good. (855 hectares: 41%).

Survey effort was adequate to sample the vegetation of the survey area. Species richness estimators indicated that the survey recorded 81% of predicted taxa, which is reflected in the species accumulation curve which by the end of the survey had started to approach an asymptote.

4.4.2 Recommendations

As shown in Figure 4.1 the targeted surveys primarily followed exploration gridlines established up until 2022 and covered primarily the central southern parts of the southern survey area (including the Round Hill landform) and central parts of the northern survey area.

Targeted work is recommended for prior to clearing any areas not covered by the previous targeted work as shown in Figure 4.1. It is recommended that this targeted work occurs during the optimal survey time for the target species (when they are most likely to be in flower) in order to enable full identifications to species level.

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6 Appendices

Number	Title
Appendix I	Conservation codes for Australian Flora
Appendix II	Likelihood matrix for flora desktop
Appendix III	Flora desktop results: Conservation significant flora and likelihood assessment
Appendix IV	Flora taxa recorded in the Round Hill survey area
Appendix V	List of quadrat locations
Appendix VI	Quadrat data

Appendix I Conservation codes for Australian Flora

Threatened species under the Commonwealth EPBC Act

Threatened fauna and flora may be listed under Section 178 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in any one of the following categories:

EX Extinct

EW Extinct in the wild

CR Critically endangered

EN Endangered

VU Vulnerable

CD Conservation dependent

Conservation codes for Western Australian flora under the Western Australian *Biodiversity Conservation Act 2016*

Threatened, Extinct and Specially Protected fauna or flora are species which have been adequately searched for and are deemed to be, in the wild, threatened, extinct or in need of special protection, and have been gazetted as such.

The *Wildlife Conservation (Specially Protected Fauna) Notice 2018* and the *Wildlife Conservation (Rare Flora) Notice 2018* have been transitioned under regulations 170, 171 and 172 of the *Biodiversity Conservation Regulations 2018* to be the lists of Threatened, Extinct and Specially Protected species under Part 2 of the *Biodiversity Conservation Act 2016*.

Categories of Threatened, Extinct and Specially Protected fauna and flora are:

Threatened species

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

Threatened flora is that subset of 'Rare Flora' listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR Critically endangered species

Threatened species considered to be "facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.

Published under **schedule 1** of the *Wildlife Conservation (Rare Flora) Notice 201*8 for critically endangered flora.

EN Endangered species

Threatened species considered to be "facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under **schedule 2** of the *Wildlife Conservation (Rare Flora) Notice 2018 for endangered flora*.

VU Vulnerable species

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

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

Published under **schedule 3** of the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

Priority species

Priority species are possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

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

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations. In this report, priority species are given the codes P1, P2, P3 and P4.

P1 Priority 1: Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2 Priority 2: Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3 Priority 3: Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4 Priority 4: Rare, Near Threatened and other species in need of monitoring

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

(b) **Near Threatened**. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Appendix II Likelihood matrix for flora desktop

Does the survey area contain suitable habitat or the taxon	Distance of nearest earlier records to the survey area				
	0 km	10 km	30 km	50 km	100 km
Habitat preferences known and habitat present	Confirmed	Highly likely	Likely	Possible	Unlikely
Habitat preferences not (well) known but earlier records from similar geology / land systems as the survey area	n/a	Likely	Possible	Possible	Unlikely
Habitat preferences not (well) known, and earlier records NOT from similar geology / land systems as the survey area	n/a	Possible	Possible	Unlikely	Highly unlikely
Habitat preferences known and suitable habitat is absent	n/a	Unlikely	Highly unlikely	Highly unlikely	Highly unlikely

Ratings are down-graded based the likelihood of the taxon persisting in the locality, restricted distribution of the taxon, uncertainty of earlier records or the taxon's status. Ratings are down-graded when:

- Earlier locations the taxon was recorded have been impacted by fire, clearing, or other sever disturbances, and this disturbance could have completely removed or killed the taxon (for example it was a small herb or shrub and there was a fire, or the taxon was a tree or tall shrub, and the area was cleared)
- The earlier records are more than 20 years old, and the taxon is a small herb or shrub recorded only once or twice from that area.
- The status of the earlier records is not certain. For example, a taxon that was recorded once in a very old survey, or certainty was ranked as "low", or coordinates were very broad (e.g. decimal degrees with to two decimal places only), or there are doubts about the taxon's status (for example *Acacia* sp. Marble Bar which was recorded once only, not found again in that location, and may have been a hybrid)
- The taxon has only ever been recorded from one or two distinct localities and has never been found elsewhere, despite reasonable survey effort in the region.

Appendix III Flora desktop results: Conservation significant flora and likelihood assessment

Family	Scientific name	Status	Growth form	Flowering Period	Landform and Soil	Associated vegetation	Habitat present	Distance category	Same land system	Likelihood
Fabaceae	*Acacia bromilowiana*	P4	Tree or shrub, to 12 m high	July to August	Red skeletal stony loam, orange-brown pebbly, gravel loam, laterite, banded ironstone, basalt. Rocky hills, breakaways, scree slopes, gorges, creek beds.	Variety of habitats. Variety of eucalypts over (Acacia) shrublands, often over (dense) *Triodia* shrubland (variety of *Triodia* species). Closed hummock grassland of Triodia wiseana and Triodia pungens with very open mallee of *Eucalyptus kingsmillii* and *Corymbia hamersleyana* with scattered low trees of *Eucalyptus leucophloia* subsp. *leucophloia*.	Yes	0-10 km	Yes	Highly Likely
Fabaceae	*Acacia subtiliformis*	P3	Spindly, slender, erect single-stemmed shrub, to 3.5 m high	June	Grows on calcareous rises adjacent to drainage lines with *Eucalyptus*, *Melaleuca* and *Petalostylis* over spinifex.	Variety of shrublands (*Acacia, Hakea, Halgania*) often with Eucalypts (*E. leucophloia*, *Corymbia hamersleyana*, mallees) over variety of *Triodia* species including *T. wiseana, T. pungens, T. basedowii,* T. vanleeuwenii.	Possible	10-30 km	Yes	Possible
Poaceae	*Aristida jerichoensis* var. *subspinulifera*	P3	Compactly tufted perennial, grass-like or herb, 0.3-0.8 m high	July	Hardpan plains	Various habitat types, mulga woodlands/mixed acacia shrublands over tussock grasslands. Low open woodland of *Eucalyptus tephrodes*. Floodplains and drainages with brown-red sandy clay loam, Ironstone	Yes	0 km	Yes	Confirmed

Family	Scientific name	Status	Growth form	Flowering Period	Landform and Soil	Associated vegetation	Habitat present	Distance category	Same land system	Likelihood
						found within the drainages, no rocks on the flats.				
Poaceae	*Aristida lazaridis*	P2	Tufted perennial, grass-like or herb, 0.4-1.5 m high	April	Sand or loam	Variety of habitats, often mulga low open woodland with or without Eucalypts, over variety of shrubs and herbs, often over tussock grassland but sometimes with Triodia hummock grassland.	Yes	0-10 km	Yes	Highly Likely
Cyperaceae	Cladium procerum	P2	Densely tufted perennial, grass-like or herb (sedge), 2 m high	November	Perennial pools	Eucalyptus camaldulensis and Melaleuca argentea open woodland over Acacia pyrifolia var. pyrifolia; *Acacia tumida* var. *pilbarensis* and *Clerodendrum tomentosum* mid sparse shrubland over *Cladium procerum* and *Cyperus vaginatus* sedges and *Cenchrus ciliaris*;	No	30-50 km	No	Unlikely
Fabaceae	*Crotalaria smithiana*	P3	Annual, herb, to 0.4 m high	June	Regeneration site on floodplain	No info	Possible	30-50 km	Yes	Possible
Goodeniaceae	*Dampiera metallorum*	P3	Rounded, multistemmed perennial, herb, to 0.5 m high	April or June to October	Skeletal red-brown gravelly soil over banded ironstone. Steep slopes, summits of hills	Skeletal soil, Brockman BIF with *Pimelea forrestii*, *Dampiera* sp. and *Triodia* sp. Brockman BIF with E. leucophloia, Scaevola, Triodia. Skeletal soil, E. *ewartii*, *Dampiera*, Solanum, and *Triodia pungens* and *T. wiseana*. Skeletal gritty soil with *E.*	Yes	10-30 km	Yes	Likely

Family	Scientific name	Status	Growth form	Flowering Period	Landform and Soil	Associated vegetation	Habitat present	Distance category	Same land system	Likelihood
						kingsmillii, *E. gamophylla*, *E. ferriticola*, *Grevillea*, *Triodia*. Eucalyptus kingsmillii, *E. gamophylla, E. ferriticola, Eucalyptus* aff. *hamersleyana*, over variety of *Acacia* species, Petalostylis labicheoides, *Grevillea wickhamii* over DSC of Gompholobium. Often over *Trioda pungens* and/or *Triodia wiseana.*				
Poaceae	*Eragrostis* sp. Mt Robinson (S. van Leeuwen 4109)	P2	Tussock-forming perennial, grass-like or herb, to 0.3 m high	September	Red-brown skeletal soils, ironstone. Steep slopes, summits	No info	Yes	10-30 km	Yes	Likely
Scrophulariaceae	Eremophila magnifica subsp. magnifica	P4	Shrub, 0.5-1.5 m high	August to November	Skeletal soils over ironstone. Rocky screes.	Corymbia hamersleyana over Acacia sp. over Triodia vanleeuwenii and Triodia wiseana. Eucalyptus leucophloia, Corymbia hamersleyana low open woodland over Gossypium robinsonii shrubland over Triodia epactia hummock grassland. Variety of Triodia species including T. pungens, T. wiseana, T. vanleeuwenii.	Yes	0-10 km	Yes	Highly Likely
Scrophulariaceae	Eremophila naaykensii	P3	No info	May, August, September	Creek embankments and gorges with sandy loam soil.	Low open forest of Corymbia and Ficus trees over mixed tussock grassland with high open	Possible	10-30 km	Yes	Possible

Family	Scientific name	Status	Growth form	Flowering Period	Landform and Soil	Associated vegetation	Habitat present	Distance category	Same land system	Likelihood
						mixed shrubland.				
Scrophulariaceae	*Eremophila rigida*	P3	Bushy shrub, 0.3-4 m high.	September	Red sand alluvium. Hardpan plains, stony clay depressions	No info	No	30-50 km	No	Unlikely
Scrophulariaceae	*Eremophila* sp. West Angelas (S. van Leeuwen 4068)	P2	No info	No info	No info	No info	Possible	0-10 km	Yes	Likely
Scrophulariaceae	*Eremophila youngii* subsp. *lepidota*	P4	Dense, spreading shrub, (0.2)1-3 m high.	January or March or June or August to September.	Stony red sandy loam. Flats plains, floodplains, sometimes semi-saline, clay flats	Variety of vegetation types, often with Acacia aneura (mulga) and other Acacia species over variety of shrublands and herblands, often over (dense) Triodia species. Also recorded in tall open shrubland with mixed acacia and melaleuca with an understory of Chenopod shrubs. Acacia shrubland, with Atriplex spp., Frankenia sp., Bergia sp., Eragrostis sp., spinifex. Low shrubland with Halosarcia. Samphire dominated. Triodia and solanum.	Yes	30-50 km	Yes	Possible
Cyperaceae	*Fimbristylis sieberiana*	P3	Short rhizomatous, tufted perennial, grass-like or herb (sedge), 0.25-0.6 m high	May to June	Mud, skeletal soil pockets. Pool edges, sandstone cliffs	Eucalyptus camaldulensis and Melaleuca argentea open woodland over Acacia pyrifolia var. pyrifolia; Acacia tumida var. pilbarensis and Clerodendrum tomentosum mid sparse shrubland over Cladium	No	30-50 km	Yes	Unlikely

Family	Scientific name	Status	Growth form	Flowering Period	Landform and Soil	Associated vegetation	Habitat present	Distance category	Same land system	Likelihood
						procerum and Cyperus vaginatus sedges and Cenchrus ciliaris. Woodland to forest of Eucalyptus camaldulensis and/or Melaleuca leucadendra and Acacia coriacea subsp. pendens over high shrubland.				
Goodeniaceae	*Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727)	P3	Open, erect annual or biennial, herb, to 0.2 m high	August-September	Red-brown clay soil, calcrete pebbles. Low undulating plain, swampy plains.	Wide variety of vegetation types, including Corymbia and mixed Eucalypt woodlands. Open Acacia shrubland over dense Triodia.	Yes	0-10 km	Yes	Highly Likely
Proteaceae	*Grevillea saxicola*	P3	Trees or shrubs	March or June	No info	No info	Possible	10-30 km	Yes	Likely
Apocynaceae	*Gymnanthera cunninghamii*	P3	Erect shrub, 1-2 m high	January to December	Sandy soils.	Open low Eucalypt woodland over Acacia and Melaleuca shrubland over open Cenchrus and Triodia grassland	Possible	30-50 km	No	Unlikely
Malvaceae	*Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	P2	No info	No Info	No info	No info	Possible	10-30 km	Yes	Possible
Fabaceae	*Indigofera gilesii*	P3	Shrub, to 1.5 m high	May or August	Pebbly loam. Amongst boulders and outcrops, hills.	Variety of vegetation types, including open heath with Santalum lanceolatum and Acacia hamersleyensis. Steep, gritty soil with Eucalyptus kingsmillii, E. leucophloia over Ptilotus obovatus.	Yes	0 km	Yes	Confirmed

Family	Scientific name	Status	Growth form	Flowering Period	Landform and Soil	Associated vegetation	Habitat present	Distance category	Same land system	Likelihood
						Eucalyptus leucophloia over Eremophila and Triodia pungens. E. leucophloia, Corymbia ferriticola, E. gamophylla, E. kingsmillii, Mulga woodlands, acacia shrubland, over low shrubs and/or herbs, occasional spinifex."				
Convolvulaceae	*Ipomoea racemigera*	P2	Creeping annual, herb or climber	April, June	Drainage line with dark red clay with occasional ironstone pebble rock surface layer.	Variety of vegetation types associated with drainage, including low open forest of Eucalyptus Xerothermica, Acacia aptaneura and Hakea lorea over mixed tussock grassland and sedges; Open forest of Eucalyptus camaldulensis and Melaleuca argentea over low open woodland of mixed acacias over open shrubland of Myoporum montanum.	Yes	0 km	No	Confirmed
Fabaceae	*Isotropis parviflora*	P3	Shrub, 0.1 m high	March or June	Valley slope or ironstone plateau.	Variety of habitats, including open hummock grassland of Triodia with scattered Eucalyptus and Corymbia trees, over open mixed Acacia shrubland.	Yes	0 km	Yes	Confirmed
Brassicaceae	*Lepidium catapycnon*	P4	Open, woody perennial, herb or shrub, 0.2-0.3 m high	October	Skeletal soils. Hillsides.	Variety of vegetation types, typically with Eucalyptus leucophloia and/or Corymbia hamersleyana, over	Yes	0-10 km	Yes	Highly Likely

Family	Scientific name	Status	Growth form	Flowering Period	Landform and Soil	Associated vegetation	Habitat present	Distance category	Same land system	Likelihood
						Acacias and Sennas, over Triodia epactia, Triodia pungens, or mixed Triodia hummock grassland.				
Chenopodiaceae	*Maireana prosthecochaeta*	P3	Open, densely-leaved shrub, 0.3-0.6 m high	No Info	laterite. Hills, salty places.	No info	No	30-50 km	No	Unlikely
Oxalidaceae	*Oxalis* sp. Pilbara (M.E. Trudgen 12725)	P2	No info	May	Gorges with sandy loam soil.	Low open woodland of Eucalypts and Corymbia and occasional Ficus, Lepidium pedicellosum, Senna glutinosa subsp. luerssenii over Triodia pungens hummock grassland	Possible	0-10 km	Yes	Likely
Rubiaceae	*Paranotis* sp. Pilbara (H. Ajduk HAOP04a)	P1	No info	No Info	No info	No info	Yes	0 km	Yes	Confirmed
Amaranthaceae	*Ptilotus mollis*	P4	Compact, perennial shrub, to 0.5 m high	May or September	Stony hills and screes.	*Eucalyptus leucophloia* low open woodland over Ptilotus rotundifolius, Eucalyptus leucophloia (regrowth) and Ptilotus mollis low open shrubland over Triodia brizoides hummock grassland.	Possible	30-50 km	Yes	Possible
Chenopodiaceae	*Rhagodia* sp. Hamersley (M. Trudgen 17794)	P3	Spindly shrub to growing to 2 m tall.	March-September	Floodplains with red-brown sandy clay loam.	Recorded in wide variety of vegetation types, including Acacia thickets over mixed grassland. Emergent eucalypts over Triodia grassland. Very open mulga woodland over patchy mixed	Yes	0 km	Yes	Confirmed

Family	Scientific name	Status	Growth form	Flowering Period	Landform and Soil	Associated vegetation	Habitat present	Distance category	Same land system	Likelihood
						tussock grasses.				
Acanthaceae	*Rostellularia adscendens* var. *latifolia*	P3	Herb or shrub, 0.1-0.3 m	April to May	Ironstone soils. Near creeks, rocky hills.	Acacia shrubland, sometimes with Eucalypts and Corymbias, over shrublands and herblands, over tussock grassland, or Triodia pungens hummock grassland.	Yes	30-50 km	Yes	Possible
Malvaceae	*Sida* sp. Barlee Range (S. van Leeuwen 1642)	P4	Spreading shrub, to 0.5 m high	August	Skeletal red soils pockets. Steep slope.	Corymbia ferriticola, Eucalyptus leucophloia subsp. leucophloia, Acacia colei low open forest over Triodia epactia very open hummock grassland. Associated Species: Themeda triandra, Cymbopogon ambiguus, Duperreya commixta, Ficus brachypoda, Jasminum. Sometimes over Triodia hummock grassland.	Yes	10-30 km	Yes	Likely
Solanaceae	*Solanum kentrocaule*	P3	No info	No Info	No info	No info	Possible	10-30 km	Yes	Possible
Asteraceae	*Streptoglossa* sp. Cracking clays (S. van Leeuwen et al. PBS 7353)	P3	No info	No Info	Flats with sub-saline red clay loam.	Bunch grassland on flat terrain with sub-saline red clay loam.	No	10-30 km	Yes	Unlikely
Stylidiaceae	*Stylidium weeliwolli*	P3	Annual, herb, 0.1-0.25 m high	August to September	Gritty sand soil, sandy clay. Edge of watercourses.	Melaleuca dominated vegetation often associated with drainages with gritty sandy clay soil	No	10-30 km	Yes	Unlikely
Fabaceae	*Swainsona*	P3	Form erect herb	April, June	Stony hillslopes and	Scattered tall Acacia	Yes	10-30 km	Yes	Possible

Family	Scientific name	Status	Growth form	Flowering Period	Landform and Soil	Associated vegetation	Habitat present	Distance category	Same land system	Likelihood
	thompsoniana			or August	valley floors consisting of basalt and ironstone. Red-brown clay soil	shrubs over low open shrubland of mixed shrubs over Triodia hummock grassland associated with stony landscapes, hillslopes and valley floors, usually consisting with basalt and ironstone				
Poaceae	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	P3	Tussock perennial, grass-like or herb, 0.9-1.8 m high.	August	Red clay. Clay pan, grass plain.	Mostly mulga woodlands over mixed shrubland with the occasional Eucalyptus tree.	Yes	0-10 km	Yes	Highly Likely
Poaceae	*Triodia* sp. Mt Ella (M.E. Trudgen 12739)	P3	Hummock forming grass, foliage copiously resinous. Soft spinifex.	No Info	Occurs in rocky gullies, gorges and below cliffs on the side of hills and mountains.	No info	Possible	10-30 km	Yes	Possible
Asteraceae	*Vittadinia* sp. Coondewanna Flats (S. van Leeuwen 4684)	P3	No info	March, July	Floodplains and drainages consisting of red-brown-orange sandy clay loam.	Mixed mulga woodlands with scattered eucalypts, over diverse shrubland, often over open Triodia (T. pungens, T. melvillei) open grassland.	Yes	0-10 km	Yes	Likely

Appendix IV Flora taxa recorded in the Round Hill survey area

Family	Taxon	Status	Vegetation type						
			A	B	C	D	E	F	G
Aizoaceae	*Trianthema glossostigmum*		x	x					
Amaranthaceae	*Alternanthera denticulata*		x						
Amaranthaceae	*Alternanthera nana*		x					x	
Amaranthaceae	*Gomphrena canescens subsp. canescens*		x	x	x				
Amaranthaceae	*Gomphrena kanisii*		x	x				x	
Amaranthaceae	*Gomphrena lanata*		x	x					
Amaranthaceae	*Ptilotus calostachyus*				x			x	
Amaranthaceae	*Ptilotus canescens* subsp. *canescens*		x						
Amaranthaceae	*Ptilotus exaltatus*		x	x					
Amaranthaceae	*Ptilotus fusiformis*			x					
Amaranthaceae	*Ptilotus gaudichaudii*		x	x					
Amaranthaceae	*Ptilotus helipteroides*		x	x				x	
Amaranthaceae	*Ptilotus incanus*		x						
Amaranthaceae	*Ptilotus obovatus*		x	x	x	x	x	x	
Amaranthaceae	*Ptilotus polystachyus*		x		x			x	
Amaranthaceae	*Ptilotus roei*		x	x					
Amaranthaceae	*Ptilotus rotundifolius*			x	x			x	x
Amaranthaceae	*Ptilotus schwartzii*		x	x	x		x	x	
Amaranthaceae	*Ptilotus xerophilus*		x						
Apocynaceae	*Cynanchum viminale subsp. australe*			x	x			x	
Apocynaceae	*Leichardtia australis*		x						
Apocynaceae	*Vincetoxicum lineare*				x				
Asteraceae	**Bidens bipinnata*	Permitted - s11	x	x	x		x	x	
Asteraceae	*Calotis plumulifera*		x						
Asteraceae	*Chrysocephalum gilesii*		x						
Asteraceae	*Chrysocephalum pterochaetum*			x				x	
Asteraceae	*Peripleura arida*						x		
Asteraceae	*Pterocaulon sphacelatum*		x						
Asteraceae	*Rhodanthe charsleyae*		x						
Asteraceae	*Roebuckiella ciliocarpa*		x						
Asteraceae	*Streptoglossa bubakii*		x						
Asteraceae	*Streptoglossa sp.*		x						
Asteraceae	*Brachyscome iberidifolia*		x						
Asteraceae	*Brachyscome sp.*		x						
Boraginaceae	*Euploca cunninghamii*		x						
Boraginaceae	*Euploca heterantha*		x						
Boraginaceae	*Euploca inexplicita*			x					
Boraginaceae	*Trichodesma zeylanicum*		x	x	x			x	
Brassicaceae	*Lepidium pholidogynum*		x	x					
Brassicaceae	*Stenopetalum nutans*		x						

Family	Taxon	Status	Vegetation type						
			A	B	C	D	E	F	G
Capparaceae	*Capparis lasiantha*			x		x		x	x
Caryophyllaceae	*Polycarpaea corymbosa* var. *corymbosa*		x					x	
Celastraceae	*Stackhousia intermedia*							x	
Chenopodiaceae	*Dysphania rhadinostachya* subsp. *rhadinostachya*		x	x					
Chenopodiaceae	*Enchylaena tomentosa*		x		x				
Chenopodiaceae	*Maireana georgei*								x
Chenopodiaceae	*Maireana villosa*		x	x					
Chenopodiaceae	*Rhagodia* sp. Hamersley (M. Trudgen 17794)	Priority 3	x	x	x			x	
Chenopodiaceae	*Salsola australis*		x						
Cleomaceae	*Areocleome oxalidea*		x						
Cleomaceae	*Arivela viscosa*		x	x		x	x		
Convolvulaceae	*Bonamia erecta*						x	x	
Convolvulaceae	*Duperreya commixta*		x	x	x	x	x	x	x
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		x	x	x	x	x	x	
Convolvulaceae	*Ipomoea racemigera*	Priority 2	x						
Cucurbitaceae	*Cucumis melo*		x						
Cucurbitaceae	*Cucumis variabilis*		x	x	x			x	
Cyperaceae	*Bulbostylis barbata*		x	x				x	
Cyperaceae	*Bulbostylis turbinata*		x						
Cyperaceae	*Cyperus iria*		x						
Cyperaceae	*Fimbristylis dichotoma*		x	x				x	
Cyperaceae	*Fimbristylis simulans*		x		x			x	
Cyperaceae	*Neurachne muelleri*							x	
Cyperaceae	*Schoenoplectiella laevis*		x						
Euphorbiaceae	*Euphorbia australis* var. *hispidula*		x	x	x				
Euphorbiaceae	*Euphorbia biconvexa*		x				x		
Euphorbiaceae	*Euphorbia drummondii*						x		
Euphorbiaceae	*Euphorbia ferdinandi* var. *ferdinandi*		x						
Fabaceae	*Acacia adoxa var. adoxa*						x	x	
Fabaceae	*Acacia adoxa var. adoxa x spondylophylla*							x	
Fabaceae	*Acacia adsurgens*		x	x	x		x	x	
Fabaceae	*Acacia ancistrocarpa*				x		x	x	x
Fabaceae	*Acacia aptaneura*		x	x	x	x		x	x
Fabaceae	*Acacia arida*						x	x	x
Fabaceae	*Acacia ayersiana*		x	x	x	x	x	x	x
Fabaceae	*Acacia bivenosa*			x	x		x	x	x
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		x	x	x	x	x		
Fabaceae	*Acacia citrinoviridis*		x			x			
Fabaceae	*Acacia elachantha*						x	x	
Fabaceae	*Acacia hilliana*			x				x	

Family	Taxon	Status	Vegetation type						
			A	B	C	D	E	F	G
Fabaceae	*Acacia inaequilatera*		x	x				x	
Fabaceae	*Acacia incurvaneura*			x	x				x
Fabaceae	*Acacia kempeana*			x	x			x	x
Fabaceae	*Acacia maitlandii*						x	x	
Fabaceae	*Acacia marramamba*							x	
Fabaceae	*Acacia monticola*						x	x	
Fabaceae	*Acacia pachyacra*				x				
Fabaceae	*Acacia pruinocarpa*		x	x	x	x	x	x	x
Fabaceae	*Acacia pteraneura*		x						
Fabaceae	*Acacia pyrifolia* var. *morrisonii*		x			x			
Fabaceae	*Acacia rhodophloia*		x	x	x	x			x
Fabaceae	*Acacia sericophylla*				x				
Fabaceae	*Acacia sibirica*			x	x			x	x
Fabaceae	*Acacia* sp.		x	x	x		x		
Fabaceae	*Acacia* sp. (aneura complex)		x	x	x	x	x	x	x
Fabaceae	*Acacia synchronicia*								x
Fabaceae	*Acacia tenuissima*						x	x	
Fabaceae	*Acacia tetragonophylla*		x	x	x	x		x	x
Fabaceae	*Acacia trudgeniana*				x				
Fabaceae	*Acacia xiphophylla*			x					
Fabaceae	*Crotalaria novae-hollandiae* subsp. *novae-hollandiae*							x	
Fabaceae	*Gompholobium oreophilum*			x	x			x	
Fabaceae	*Indigofera georgei*		x						
Fabaceae	*Indigofera gilesii*	Priority 3						x	
Fabaceae	*Indigofera linifolia*		x						
Fabaceae	*Indigofera monophylla*			x	x			x	
Fabaceae	*Indigofera sp.*							x	
Fabaceae	*Isotropis atropurpurea*		x			x			
Fabaceae	*Isotropis iophyta*		x			x			
Fabaceae	*Isotropis parviflora*	Priority 3						x	
Fabaceae	*Mirbelia viminalis*							x	
Fabaceae	*Petalostylis labicheoides*					x		x	
Fabaceae	*Senna artemisioides subsp. helmsii*		x		x			x	x
Fabaceae	*Senna artemisioides subsp. oligophylla*		x	x	x			x	
Fabaceae	*Senna artemisioides subsp. oligophylla x helmsii*		x	x				x	
Fabaceae	*Senna artemisioides* subsp. *x artemisioides*					x	x		
Fabaceae	*Senna ferraria*				x			x	
Fabaceae	*Senna glaucifolia*		x	x	x			x	
Fabaceae	*Senna glutinosa subsp. glutinosa*		x	x	x			x	
Fabaceae	*Senna glutinosa subsp. pruinosa*				x			x	

Family	Taxon	Status	Vegetation type						
			A	B	C	D	E	F	G
Fabaceae	*Senna glutinosa subsp. x luerssenii*			x	x			x	x
Fabaceae	*Senna hamersleyensis*							x	
Fabaceae	*Senna notabilis*		x	x	x				
Fabaceae	*Senna pleurocarpa* subsp. *angustifolia*				x				
Fabaceae	*Senna sp.*				x				
Fabaceae	*Tephrosia densa*							x	
Fabaceae	*Tephrosia* sp.		x						
Fabaceae	*Tephrosia supina*		x						
Goodeniaceae	*Brunonia australis*		x						
Goodeniaceae	*Goodenia cusackiana*		x						
Goodeniaceae	*Goodenia forrestii*		x						
Goodeniaceae	*Goodenia microptera*				x			x	
Goodeniaceae	*Goodenia nuda*		x					x	
Goodeniaceae	*Goodenia prostrata*		x	x					
Goodeniaceae	*Goodenia scaevolina*								x
Goodeniaceae	*Goodenia stobbsiana*		x		x			x	
Goodeniaceae	*Goodenia triodiophila*		x	x	x		x	x	x
Goodeniaceae	*Goodenia vilmoriniae*								
Goodeniaceae	*Scaevola browniana* subsp. *browniana*							x	
Goodeniaceae	*Scaevola parvifolia* subsp. *pilbarae*						x	x	
Goodeniaceae	*Scaevola spinescens*								x
Gyrostemonaceae	*Codonocarpus cotinifolius*			x	x			x	x
Haloragaceae	*Haloragis gossei var. gossei*		x						
Haloragaceae	*Haloragis sp.*				x				
Lamiaceae	*Clerodendrum floribundum* var. *angustifolium*							x	
Lamiaceae	*Teucrium teucriiflorum*		x						
Lauraceae	*Cassytha capillaris*							x	
Loranthaceae	*Amyema miquelii*				x				
Malvaceae	**Malvastrum americanum*	Permitted - s11	x						
Malvaceae	*Abutilon cryptopetalum*		x		x				
Malvaceae	*Abutilon cunninghamii*					x			
Malvaceae	*Abutilon fraseri*		x						
Malvaceae	*Abutilon macrum*		x						
Malvaceae	*Abutilon otocarpum*		x		x				
Malvaceae	*Abutilon sp.*			x					
Malvaceae	*Abutilon* sp. *dioicum* (A.A. Mitchell PRP1618)							x	
Malvaceae	*Androcalva loxophylla*		x	x	x	x		x	
Malvaceae	*Androcalva luteiflora*		x		x		x	x	
Malvaceae	*Corchorus lasiocarpus* subsp. *lasiocarpus*			x	x			x	

Family	Taxon	Status	Vegetation type						
			A	B	C	D	E	F	G
Malvaceae	*Corchorus tridens*		x	x					
Malvaceae	*Gossypium robinsonii*							x	
Malvaceae	*Hibiscus burtonii*		x	x	x			x	
Malvaceae	*Hibiscus coatesii*			x	x	x			
Malvaceae	*Hibiscus sp. Gardneri (A.L. Payne PRP 1435)*			x					
Malvaceae	*Hibiscus sturtii*				x				
Malvaceae	*Hibiscus sturtii* var. *campylochlamys*		x	x	x	x		x	
Malvaceae	*Hibiscus sturtii* var. *platychlamys*		x	x					
Malvaceae	*Hibiscus sturtii* var. *truncatus*			x					
Malvaceae	*Malvaceae sp.*			x				x	
Malvaceae	*Seringia exastia*				x		x	x	
Malvaceae	*Seringia nephrosperma*				x				
Malvaceae	*Sida cardiophylla*				x				
Malvaceae	*Sida ectogama*		x	x					
Malvaceae	*Sida platycalyx*		x						
Malvaceae	*Sida sp.*		x	x			x		
Malvaceae	*Sida* sp. dark green fruits (S. van Leeuwen 2260)			x		x			
Malvaceae	*Sida* sp. *excedentifolia* (J.L. Egan 1925)			x			x	x	
Malvaceae	*Sida sp. L (A.M. Ashby 4202)*		x			x	x	x	
Malvaceae	*Sida sp. Shovelanna Hill (S. van Leeuwen 3842)*						x		
Malvaceae	*Sida* sp. Supplejack Station (T.S. Henshall 2345)			x					
Marsileaceae	*Marsilea exarata*		x						
Montiaceae	*Calandrinia ptychosperma*		x						
Montiaceae	*Calandrinia pumila*		x						
Montiaceae	*Calandrinia sp.*		x	x					
Montiaceae	*Calandrinia stagnensis*		x						
Moraceae	*Ficus brachypoda*							x	
Myrtaceae	*Corymbia candida* subsp. *candida*		x						
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		x	x	x		x	x	x
Myrtaceae	*Corymbia ferriticola*			x			x		
Myrtaceae	*Corymbia hamersleyana*		x			x	x	x	x
Myrtaceae	*Eucalyptus gamophylla*			x	x			x	
Myrtaceae	*Eucalyptus kingsmillii*							x	
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*			x	x	x		x	x
Myrtaceae	*Eucalyptus repullulans*								x
Myrtaceae	*Eucalyptus socialis* subsp. *eucentrica*								x
Myrtaceae	*Eucalyptus trivalva*			x		x			x
Myrtaceae	*Eucalyptus xerothermica*		x	x			x		

Family	Taxon	Status	Vegetation type						
			A	B	C	D	E	F	G
Nyctaginaceae	*Boerhavia coccinea*		x				x		
Nyctaginaceae	*Boerhavia repleta*		x						
Nyctaginaceae	*Boerhavia sp.*		x						
Oleaceae	*Jasminum didymum* subsp. *lineare*		x		x		x		
Phylanthaceae	*Dendrophyllanthus erwinii*		x						
Plantaginaceae	*Stemodia grossa*		x						
Poaceae	**Cenchrus ciliaris*	Permitted - s11	x				x		
Poaceae	*Amphipogon sericeus*			x				x	
Poaceae	*Aristida contorta*		x	x	x		x	x	
Poaceae	*Aristida holathera* var. *holathera*				x				
Poaceae	*Aristida inaequiglumis*		x	x	x		x		
Poaceae	*Aristida jerichoensis* var. *subspinulifera*	Priority 3	x						
Poaceae	*Aristida obscura*		x		x				
Poaceae	*Chrysopogon fallax*		x				x		
Poaceae	*Cymbopogon ambiguus*							x	
Poaceae	*Cymbopogon obtectus*		x		x	x	x	x	
Poaceae	*Dactyloctenium radulans*		x						
Poaceae	*Dichanthium sericeum* subsp. *humilius*		x						
Poaceae	*Digitaria ammophila*		x		x			x	
Poaceae	*Digitaria ctenantha*		x					x	
Poaceae	*Elytrophorus spicatus*		x						
Poaceae	*Enneapogon polyphyllus*		x	x	x	x	x	x	
Poaceae	*Enneapogon robustissimus*		x						
Poaceae	*Enteropogon ramosus*		x	x					
Poaceae	*Eragrostis cumingii*		x	x					
Poaceae	*Eragrostis eriopoda*			x				x	
Poaceae	*Eragrostis pergracilis*		x						
Poaceae	*Eragrostis tenellula*		x						
Poaceae	*Eriachne benthamii*		x	x					
Poaceae	*Eriachne flaccida*		x	x					
Poaceae	*Eriachne helmsii*		x						
Poaceae	*Eriachne lanata*							x	
Poaceae	*Eriachne mucronata*		x		x	x		x	x
Poaceae	*Eriachne pulchella* subsp. *pulchella*		x	x	x			x	x
Poaceae	*Eriachne sp.*		x						
Poaceae	*Eriachne tenuiculmis*		x						
Poaceae	*Eulalia aurea*			x		x	x		
Poaceae	*Iseilema membranaceum*			x			x		
Poaceae	*Iseilema vaginiflorum*		x						
Poaceae	*Panicum effusum*		x						
Poaceae	*Paraneurachne muelleri*				x		x	x	

Family	Taxon	Status	Vegetation type						
			A	B	C	D	E	F	G
Poaceae	*Paspalidium clementii*		x	x					
Poaceae	*Paspalidium rarum*		x						
Poaceae	*Schizachyrium fragile*			x				x	
Poaceae	*Setaria dielsii*		x						
Poaceae	*Setaria surgens*						x		
Poaceae	*Sporobolus australasicus*		x	x					x
Poaceae	*Themeda triandra*		x	x		x	x	x	x
Poaceae	*Thyridolepis xerophila*			x			x		
Poaceae	*Tragus australianus*		x						
Poaceae	*Triodia angusta*								x
Poaceae	*Triodia brizoides*								x
Poaceae	*Triodia melvillei*		x	x	x				
Poaceae	*Triodia pungens*		x	x	x	x	x	x	x
Poaceae	*Triodia sp.*				x				
Poaceae	*Triodia vanleeuwenii*			x	x	x	x	x	
Poaceae	*Triodia wiseana*			x				x	x
Poaceae	*Perotis rara*		x	x					
Polygalaceae	*Polygala isingii*		x	x	x		x		
Portulacaceae	**Portulaca oleracea*	Permitted - s11	x	x					
Portulacaceae	*Portulaca cyclophylla*		x						
Portulacaceae	*Portulaca filifolia*		x						
Proteaceae	*Grevillea berryana*		x	x	x			x	x
Proteaceae	*Grevillea wickhamii* subsp. *hispidula*						x		
Proteaceae	*Hakea chordophylla*				x			x	
Proteaceae	*Hakea lorea subsp. lorea*		x		x	x		x	
Proteaceae	*Hakea sp.*		x					x	
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		x	x	x	x			
Rubiaceae	*Dolichocarpa crouchiana*							x	
Rubiaceae	*Spermacoce brachystema*		x	x					
Rubiaceae	*Synaptantha tillaeacea* var. *tillaeacea*		x						
Rubiaceae	*Psydrax latifolia*		x	x	x	x		x	
Rubiaceae	*Psydrax suaveolens*			x	x				
Santalaceae	*Anthobolus leptomerioides*		x	x	x	x			x
Santalaceae	*Santalum lanceolatum*		x	x			x	x	x
Sapindaceae	*Dodonaea lanceolata* var. *lanceolata*					x			
Sapindaceae	*Dodonaea pachyneura*							x	
Scrophulariaceae	*Eremophila clarkei*			x					
Scrophulariaceae	*Eremophila cuneifolia*								x
Scrophulariaceae	*Eremophila exilifolia*			x	x			x	
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii ms*		x	x	x	x	x	x	
Scrophulariaceae	*Eremophila fraseri* subsp. *fraseri*								
Scrophulariaceae	*Eremophila galeata*		x	x	x	x		x	

Family	Taxon	Status	Vegetation type						
			A	B	C	D	E	F	G
Scrophulariaceae	*Eremophila jucunda subsp. pulcherrima*							x	
Scrophulariaceae	*Eremophila lachnocalyx*								x
Scrophulariaceae	*Eremophila lanceolata*		x						
Scrophulariaceae	*Eremophila latrobei subsp. filiformis*		x	x	x				x
Scrophulariaceae	*Eremophila latrobei subsp. latrobei*		x					x	
Scrophulariaceae	*Eremophila longifolia*		x			x			
Scrophulariaceae	*Eremophila platycalyx* subsp. ? *pardalota*								x
Solanaceae	*Solanum centrale*							x	
Solanaceae	*Solanum cleistogamum*			x		x			
Solanaceae	*Solanum horridum*				x				
Solanaceae	*Solanum lachnophyllum*		x		x			x	
Solanaceae	*Solanum lasiophyllum*		x	x	x		x	x	x
Solanaceae	*Solanum sp.*		x						
Violaceae	*Afrohybanthus aurantiacus*							x	
Zygophyllaceae	*Tribulus astrocarpus*		x						
Zygophyllaceae	*Tribulus cistoides*		x						
Zygophyllaceae	*Tribulus hirsutus*			x					
Zygophyllaceae	*Tribulus occidentalis*		x						
Zygophyllaceae	*Tribulus sp.*			x					

Appendix V List of quadrat locations

Site name	Date season 1	Date season 2	Easting	Northing	Vegetation code
RHQ01	23/09/2023	11/04/2024	749431.3051	7429062.62	A
RHQ02	23/09/2023	11/04/2024	748156.7844	7429335.303	B
RHQ03	23/09/2023	14/04/2024	749456.298	7431145.094	A
RHQ04	23/09/2023	14/04/2024	749865.5025	7431330.185	A
RHQ05	24/09/2023	10/04/2024	750841.3155	7428185.308	E
RHQ06	24/09/2023	9/04/2024	750217.0743	7428985.433	F
RHQ07	24/09/2023	10/04/2024	751015.9762	7428324.415	F
RHQ08	24/09/2023	10/04/2024	749689.4754	7429539.461	A
RHQ09	24/09/2023	10/04/2024	750998.5643	7428591.887	F
RHQ10	25/09/2023	11/04/2024	748758.4435	7429134.218	A
RHQ11	25/09/2023	9/04/2024	751504.7225	7428680.216	F
RHQ12	25/09/2023	11/04/2024	748204.2283	7429052.612	F
RHQ13	25/09/2023	11/04/2024	748668.4857	7429900.328	A
RHQ14	25/09/2023	13/04/2024	747432.5422	7428814.791	C
RHQ15	25/09/2023	11/04/2024	747762.3535	7429496.985	C
RHQ16	25/09/2023	9/04/2024	750621.3396	7429493.905	F
RHQ17	25/09/2023	11/04/2024	748655.7213	7429480.818	C
RHQ18	26/09/2023	14/04/2024	747768.0139	7431074.499	C
RHQ19	26/09/2023	9/04/2024	751451.2788	7429471.477	A
RHQ20	26/09/2023	14/04/2024	748688.1987	7431422.35	A
RHQ21	26/09/2023	13/04/2024	747355.1227	7429890.761	C
RHQ22	26/09/2023	14/04/2024	751345.3865	7431783.762	A
RHQ23	28/09/2023	14/04/2024	747973.7063	7430507.631	B
RHQ24	27/09/2023	(not resurveyed)	754065.3279	7436452.419	B
RHQ25	27/09/2023	12/04/2024	754482.0735	7436139.208	G
RHQ26	27/09/2023	12/04/2024	754064.2254	7436742.577	D
RHQ27	27/09/2023	12/04/2024	754800.6965	7437228.48	D
RHQ28	27/09/2023	12/04/2024	754749.7809	7437614.957	B
RHQ29	27/09/2023	12/04/2024	755045.4518	7437663.467	B
RHQ30	29/09/2023	14/04/2024	751103.3072	7430942.217	A
RHQ31	28/09/2023	13/04/2024	751497.7306	7427640.786	B
RHQ32	29/09/2023	14/04/2024	750452.8514	7431090.442	A
RHQ33	28/09/2023	13/04/2024	751839.4926	7427183.581	B
RHQ34	29/09/2023	10/04/2024	751005.0948	7428094.612	E
RHQ35	28/09/2023	13/04/2024	751197.3418	7427169.703	G

Site name	Date season 1	Date season 2	Easting	Northing	Vegetation code
RHQ36	-	15/04/2024	754616.6207	7436664.349	C
RHQ37	-	13/04/2024	751635.3198	7427341.502	G
RHQ38	-	15/04/2024	754364.323	7437254.352	C
RHQ39	-	15/04/2024	754750.5527	7437472.22	C
RHQ40	-	15/04/2024	752065.5486	7433083.237	B
RHQ41	-	15/04/2024	752102.5489	7433494.995	F

Appendix VI – Quadrat data

Site name	RHQ01	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	23/09/2023	**Date season 2**	11/04/2024
Easting	749431 mE	**Northing**	7429063 mS
Landform	Plain	**Topography**	Flat
Soil type	Sandy clay loam	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Roads or tracks, weeds
Vegetation code	A	**Vegetation condition**	Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Gomphrena kanisii*		0.25	0.001
Amaranthaceae	*Gomphrena lanata*		0.05	0.001
Amaranthaceae	*Ptilotus exaltatus*		0.25	0.01
Amaranthaceae	*Ptilotus helipteroides*		0.3	0.002
Amaranthaceae	*Ptilotus obovatus*		0.4	0.01
Amaranthaceae	*Ptilotus xerophilus*		0.7	0.01
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.2	0.05
Asteraceae	*Calotis plumulifera*		0.15	0.04
Asteraceae	*Rhodanthe charsleyae*		0.2	0.001
Chenopodiaceae	*Enchylaena tomentosa*		0.4	0.05
Chenopodiaceae	*Rhagodia* sp. Hamersley (M. Trudgen 17794)	Priority 3	1.2	0.05

Appendix VI – Quadrat data

Cleomaceae	*Arivela viscosa*		0.7	50
Convolvulaceae	*Duperreya commixta*		0	0.001
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.4	0.001
Cyperaceae	*Bulbostylis turbinata*		0.15	0.001
Fabaceae	*Acacia aptaneura*		4.5	25.25
Fabaceae	*Acacia pruinocarpa*		5	2
Fabaceae	*Acacia tetragonophylla*		4.5	0.15
Fabaceae	*Isotropis atropurpurea*		0.4	0.001
Goodeniaceae	*Goodenia prostrata*		0.1	0.001
Malvaceae	*Abutilon cryptopetalum*		0.4	0.01
Malvaceae	*Abutilon otocarpum*		0.2	0.001
Malvaceae	*Androcalva luteiflora*		1.5	0.001
Malvaceae	*Corchorus tridens*		0.3	0.001
Malvaceae	*Hibiscus sturtii* var. *platychlamys*		0.4	0.01
Montiaceae	*Calandrinia* sp.		0.05	0.001
Nyctaginaceae	*Boerhavia coccinea*		0.05	0.001
Nyctaginaceae	*Boerhavia repleta*		0.3	0.001
Poaceae	**Cenchrus ciliaris*	Permitted - s11	0.8	0.5
Poaceae	*Aristida contorta*		0.4	1
Poaceae	*Chrysopogon fallax*		1.2	5
Poaceae	*Dactyloctenium radulans*		0.15	0.02
Poaceae	*Eriachne* sp.		0.4	0.001
Poaceae	*Tragus australianus*		0.2	0.001
Poaceae	*Triodia pungens*		0.5	0.05
Poaceae	*Perotis rara*		0.2	0.001
Portulacaceae	**Portulaca oleracea*	Permitted - s11	0.02	0.01
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.1	0.01
Rubiaceae	*Spermacoce brachystema*		0.2	0.001
Rubiaceae	*Psydrax latifolia*		1.7	0.01
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.3	0.05
Scrophulariaceae	*Eremophila galeata*		2.5	5

Appendix VI – Quadrat data

Site name	RHQ02	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	23/09/2023	**Date season 2**	11/04/2024
Easting	748157 mE	**Northing**	742933 mS
Landform	Plain	**Topography**	Flat
Soil type	Surface rock cover	**Soil colour**	Red/orange
Fire history	Within 5 years	**Disturbances**	Roads or tracks
Vegetation code	B	**Vegetation condition**	Excellent

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Gomphrena canescens* subsp. *canescens*		0.2	0.01
Amaranthaceae	*Ptilotus roei*		0.02	0.001
Amaranthaceae	*Ptilotus rotundifolius*		1.2	0.01
Apocynaceae	*Cynanchum viminale* subsp. *australe*		2	0.001
Asteraceae	*Chrysocephalum pterochaetum*		0.3	0.001
Capparaceae	*Capparis lasiantha*		1.5	0.01
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.1	0.001
Cyperaceae	*Fimbristylis dichotoma*		0.2	0.01
Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0.02	0.001

Appendix VI – Quadrat data

Fabaceae	*Acacia adsurgens*		1.3	0.01
Fabaceae	*Acacia aptaneura*		2.5	2.2
Fabaceae	*Acacia pruinocarpa*		5	0.2
Fabaceae	*Indigofera monophylla*		0.2	0.001
Fabaceae	*Senna artemisioides* subsp. *oligophylla*		1.5	0.01
Fabaceae	*Senna notabilis*		0.2	0.001
Goodeniaceae	*Goodenia triodiophila*		0.4	0.001
Malvaceae	*Androcalva loxophylla*		0.4	0.05
Malvaceae	*Hibiscus* sp. *Gardneri* (A.L. Payne PRP 1435)		0.2	0.01
Malvaceae	*Hibiscus sturtii* var. *truncatus*		0.2	0.01
Malvaceae	*Malvaceae* sp.		0.3	0.001
Myrtaceae	*Eucalyptus gamophylla*		7	0.2
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		4	0.2
Poaceae	*Amphipogon sericeus*		0.4	0.001
Poaceae	*Aristida inaequiglumis*		0.5	0.05
Poaceae	*Eragrostis eriopoda*		0.4	0.01
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.15	0.001
Poaceae	*Triodia pungens*		0.5	0.15
Poaceae	*Triodia vanleeuwenii*		0.4	45
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.4	0.001
Rubiaceae	*Psydrax latifolia*		0.2	0.01
Santalaceae	*Anthobolus leptomerioides*		0.6	0.02
Scrophulariaceae	*Eremophila clarkei*		0.6	0.02
Scrophulariaceae	*Eremophila exilifolia*		1.1	0.05
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		0.8	0.01
Scrophulariaceae	*Eremophila galeata*		1.5	4

Appendix VI – Quadrat data

Site name	RHQ03	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	23/09/2023	**Date season 2**	14/04/2024
Easting	749456 mE	**Northing**	7431145 mS
Landform	Plain	**Topography**	Flat
Soil type	Loam	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Roads or tracks, signs of grazing
Vegetation code	A	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Gomphrena canescens* subsp. *canescens*		0.3	0.01
Amaranthaceae	*Ptilotus canescens* subsp. *canescens*		0.25	0.01
Amaranthaceae	*Ptilotus exaltatus*		0.2	0.01
Amaranthaceae	*Ptilotus gaudichaudii*		0.3	0.01
Amaranthaceae	*Ptilotus helipteroides*		0.8	0.01
Amaranthaceae	*Ptilotus obovatus*		0.7	0.5
Amaranthaceae	*Ptilotus xerophilus*		0.4	0.02
Apocynaceae	*Leichardtia australis*		0	0.001
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.2	0.001
Asteraceae	*Rhodanthe charsleyae*		0.2	0.01
Chenopodiaceae	*Dysphania rhadinostachya* subsp. *rhadinostachya*		0.18	0.001

Appendix VI – Quadrat data

Chenopodiaceae	*Maireana villosa*		0.3	0.001
Chenopodiaceae	*Salsola australis*		0.2	0.01
Cleomaceae	*Arivela viscosa*		0.5	0.02
Convolvulaceae	*Duperreya commixta*		0	0.001
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.2	0.001
Cucurbitaceae	*Cucumis variabilis*		0	0.001
Fabaceae	*Acacia aptaneura*		6	5
Fabaceae	*Indigofera georgei*		1	0.01
Fabaceae	*Isotropis atropurpurea*		1	0.01
Fabaceae	*Senna artemisioides* subsp. *helmsii*		0.8	0.05
Fabaceae	*Senna artemisioides* subsp. *oligophylla*		0.8	0.01
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		1.6	0.02
Fabaceae	*Senna notabilis*		0.5	0.01
Goodeniaceae	*Goodenia prostrata*		0.05	1
Lamiaceae	*Teucrium teucriiflorum*		1	0.001
Malvaceae	*Hibiscus burtonii*		0.6	0.01
Malvaceae	*Sida platycalyx*		0.3	0.01
Malvaceae	*Sida* sp. L (A.M. Ashby 4202)		0	0.01
Poaceae	*Aristida contorta*		0.3	5
Poaceae	*Aristida inaequiglumis*		0.2	10
Poaceae	*Chrysopogon fallax*		1.3	5
Poaceae	*Cymbopogon obtectus*		1.2	0.15
Poaceae	*Enneapogon polyphyllus*		0.15	0.01
Poaceae	*Enteropogon ramosus*		0.2	0.1
Poaceae	*Eriachne benthamii*		1	40
Poaceae	*Eriachne flaccida*		0.6	0.01
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.3	0.05
Poaceae	*Panicum effusum*		0.5	0.001
Poaceae	*Paspalidium rarum*		0.25	0.001
Poaceae	*Themeda triandra*		1.2	1
Poaceae	*Perotis rara*		0.25	0.04
Portulacaceae	**Portulaca oleracea*	Permitted - s11	0.05	0.01
Proteaceae	*Hakea lorea* subsp. *lorea*		5	4
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.3	0.001
Rubiaceae	*Spermacoce brachystema*		0.15	0.001
Rubiaceae	*Psydrax latifolia*		1	0.01

Appendix VI – Quadrat data

Site name	RHQ04	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	23/09/2023	**Date season 2**	14/04/2024
Easting	749866 mE	**Northing**	7431330 mS
Landform	Plain	**Topography**	Flat
Soil type	Loam	**Soil colour**	Red/orange
Fire history	Within 5 years	**Disturbances**	Exploration (drilling, pads sumps etc), roads or tracks, signs of grazing
Vegetation code	A	**Vegetation condition**	Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Gomphrena canescens* subsp. *canescens*		0.35	0.001
Amaranthaceae	*Gomphrena kanisii*		0.2	0.005
Amaranthaceae	*Gomphrena lanata*		0.15	0.001
Amaranthaceae	*Ptilotus gaudichaudii*		0.3	0.001
Amaranthaceae	*Ptilotus obovatus*		0.6	0.005
Amaranthaceae	*Ptilotus polystachyus*		0.6	0.005
Amaranthaceae	*Ptilotus roei*		0.05	1
Amaranthaceae	*Ptilotus schwartzii*		0.5	0.01

Appendix VI – Quadrat data

Asteraceae	**Bidens bipinnata*	Permitted - s11	0.2	0.01
Asteraceae	*Chrysocephalum gilesii*		0.3	0.3
Asteraceae	*Pterocaulon sphacelatum*		0.6	0.002
Chenopodiaceae	*Dysphania rhadinostachya* subsp. *rhadinostachya*		0.25	0.01
Cleomaceae	*Arivela viscosa*		0.6	0.01
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.1	0.001
Cucurbitaceae	*Cucumis variabilis*		0	0.001
Fabaceae	*Acacia aptaneura*		6	5
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		1.5	0.01
Fabaceae	*Acacia tetragonophylla*		1.6	0.03
Fabaceae	*Senna artemisioides* subsp. *oligophylla*		0.4	0.05
Goodeniaceae	*Brunonia australis*		0.3	0.05
Goodeniaceae	*Goodenia prostrata*		0.1	0.1
Goodeniaceae	*Goodenia triodiophila*		0.2	0.005
Malvaceae	*Sida platycalyx*		0.5	0.1
Montiaceae	*Calandrinia ptychosperma*		0.05	0.15
Nyctaginaceae	*Boerhavia* sp.		0.05	0.05
Poaceae	*Aristida contorta*		0.6	1
Poaceae	*Aristida jerichoensis* var. *subspinulifera*	Priority 3	1.2	20
Poaceae	*Chrysopogon fallax*		1.4	0.001
Poaceae	*Cymbopogon obtectus*		1.3	0.01
Poaceae	*Eragrostis cumingii*		0.3	5
Poaceae	*Eragrostis pergracilis*		0.4	0.01
Poaceae	*Eriachne benthamii*		1	60
Poaceae	*Eriachne flaccida*		0.6	2
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.12	0.05
Poaceae	*Eriachne* sp.		0.7	40
Poaceae	*Themeda triandra*		1.2	1
Poaceae	*Perotis rara*		0.15	0.001
Polygalaceae	*Polygala isingii*		0.07	0.01
Portulacaceae	**Portulaca oleracea*	Permitted - s11	0.05	0.01
Proteaceae	*Hakea lorea* subsp. *lorea*		5	0.2
Rubiaceae	*Spermacoce brachystema*		0.2	0.001
Rubiaceae	*Psydrax latifolia*		1.4	0.01
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1	0.05
Scrophulariaceae	*Eremophila lanceolata*		0.3	0.01

Appendix VI – Quadrat data

Scrophulariaceae	*Eremophila latrobei* subsp. *filiformis*		1.5	0.01
Solanaceae	*Solanum lachnophyllum*		0.6	0.001
Solanaceae	*Solanum lasiophyllum*		0.6	0.01

Appendix VI – Quadrat data

Site name	RHQ05	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	24/09/2023	**Date season 2**	10/04/2024
Easting	750841 mE	**Northing**	7428185 mS
Landform	Drainage depression	**Topography**	Flat
Soil type	Loam	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	None
Vegetation code	E	**Vegetation condition**	Very Good

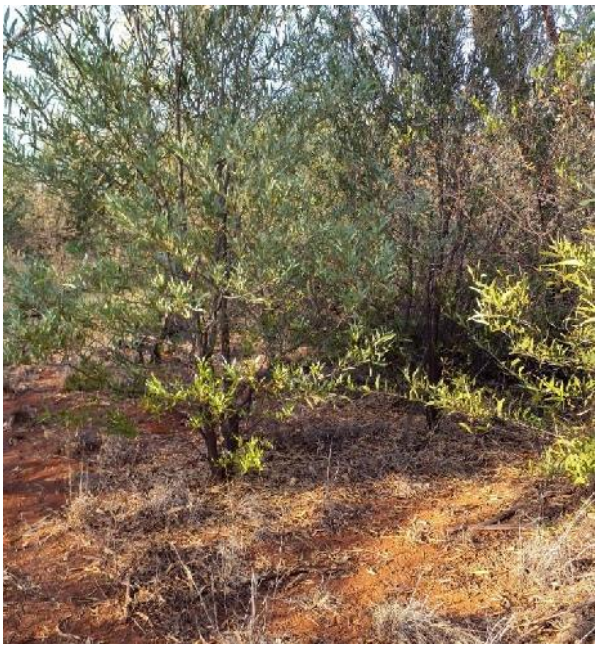

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus obovatus*		0.6	0.002
Amaranthaceae	*Ptilotus schwartzii*		0.6	0.05
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.15	0.001
Asteraceae	*Peripleura arida*		0.1	0.01
Cleomaceae	*Arivela viscosa*		0.5	0.15
Convolvulaceae	*Duperreya commixta*		0	0.001
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.1	0.001
Euphorbiaceae	*Euphorbia biconvexa*		0.2	0.001
Euphorbiaceae	*Euphorbia drummondii*		0.02	0.001

Appendix VI – Quadrat data

Fabaceae	*Acacia adsurgens*		4	1
Fabaceae	*Acacia ancistrocarpa*		2.5	0.2
Fabaceae	*Acacia ayersiana*		4	5
Fabaceae	*Acacia bivenosa*		1.2	0.5
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		7	40
Fabaceae	*Acacia maitlandii*		3	0.5
Fabaceae	*Acacia monticola*		4.5	1
Fabaceae	*Acacia tenuissima*		2	0.05
Malvaceae	*Androcalva luteiflora*		2.1	0.5
Malvaceae	*Seringia exastia*		1.6	1
Malvaceae	*Sida* sp. L (A.M. Ashby 4202)		0.3	0.05
Malvaceae	*Sida* sp. Shovelanna Hill (S. van Leeuwen 3842)		0.25	0.02
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		10	2
Myrtaceae	*Corymbia hamersleyana*		10	2
Myrtaceae	*Eucalyptus xerothermica*		10	1
Nyctaginaceae	*Boerhavia coccinea*		0	0.001
Poaceae	**Cenchrus ciliaris*	Permitted - s11	1.5	0.15
Poaceae	*Aristida inaequiglumis*		1.2	0.05
Poaceae	*Chrysopogon fallax*		1.2	0.05
Poaceae	*Eulalia aurea*		1	0.08
Poaceae	*Iseilema membranaceum*		0.2	0.01
Poaceae	*Paraneurachne muelleri*		0.3	0.05
Poaceae	*Setaria surgens*		0.4	0.002
Poaceae	*Themeda triandra*		1	70
Poaceae	*Thyridolepis xerophila*		0.3	0.01
Poaceae	*Triodia pungens*		1.2	10
Polygalaceae	*Polygala isingii*		0.05	0.001
Santalaceae	*Santalum lanceolatum*		2.5	0.1
Solanaceae	*Solanum lasiophyllum*		0.5	0.01

Appendix VI – Quadrat data

Site name	RHQ06	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	24/09/2023	**Date season 2**	09/04/2024
Easting	750217 mE	**Northing**	7428985 mS
Landform	Big Hill	**Topography**	Steep Slope
Soil type	Minimal loose soil due to erosion (Gibbers), surface rock cover	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Old evidence of fire
Vegetation code	F	**Vegetation condition**	Excellent

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Alternanthera nana*		0.2	0.001
Amaranthaceae	*Ptilotus obovatus*		0.5	0.001
Amaranthaceae	*Ptilotus polystachyus*		0.2	0.001
Amaranthaceae	*Ptilotus rotundifolius*		0.5	0.005
Capparaceae	*Capparis lasiantha*		0	0.001
Convolvulaceae	*Duperreya commixta*		0	0.001
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.3	0.001
Cucurbitaceae	*Cucumis variabilis*		0	0.001

Appendix VI – Quadrat data

Fabaceae	*Acacia adoxa* var. *adoxa*		0.4	2
Fabaceae	*Acacia hilliana*		0.4	0.5
Fabaceae	*Acacia maitlandii*		1.2	0.5
Fabaceae	*Acacia monticola*		3	2
Fabaceae	*Crotalaria novae-hollandiae* subsp. *novae-hollandiae*		0.3	0.001
Fabaceae	*Indigofera gilesii*	Priority 3	1.8	0.005
Fabaceae	*Indigofera monophylla*		0.2	0.001
Fabaceae	*Petalostylis labicheoides*		2.2	0.1
Fabaceae	*Senna ferraria*		2	0.001
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		1.6	0.1
Fabaceae	*Senna glutinosa* subsp. *pruinosa*		0.9	0.01
Fabaceae	*Tephrosia densa*		0.7	0.01
Goodeniaceae	*Goodenia triodiophila*		0.3	0.05
Goodeniaceae	*Scaevola browniana* subsp. *browniana*		0.4	0.005
Lamiaceae	*Clerodendrum floribundum* var. *angustifolium*		1.1	0.005
Lauraceae	*Cassytha capillaris*		0	0.001
Malvaceae	*Abutilon* sp. *dioicum* (A.A. Mitchell PRP1618)		0.35	0.001
Malvaceae	*Androcalva luteiflora*		0.8	0.005
Malvaceae	*Gossypium robinsonii*		2.5	0.001
Malvaceae	*Sida* sp. *excedentifolia* (J.L. Egan 1925)		0.4	0.001
Myrtaceae	*Corymbia hamersleyana*		5	3
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		8	3
Poaceae	*Cymbopogon ambiguus*		1	0.5
Poaceae	*Cymbopogon obtectus*		0.5	0.01
Poaceae	*Enneapogon polyphyllus*		0.3	0.005
Poaceae	*Eriachne mucronata*		0.25	0.005
Poaceae	*Paraneurachne muelleri*		0.2	0.005
Poaceae	*Themeda triandra*		0.3	0.5
Poaceae	*Triodia vanleeuwenii*		0.3	30
Poaceae	*Triodia wiseana*		0.5	30
Proteaceae	*Hakea chordophylla*		2.7	0.5

Appendix VI – Quadrat data

Site name	RHQ07	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	24/09/2023	**Date season 2**	10/04/2024
Easting	751016 mE	**Northing**	7428324 mS
Landform	Small Hill	**Topography**	Gradual Slope
Soil type	Minimal loose soil due to erosion (Gibbers), sandy clay loam	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Exploration (drilling, pads sumps etc), roads or tracks
Vegetation code	F	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Convolvulaceae	*Duperreya commixta*		0	0.001
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.2	0.001
Cyperaceae	*Fimbristylis simulans*		0.15	0.001
Fabaceae	*Acacia adoxa* var. *adoxa*		0.4	0.5
Fabaceae	*Acacia adsurgens*		1.4	0.5
Fabaceae	*Acacia ancistrocarpa*		1.6	1
Fabaceae	*Acacia arida*		0.6	0.001
Fabaceae	*Acacia bivenosa*		1.5	0.01

Appendix VI – Quadrat data

Fabaceae	*Acacia elachantha*		1.7	0.02
Fabaceae	*Acacia hilliana*		0.4	0.5
Fabaceae	*Acacia tenuissima*		1.2	0.5
Fabaceae	*Senna glaucifolia*		0.6	0.02
Goodeniaceae	*Goodenia nuda*		0.5	0.001
Goodeniaceae	*Scaevola parvifolia* subsp. *pilbarae*		0.3	0.001
Lamiaceae	*Clerodendrum floribundum* var. *angustifolium*		0.4	0.001
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		7	5
Myrtaceae	*Corymbia hamersleyana*		1.3	0.05
Myrtaceae	*Eucalyptus gamophylla*		2.1	1
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		8	1
Poaceae	*Amphipogon sericeus*		0.4	0.001
Poaceae	*Paraneurachne muelleri*		0.4	0.001
Poaceae	*Triodia vanleeuwenii*		0.5	25
Proteaceae	*Hakea chordophylla*		3	0.1
Santalaceae	*Santalum lanceolatum*		1.6	0.5
Scrophulariaceae	*Eremophila latrobei* subsp. *latrobei*		1	0.001
Solanaceae	*Solanum lasiophyllum*		0.5	0.001

Appendix VI – Quadrat data

Site name	RHQ08	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	24/09/2023	**Date season 2**	10/04/2024
Easting	749689 mE	**Northing**	7429539 mS
Landform	Non incised drainage, plain subject to sheet flow	**Topography**	Gradual Slope
Soil type	Loam, sand	**Soil colour**	Red/orange
Fire history	Within 5 years	**Disturbances**	Weeds
Vegetation code	A	**Vegetation condition**	Very Good

Photo season 1

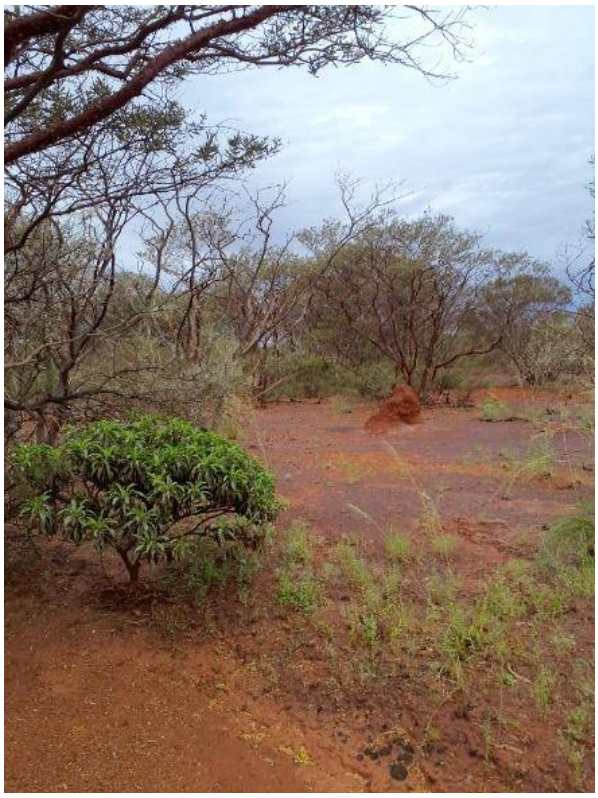

Photo season 2

Family	Taxon name	Status	Height	Cover %
Aizoaceae	*Trianthema glossostigmum*		0.02	0.005
Amaranthaceae	*Gomphrena canescens* subsp. *canescens*		0.2	0.05
Amaranthaceae	*Gomphrena kanisii*		0.15	0.001
Amaranthaceae	*Gomphrena lanata*		0.15	0.005
Amaranthaceae	*Ptilotus exaltatus*		0.15	0.001
Amaranthaceae	*Ptilotus helipteroides*		0.2	0.001
Amaranthaceae	*Ptilotus incanus*		0.4	0.001
Amaranthaceae	*Ptilotus obovatus*		0.6	1

Appendix VI – Quadrat data

Amaranthaceae	*Ptilotus roei*		0	0.05
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.15	0.001
Asteraceae	*Streptoglossa* sp.		0.3	0.1
Boraginaceae	*Euploca cunninghamii*		0.2	1
Boraginaceae	*Euploca heterantha*		0.03	0.005
Brassicaceae	*Lepidium pholidogynum*		0.2	0.001
Caryophyllaceae	*Polycarpaea corymbosa* var. *corymbosa*		0.001	0.001
Cleomaceae	*Arivela viscosa*		0.6	2
Convolvulaceae	*Duperreya commixta*		0	0.002
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.25	0.006
Cyperaceae	*Bulbostylis barbata*		0.15	0.005
Cyperaceae	*Fimbristylis simulans*		0.15	0.005
Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0.03	0.01
Euphorbiaceae	*Euphorbia biconvexa*		0.25	0.001
Fabaceae	*Acacia aptaneura*		11	5
Fabaceae	*Acacia ayersiana*		3	2
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		15	6
Fabaceae	*Acacia pruinocarpa*		5	1
Fabaceae	*Acacia rhodophloia*		7	20
Fabaceae	*Acacia tetragonophylla*		1.8	0.5
Fabaceae	*Senna artemisioides* subsp. *helmsii*		1.5	2
Fabaceae	*Senna glaucifolia*		0.5	0.1
Fabaceae	*Senna notabilis*		0.2	0.001
Goodeniaceae	*Goodenia nuda*		0.3	0.003
Goodeniaceae	*Goodenia prostrata*		0	0.001
Malvaceae	*Abutilon cryptopetalum*		0.8	0.5
Malvaceae	*Abutilon otocarpum*		0.1	0.005
Malvaceae	*Androcalva loxophylla*		1.5	0.001
Malvaceae	*Corchorus tridens*		0.015	0.005
Malvaceae	*Hibiscus burtonii*		0.6	0.002
Malvaceae	*Sida ectogama*		1.5	1
Malvaceae	*Sida* sp. L (A.M. Ashby 4202)		0	0.01
Myrtaceae	*Corymbia candida* subsp. *candida*		10	2
Myrtaceae	*Eucalyptus xerothermica*		15	2

Appendix VI – Quadrat data

Site name	RHQ09	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	24/09/2023	**Date season 2**	10/04/2024
Easting	750999 mE	**Northing**	7428592 mS
Landform	Minor drainage	**Topography**	Gradual Slope
Soil type	Sandy clay loam, surface rock cover	**Soil colour**	Red/brown
Fire history	Long Unburnt	**Disturbances**	Roads or tracks
Vegetation code	F	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Convolvulaceae	*Duperreya commixta*		0	0.002
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.2	0.001
Cucurbitaceae	*Cucumis variabilis*		0	0.001
Cyperaceae	*Fimbristylis dichotoma*		0.15	0.001
Cyperaceae	*Fimbristylis simulans*		0.1	0.001
Fabaceae	*Acacia adoxa* var. *adoxa*		0.4	0.05
Fabaceae	*Acacia adsurgens*		1.7	0.02
Fabaceae	*Acacia hilliana*		0.5	1

Appendix VI – Quadrat data

Fabaceae	*Acacia maitlandii*		2	0.05
Fabaceae	*Acacia monticola*		3	40
Fabaceae	*Acacia sibirica*		1.2	0.01
Fabaceae	*Gompholobium oreophilum*		0.7	0.1
Fabaceae	*Indigofera monophylla*		0.2	0.001
Fabaceae	*Indigofera* sp.		0.25	0.01
Fabaceae	*Mirbelia viminalis*		0.8	0.01
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		1.3	0.5
Fabaceae	*Senna glutinosa* subsp. *pruinosa*		1.6	0.05
Goodeniaceae	*Goodenia stobbsiana*		0.4	0.001
Goodeniaceae	*Goodenia triodiophila*		0.3	0.001
Goodeniaceae	*Scaevola browniana* subsp. *browniana*		0.3	0.01
Malvaceae	*Androcalva luteiflora*		1.8	0.5
Malvaceae	*Seringia exastia*		0.5	0.3
Myrtaceae	*Corymbia hamersleyana*		8	5
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		8	3
Poaceae	*Cymbopogon ambiguus*		0.4	0.001
Poaceae	*Enneapogon polyphyllus*		0.2	0.01
Poaceae	*Eriachne lanata*		0.25	0.001
Poaceae	*Eriachne mucronata*		0.3	0.05
Poaceae	*Paraneurachne muelleri*		0.4	0.002
Poaceae	*Triodia pungens*		0.6	5
Poaceae	*Triodia vanleeuwenii*		0.4	25
Poaceae	*Triodia wiseana*		0.7	30
Santalaceae	*Santalum lanceolatum*		2.1	3
Scrophulariaceae	*Eremophila exilifolia*		1.1	0.5
Solanaceae	*Solanum lasiophyllum*		0.2	0.001
Violaceae	*Afrohybanthus aurantiacus*		0.3	0.01

Appendix VI – Quadrat data

Site name	RHQ10	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	25/09/2023	**Date season 2**	11/04/2024
Easting	748758 mE	**Northing**	7429134 mS
Landform	Plain	**Topography**	Flat
Soil type	Loam, surface rock cover	**Soil colour**	Red/brown
Fire history	Within 5 years	**Disturbances**	Exploration (drilling, pads sumps etc), roads or tracks
Vegetation code	A	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Gomphrena canescens* subsp. *canescens*		0.2	0.001
Amaranthaceae	*Ptilotus obovatus*		1.6	0.01
Amaranthaceae	*Ptilotus roei*		0.2	0.001
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.3	0.2
Boraginaceae	*Euploca cunninghamii*		0.2	0.001
Boraginaceae	*Euploca heterantha*		0.03	0.001
Boraginaceae	*Trichodesma zeylanicum*		0.3	0.001
Cleomaceae	*Arivela viscosa*		0.6	20
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.3	0.01

Appendix VI – Quadrat data

Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0.02	0.001
Euphorbiaceae	*Euphorbia biconvexa*		0.2	0.001
Fabaceae	*Acacia aptaneura*		4	0.2
Fabaceae	*Acacia pruinocarpa*		5	0.001
Fabaceae	*Acacia* sp. (aneura complex)		6	5
Fabaceae	*Isotropis atropurpurea*		0.6	0.001
Goodeniaceae	*Goodenia prostrata*		0.1	0.001
Malvaceae	*Sida ectogama*		1.5	0.05
Malvaceae	*Sida* sp. L (A.M. Ashby 4202)		0.15	0.001
Myrtaceae	*Corymbia candida* subsp. *candida*		3.5	0.001
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		3	0.02
Myrtaceae	*Eucalyptus xerothermica*		5	0.01
Nyctaginaceae	*Boerhavia coccinea*		0.02	0.001
Phyllanthaceae	*Dendrophyllanthus erwinii*		0.1	0.001
Poaceae	*Aristida contorta*		0.3	0.025
Poaceae	*Aristida inaequiglumis*		0.6	0.001
Poaceae	*Enneapogon polyphyllus*		0.3	0.001
Poaceae	*Themeda triandra*		0.6	1
Poaceae	*Triodia pungens*		0.5	0.1
Poaceae	*Perotis rara*		0.15	0.001
Portulacaceae	**Portulaca oleracea*	Permitted - s11	0.05	0.05
Portulacaceae	*Portulaca filifolia*		0.2	0.001
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.22	0.001
Rubiaceae	*Spermacoce brachystema*		0.1	0.002
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.3	0.5
Scrophulariaceae	*Eremophila galeata*		2.5	1
Zygophyllaceae	*Tribulus astrocarpus*		0.02	0.01

Appendix VI – Quadrat data

Site name	RHQ11	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	25/09/2023	**Date season 2**	09/04/2024
Easting	751505 mE	**Northing**	7428680 mS
Landform	Small Hill	**Topography**	Gradual Slope
Soil type	Surface rock cover	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Roads or tracks
Vegetation code	F	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus rotundifolius*		1.6	0.01
Capparaceae	*Capparis lasiantha*		0.5	0.001
Convolvulaceae	*Duperreya commixta*		0	0.001
Cyperaceae	*Fimbristylis dichotoma*		0.08	0.001
Cyperaceae	*Fimbristylis simulans*		0.1	0.001
Fabaceae	*Acacia adoxa* var. *adoxa*		1	0.15
Fabaceae	*Acacia adsurgens*		1	0.001
Fabaceae	*Acacia hilliana*		3	0.15
Fabaceae	*Acacia kempeana*		0.3	0.01

Appendix VI – Quadrat data

Fabaceae	*Acacia maitlandii*		2	0.001
Fabaceae	*Acacia sibirica*		0.6	0.01
Fabaceae	*Acacia* sp. (aneura complex)		3	0.02
Fabaceae	*Acacia tenuissima*		0.7	0.02
Fabaceae	*Indigofera monophylla*		0.4	0.001
Fabaceae	*Senna ferraria*		0.7	0.001
Fabaceae	*Senna glaucifolia*		0.6	0.01
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		1.6	0.01
Fabaceae	*Senna glutinosa* subsp. *pruinosa*		1.5	0.15
Fabaceae	*Senna glutinosa* subsp. *x luerssenii*		1	0.001
Fabaceae	*Senna hamersleyensis*		0.5	0.001
Goodeniaceae	*Goodenia nuda*		0.5	0.001
Goodeniaceae	*Scaevola browniana* subsp. *browniana*		0.5	0.001
Gyrostemonaceae	*Codonocarpus cotinifolius*		2	0.01
Malvaceae	*Hibiscus sturtii* var. *campylochlamys*		0.5	0.001
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		5	1
Myrtaceae	*Corymbia hamersleyana*		4	0.15
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		6	5
Poaceae	*Amphipogon sericeus*		0.25	0.02
Poaceae	*Eragrostis eriopoda*		0.2	0.001
Poaceae	*Triodia pungens*		0.5	1
Poaceae	*Triodia vanleeuwenii*		0.5	26
Poaceae	*Triodia wiseana*		0.5	12
Proteaceae	*Grevillea berryana*		1.5	0.2
Proteaceae	*Hakea chordophylla*		3.5	0.01
Proteaceae	*Hakea lorea* subsp. *lorea*		1	0.001
Scrophulariaceae	*Eremophila exilifolia*		0.4	0.001
Scrophulariaceae	*Eremophila latrobei* subsp. *latrobei*		1.5	0.001
Solanaceae	*Solanum lasiophyllum*		0.5	0.001

Appendix VI – Quadrat data

Site name	RHQ12	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	25/09/2023	**Date season 2**	11/04/2024
Easting	748204 mE	**Northing**	7429053 mS
Landform	Plain	**Topography**	Flat
Soil type	Loamy clay, surface rock cover	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Weeds
Vegetation code	F	**Vegetation condition**	Excellent

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus calostachyus*		0.4	0.005
Amaranthaceae	*Ptilotus rotundifolius*		0.6	0.001
Amaranthaceae	*Ptilotus schwartzii*		1	0.001
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.25	0.005
Asteraceae	*Chrysocephalum pterochaetum*		0.2	0.05
Celastraceae	*Stackhousia intermedia*		0.2	0.001
Chenopodiaceae	*Rhagodia* sp. Hamersley (M. Trudgen 17794)	Priority 3	0.2	0.001
Convolvulaceae	*Duperreya commixta*		0	0.01
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.2	0.005
Fabaceae	*Acacia hilliana*		0.5	2
Fabaceae	*Acacia kempeana*		1.8	0.001
Fabaceae	*Acacia pruinocarpa*		3	0.5
Fabaceae	*Acacia sibirica*		1.6	2
Fabaceae	*Acacia* sp. (aneura complex)		2.2	0.5

Appendix VI – Quadrat data

Fabaceae	*Acacia tetragonophylla*		3	1
Fabaceae	*Indigofera monophylla*		0.3	0.005
Fabaceae	*Isotropis parviflora*	Priority 3	0.15	0.001
Fabaceae	*Senna artemisioides* subsp. *helmsii*		0.8	0.025
Fabaceae	*Senna artemisioides* subsp. *oligophylla*		0.4	0.005
Fabaceae	*Senna glaucifolia*		1.1	0.05
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		1.6	0.3
Fabaceae	*Senna glutinosa* subsp. *pruinosa*		1.6	0.5
Goodeniaceae	*Goodenia microptera*		0.2	0.001
Goodeniaceae	*Goodenia nuda*		0.3	0.001
Goodeniaceae	*Goodenia stobbsiana*		0.1	0.001
Goodeniaceae	*Goodenia triodiophila*		0.4	0.01
Malvaceae	*Androcalva loxophylla*		0.3	0.001
Malvaceae	*Androcalva luteiflora*		0.3	2
Malvaceae	*Corchorus lasiocarpus* subsp. *lasiocarpus*		0.8	0.05
Malvaceae	*Hibiscus burtonii*		0.2	0.05
Malvaceae	*Sida* sp. L (A.M. Ashby 4202)		0.3	0.001
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		5	0.5
Poaceae	*Cymbopogon ambiguus*		0.25	
Poaceae	*Cymbopogon obtectus*		0.6	0.001
Poaceae	*Digitaria ctenantha*		0.3	0.002
Poaceae	*Enneapogon polyphyllus*		0.2	0.01
Poaceae	*Eriachne mucronata*		0.4	0.5
Poaceae	*Schizachyrium fragile*		0.15	0.01
Poaceae	*Triodia vanleeuwenii*		0.5	40
Proteaceae	*Hakea chordophylla*		2.5	0.05
Proteaceae	*Hakea lorea* subsp. *lorea*		1.3	0.05
Rubiaceae	*Dolichocarpa crouchiana*		0.2	0.001
Rubiaceae	*Psydrax latifolia*		0.3	0.003
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.2	0.05
Scrophulariaceae	*Eremophila galeata*		1.1	0.05
Scrophulariaceae	*Eremophila latrobei* subsp. *latrobei*		2.3	0.1

Appendix VI – Quadrat data

Site name	RHQ13	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	25/09/2023	**Date season 2**	11/04/2024
Easting	748668 mE	**Northing**	7429900 mS
Landform	Plain	**Topography**	Flat
Soil type	Sandy clay loam	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Roads or tracks, weeds
Vegetation code	A	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Gomphrena kanisii*		0.4	0.01
Amaranthaceae	*Gomphrena lanata*		0.15	0.05
Amaranthaceae	*Ptilotus helipteroides*		0.4	0.01
Amaranthaceae	*Ptilotus obovatus*		1	0.05
Amaranthaceae	*Ptilotus polystachyus*		0.6	0.004
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.2	0.05
Asteraceae	*Brachyscome* sp.		0.25	0.001
Boraginaceae	*Euploca heterantha*		0.02	0.001
Chenopodiaceae	*Enchylaena tomentosa*		0.3	0.5

Appendix VI – Quadrat data

Chenopodiaceae	*Rhagodia* sp. Hamersley (M. Trudgen 17794)	Priority 3	1.7	0.05
Cleomaceae	*Arivela viscosa*		0.6	5
Convolvulaceae	*Duperreya commixta*		0	0.1
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.2	0.001
Euphorbiaceae	*Euphorbia biconvexa*		0.3	0.001
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		9	8
Fabaceae	*Acacia pruinocarpa*		5	13
Fabaceae	*Acacia* sp. (aneura complex)		9	12
Fabaceae	*Senna glaucifolia*		1.6	0.02
Goodeniaceae	*Goodenia forrestii*		0.05	0.05
Malvaceae	*Abutilon cryptopetalum*		0.6	0.001
Malvaceae	*Abutilon otocarpum*		0.4	0.001
Malvaceae	*Hibiscus burtonii*		1	0.01
Malvaceae	*Sida ectogama*		1.7	0.15
Malvaceae	*Sida* sp. L (A.M. Ashby 4202)		0.2	0.001
Nyctaginaceae	*Boerhavia* sp.		0.1	0.01
Poaceae	*Aristida obscura*		0.4	0.05
Poaceae	*Chrysopogon fallax*		1.1	0.05
Poaceae	*Digitaria ctenantha*		0.5	0.001
Poaceae	*Enneapogon polyphyllus*		0.2	0.001
Poaceae	*Enneapogon robustissimus*		0.3	0.01
Poaceae	*Eriachne benthamii*		0.3	0.01
Poaceae	*Eriachne helmsii*		1	0.15
Poaceae	*Triodia melvillei*		1.2	0.05
Poaceae	*Perotis rara*		0.1	0.001
Proteaceae	*Grevillea berryana*		4	0.15
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.2	0.001
Rubiaceae	*Spermacoce brachystema*		0.3	0.001
Santalaceae	*Santalum lanceolatum*		1.3	0.01
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.7	1
Solanaceae	*Solanum lasiophyllum*		0.4	0.001
Zygophyllaceae	*Tribulus astrocarpus*		0.05	0.01

Appendix VI – Quadrat data

Site name	RHQ14	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	25/09/2023	**Date season 2**	13/04/2024
Easting	747433 mE	**Northing**	7428815 mS
Landform	Plain	**Topography**	Flat
Soil type	Minimal loose soil due to erosion (Gibbers)	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Roads or tracks, weeds
Vegetation code	C	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus obovatus*		0.6	0.001
Amaranthaceae	*Ptilotus polystachyus*		0.3	0.001
Amaranthaceae	*Ptilotus rotundifolius*		0.8	0.001
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.3	0.001
Chenopodiaceae	*Enchylaena tomentosa*		0.2	0.001
Convolvulaceae	*Duperreya commixta*		0	0.001
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.1	0.001
Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0.3	0.001

Appendix VI – Quadrat data

Fabaceae	*Acacia adsurgens*		0.8	0.02
Fabaceae	*Acacia pruinocarpa*		3	0.05
Fabaceae	*Acacia sibirica*		1.2	0.02
Fabaceae	*Acacia* sp. (aneura complex)		2.5	0.001
Fabaceae	*Indigofera monophylla*		0.3	0.001
Fabaceae	*Senna glaucifolia*		1.2	0.002
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		2	0.001
Fabaceae	*Senna glutinosa* subsp. *x luerssenii*		1.2	0.05
Fabaceae	*Senna notabilis*		0.2	0.001
Goodeniaceae	*Goodenia microptera*		0.1	0.001
Haloragaceae	*Haloragis* sp.		0.3	0.001
Loranthaceae	*Amyema miquelii*		0	0.001
Malvaceae	*Abutilon otocarpum*		0.1	0.001
Malvaceae	*Androcalva loxophylla*		2	0.001
Malvaceae	*Androcalva luteiflora*		1.5	0.001
Malvaceae	*Hibiscus burtonii*		0.3	0.001
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		8	5
Poaceae	*Aristida contorta*		0.4	0.001
Poaceae	*Aristida holathera* var. *holathera*		0.2	0.001
Poaceae	*Cymbopogon obtectus*		0.5	0.001
Poaceae	*Paraneurachne muelleri*		0.3	0.001
Poaceae	*Triodia pungens*		0.7	15
Poaceae	*Triodia vanleeuwenii*		0.4	7.5
Proteaceae	*Hakea chordophylla*		2	0.01
Solanaceae	*Solanum lachnophyllum*		0.02	0.001

Appendix VI – Quadrat data

Site name	RHQ15	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	25/09/2023	**Date season 2**	11/04/2024
Easting	747762 mE	**Northing**	7429497 mS
Landform	Plain	**Topography**	Flat
Soil type	Sandy clay loam, surface rock cover	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Roads or tracks, rubbish
Vegetation code	C	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus obovatus*		1	0.01
Amaranthaceae	*Ptilotus rotundifolius*		1	0.01
Convolvulaceae	*Duperreya commixta*		0.25	0.01
Fabaceae	*Acacia aptaneura*		3	2
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		2.5	0.05
Fabaceae	*Acacia kempeana*		4	5.5
Fabaceae	*Acacia pruinocarpa*		4	0.05
Fabaceae	*Acacia sibirica*		4	2
Fabaceae	*Acacia* sp. (aneura complex)		3.5	2

Appendix VI – Quadrat data

Fabaceae	*Indigofera monophylla*		0.5	0.001
Fabaceae	*Senna artemisioides* subsp. *helmsii*		1.4	0.02
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		2.3	0.01
Fabaceae	*Senna glutinosa* subsp. *pruinosa*		1.5	0.05
Goodeniaceae	*Goodenia triodiophila*		0.4	0.001
Malvaceae	*Seringia exastia*		0.6	0.001
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		4	0.5
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		4.5	7
Poaceae	*Cymbopogon obtectus*		0.4	0.001
Poaceae	*Triodia pungens*		0.4	15
Poaceae	*Triodia vanleeuwenii*		0.4	30
Proteaceae	*Grevillea berryana*		3	0.05
Proteaceae	*Hakea chordophylla*		4	0.5
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.2	0.05
Solanaceae	*Solanum lasiophyllum*		0.3	0.01

Appendix VI – Quadrat data

Site name	RHQ16	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	25/09/2023	**Date season 2**	09/04/2024
Easting	750621 mE	**Northing**	7429494 mS
Landform	Big Hill	**Topography**	Gradual Slope
Soil type	Minimal loose soil due to erosion (Gibbers)	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Exploration (drilling, pads sumps etc), roads or tracks
Vegetation code	F	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Gomphrena kanisii*		0.2	0.001
Amaranthaceae	*Ptilotus helipteroides*		0.2	0.001
Amaranthaceae	*Ptilotus rotundifolius*		1.1	0.15
Apocynaceae	*Cynanchum viminale* subsp. *australe*		0.6	0.001
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.1	0.001
Boraginaceae	*Trichodesma zeylanicum*		0.1	0.001
Caryophyllaceae	*Polycarpaea corymbosa* var. *corymbosa*		0.01	0.001
Chenopodiaceae	*Rhagodia* sp. Hamersley (M. Trudgen 17794)	Priority 3	0.4	0.001
Convolvulaceae	*Bonamia erecta*		0.4	0.01
Convolvulaceae	*Duperreya commixta*		0	0.001
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.1	0.001

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Cyperaceae	*Bulbostylis barbata*		0.01	0.001
Cyperaceae	*Neurachne muelleri*		0.1	0.001
Fabaceae	*Acacia adoxa* var. *adoxa*		0.5	0.05
Fabaceae	*Acacia adsurgens*		1	0.001
Fabaceae	*Acacia aptaneura*		3	0.01
Fabaceae	*Acacia hilliana*		1	0.15
Fabaceae	*Acacia inaequilatera*		4	5
Fabaceae	*Acacia pruinocarpa*		1.5	0.001
Fabaceae	*Acacia sibirica*		1.4	0.001
Fabaceae	*Acacia* sp. (aneura complex)		2.1	0.001
Fabaceae	*Acacia tetragonophylla*		1	0.001
Fabaceae	*Indigofera monophylla*		0.4	0.001
Fabaceae	*Senna artemisioides* subsp. *helmsii*		1	0.001
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		2	0.01
Goodeniaceae	*Goodenia nuda*		0.3	0.001
Gyrostemonaceae	*Codonocarpus cotinifolius*		2	0.01
Malvaceae	*Malvaceae* sp.		0.7	0.001
Malvaceae	*Sida* sp.		0.15	(blank)
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		6	0.15
Poaceae	*Aristida contorta*		0.4	0.01
Poaceae	*Digitaria ammophila*		0	0.001
Poaceae	*Enneapogon polyphyllus*		0.2	0.001
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.05	0.001
Poaceae	*Schizachyrium fragile*		0.2	0.001
Poaceae	*Triodia vanleeuwenii*		0.5	20
Poaceae	*Triodia wiseana*		0.5	11
Proteaceae	*Hakea chordophylla*		2.5	0.01
Scrophulariaceae	*Eremophila exilifolia*		0.8	0.001

Appendix VI – Quadrat data

Site name	RHQ17	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	25/09/2023	**Date season 2**	11/04/2024
Easting	748656 mE	**Northing**	7429481 mS
Landform	Small Hill	**Topography**	Gradual Slope
Soil type	Sandy clay loam, surface rock cover	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Weeds
Vegetation code	C	**Vegetation condition**	Excellent

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus obovatus*		0.5	0.01
Amaranthaceae	*Ptilotus rotundifolius*		0.6	0.1
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.2	0.001
Convolvulaceae	*Duperreya commixta*		0	0.001
Fabaceae	*Acacia adsurgens*		1.5	1
Fabaceae	*Acacia aptaneura*		3.5	1
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		2	8
Fabaceae	*Acacia pruinocarpa*		4.5	10

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Fabaceae	*Acacia rhodophloia*		3	10
Fabaceae	*Acacia sibirica*		2.2	3
Fabaceae	*Indigofera monophylla*		0.7	0.05
Fabaceae	*Senna artemisioides* subsp. *helmsii*		0.3	0.01
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		2	0.15
Fabaceae	*Senna glutinosa* subsp. *x luerssenii*		1.7	0.1
Goodeniaceae	*Goodenia triodiophila*		0.5	0.001
Malvaceae	*Hibiscus sturtii* var. *campylochlamys*		0.2	0.01
Malvaceae	*Seringia exastia*		1.2	3
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		4	0.15
Poaceae	*Aristida inaequiglumis*		0.2	0.01
Poaceae	*Eriachne mucronata*		0.5	0.15
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.2	0.001
Poaceae	*Triodia pungens*		1	10
Poaceae	*Triodia vanleeuwenii*		0.7	40
Proteaceae	*Grevillea berryana*		4	0.5
Proteaceae	*Hakea chordophylla*		2.5	0.15
Rubiaceae	*Psydrax latifolia*		2	0.15
Scrophulariaceae	*Eremophila exilifolia*		1.6	1
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.2	0.03
Solanaceae	*Solanum lasiophyllum*		0.4	0.05

Appendix VI – Quadrat data

Site name	RHQ18	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	26/09/2023	**Date season 2**	14/04/2024
Easting	747768 mE	**Northing**	7431074 mS
Landform	Gibber Plain	**Topography**	Flat
Soil type	Clay, loam, minimal loose soil due to erosion (Gibbers)	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Weeds
Vegetation code	C	**Vegetation condition**	Excellent

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus obovatus*		0.8	1
Amaranthaceae	*Ptilotus rotundifolius*		0.4	0.001
Amaranthaceae	*Ptilotus schwartzii*		0.6	0.001
Apocynaceae	*Vincetoxicum lineare*		0	0.001
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.2	0.01
Convolvulaceae	*Duperreya commixta*		0	0.001
Cucurbitaceae	*Cucumis variabilis*		0	0.001
Fabaceae	*Acacia aptaneura*		2.5	2
Fabaceae	*Acacia ayersiana*		4	2
Fabaceae	*Acacia incurvaneura*		4	0.001
Fabaceae	*Acacia pachyacra*		2.1	0.1
Fabaceae	*Acacia pruinocarpa*		5	2

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Fabaceae	*Acacia sibirica*		1.9	1
Fabaceae	*Acacia* sp.		6	(blank)
Fabaceae	*Acacia* sp. (aneura complex)		5	0.2
Fabaceae	*Senna artemisioides* subsp. *oligophylla*		0.4	0.01
Fabaceae	*Senna glutinosa* subsp. *pruinosa*		0.9	0.01
Fabaceae	*Senna pleurocarpa* subsp. *angustifolia*		1.2	2
Malvaceae	*Abutilon cryptopetalum*		0.5	0.001
Malvaceae	*Androcalva loxophylla*		0.5	0.5
Malvaceae	*Hibiscus sturtii*		0.4	2
Malvaceae	*Seringia exastia*		1	2
Malvaceae	*Sida cardiophylla*		0.6	0.001
Myrtaceae	*Eucalyptus gamophylla*		4	1
Poaceae	*Aristida contorta*		0.3	0.005
Poaceae	*Aristida inaequiglumis*		0.6	1
Poaceae	*Aristida obscura*		0.25	0.01
Poaceae	*Cymbopogon obtectus*		0.8	0.01
Poaceae	*Enneapogon polyphyllus*		0.4	0.06
Poaceae	*Eriachne mucronata*		0.3	0.01
Poaceae	*Triodia melvillei*		1.7	0.5
Poaceae	*Triodia pungens*		0.6	25
Poaceae	*Triodia vanleeuwenii*		0.5	10
Santalaceae	*Anthobolus leptomerioides*		2.8	0.05
Scrophulariaceae	*Eremophila latrobei* subsp. *filiformis*		1.6	0.1
Solanaceae	*Solanum lasiophyllum*		0.7	0.005

Appendix VI – Quadrat data

Site name	RHQ19	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	26/09/2023	**Date season 2**	09/04/2024
Easting	751451 mE	**Northing**	7429471 mS
Landform	Plain	**Topography**	Flat
Soil type	Loam	**Soil colour**	Red/brown
Fire history	Within 5 years	**Disturbances**	Roads or tracks, weeds
Vegetation code	A	**Vegetation condition**	Very Good

Photo season 1

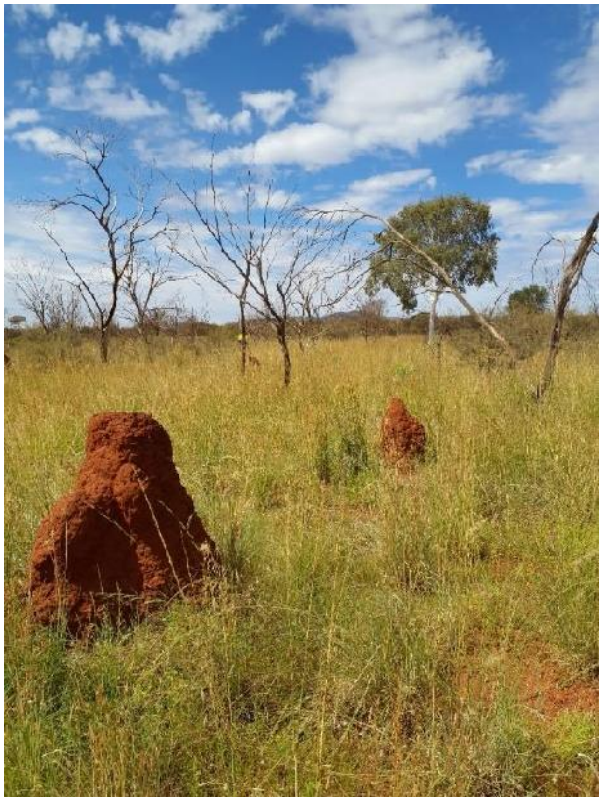

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Alternanthera nana*		0.05	0.01
Amaranthaceae	*Gomphrena kanisii*		0.4	0.01
Amaranthaceae	*Gomphrena lanata*		0.1	0.001
Amaranthaceae	*Ptilotus exaltatus*		0.5	0.01
Amaranthaceae	*Ptilotus gaudichaudii*		0.3	0.01
Amaranthaceae	*Ptilotus helipteroides*		0.5	0.05
Amaranthaceae	*Ptilotus incanus*		0.6	0.02
Amaranthaceae	*Ptilotus xerophilus*		0.5	0.001
Asteraceae	*Chrysocephalum gilesii*		0.4	0.01
Asteraceae	*Pterocaulon sphacelatum*		0.4	0.01

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Asteraceae	*Rhodanthe charsleyae*		0.2	0.01
Asteraceae	*Streptoglossa bubakii*		0.3	0.01
Boraginaceae	*Euploca cunninghamii*		0.2	0.001
Boraginaceae	*Trichodesma zeylanicum*		0.7	0.01
Caryophyllaceae	*Polycarpaea corymbosa* var. *corymbosa*		0.2	0.001
Cleomaceae	*Arivela viscosa*		0.5	0.01
Convolvulaceae	*Duperreya commixta*		0	0.001
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.25	0.001
Cucurbitaceae	*Cucumis melo*		0	0.01
Cyperaceae	*Bulbostylis barbata*		0.2	0.001
Fabaceae	*Acacia adsurgens*		1.2	0.05
Fabaceae	*Acacia aptaneura*		3	0.07
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		1	0.05
Fabaceae	*Acacia* sp. (aneura complex)		1.8	0.5
Fabaceae	*Acacia tetragonophylla*		1.2	0.05
Fabaceae	*Indigofera georgei*		0.4	0.1
Fabaceae	*Isotropis atropurpurea*		0.4	0.05
Fabaceae	*Isotropis iophyta*		0.8	0.01
Fabaceae	*Senna artemisioides* subsp. *helmsii*		0.7	0.02
Fabaceae	*Senna glaucifolia*		2	0.2
Goodeniaceae	*Brunonia australis*		0.02	0.01
Goodeniaceae	*Goodenia nuda*		0.2	0.01
Goodeniaceae	*Goodenia prostrata*		0.05	0.05
Haloragaceae	*Haloragis gossei* var. *gossei*		0.2	0.01
Malvaceae	*Abutilon otocarpum*		0.3	0.3
Malvaceae	*Hibiscus burtonii*		0.6	0.01
Malvaceae	*Sida* sp. L (A.M. Ashby 4202)		0.05	0.03
Myrtaceae	*Corymbia candida* subsp. *candida*		12	2
Plantaginaceae	*Stemodia grossa*		0.6	0.02

Appendix VI – Quadrat data

Site name	RHQ20	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	26/09/2023	**Date season 2**	14/04/2024
Easting	748688 mE	**Northing**	7431422 mS
Landform	Plain	**Topography**	Flat
Soil type	Clay, loam	**Soil colour**	Red/orange
Fire history	Within 10 years	**Disturbances**	Roads or tracks, weeds
Vegetation code	A	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Gomphrena canescens* subsp. *canescens*		0.25	0.001
Amaranthaceae	*Ptilotus gaudichaudii*		0.3	0.05
Amaranthaceae	*Ptilotus helipteroides*		0.2	0.01
Amaranthaceae	*Ptilotus obovatus*		0.7	0.1
Amaranthaceae	*Ptilotus roei*		0.1	0.001
Amaranthaceae	*Ptilotus schwartzii*		0.3	0.05
Amaranthaceae	*Ptilotus* sp.		0.1	(blank)
Amaranthaceae	*Ptilotus xerophilus*		0.3	0.01
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.5	1

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Brassicaceae	*Stenopetalum nutans*		0.2	0.01
Chenopodiaceae	*Enchylaena tomentosa*		0.4	0.001
Cleomaceae	*Arivela viscosa*		0.6	2
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.2	0.01
Cyperaceae	*Fimbristylis dichotoma*		0.1	0.05
Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0.03	0.005
Euphorbiaceae	*Euphorbia ferdinandi* var. *ferdinandi*		0.05	0.001
Fabaceae	*Acacia aptaneura*		3.5	1
Fabaceae	*Acacia inaequilatera*		1	0.001
Fabaceae	*Indigofera linifolia*		0.1	0.001
Fabaceae	*Senna artemisioides* subsp. *oligophylla*		1.1	0.01
Goodeniaceae	*Goodenia nuda*		0.2	0.01
Goodeniaceae	*Goodenia prostrata*		0.05	0.01
Malvaceae	*Abutilon fraseri*		0.4	0.001
Malvaceae	*Hibiscus sturtii* var. *campylochlamys*		0.3	0.001
Malvaceae	*Sida* sp. L (A.M. Ashby 4202)		0	0.005
Montiaceae	*Calandrinia pumila*		0.07	0.02
Myrtaceae	*Eucalyptus xerothermica*		6	2
Poaceae	*Aristida contorta*		0.2	25
Poaceae	*Chrysopogon fallax*		0.5	20
Poaceae	*Cymbopogon obtectus*		0.2	0.05
Poaceae	*Enneapogon polyphyllus*		0.6	0.5
Poaceae	*Eragrostis pergracilis*		0.2	1
Poaceae	*Eriachne flaccida*		0.3	0.05
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.05	0.005
Poaceae	*Eriachne tenuiculmis*		0.6	25
Poaceae	*Paspalidium rarum*		0.1	0.005
Poaceae	*Setaria dielsii*		0.4	0.001
Poaceae	*Themeda triandra*		0.4	5
Poaceae	*Perotis rara*		0.05	0.01
Portulacaceae	**Portulaca oleracea*	Permitted - s11	0.05	0.05
Portulacaceae	*Portulaca filifolia*		0.2	0.001
Proteaceae	*Grevillea berryana*		2.5	0.01
Proteaceae	*Hakea lorea* subsp. *lorea*		4	0.1
Rubiaceae	*Spermacoce brachystema*		0.2	0.01
Santalaceae	*Santalum lanceolatum*		1.2	0.01

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Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		0.5	0.001
Scrophulariaceae	*Eremophila lanceolata*		0.2	0.005
Solanaceae	*Solanum lasiophyllum*		0.5	0.05

Appendix VI – Quadrat data

Site name	RHQ21	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	26/09/2023	**Date season 2**	13/04/2024
Easting	747355 mE	**Northing**	7429891 mS
Landform	Plain	**Topography**	Flat
Soil type	Sandy clay loam, surface rock cover	**Soil colour**	Red/orange
Fire history	Within 10 years	**Disturbances**	Roads or tracks, weeds
Vegetation code	C	**Vegetation condition**	Very good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Gomphrena canescens* subsp. *canescens*		0.15	0.001
Amaranthaceae	*Ptilotus obovatus*		0.5	0.01
Apocynaceae	*Vincetoxicum lineare*		0	0.001
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.3	0.001
Boraginaceae	*Trichodesma zeylanicum*		0.2	0.001
Chenopodiaceae	*Rhagodia* sp. Hamersley (M. Trudgen 17794)	Priority 3	1.2	0.01
Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0.2	0.001
Fabaceae	*Acacia adsurgens*		2	0.05

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Fabaceae	*Acacia ayersiana*		1.3	0.05
Fabaceae	*Acacia bivenosa*		2.1	0.01
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		3.5	0.2
Fabaceae	*Acacia pruinocarpa*		1.5	0.05
Fabaceae	*Acacia sericophylla*		1.9	0.05
Fabaceae	*Acacia* sp. (aneura complex)		2.1	0.5
Fabaceae	*Senna artemisioides* subsp. *helmsii*		1.5	0.005
Fabaceae	*Senna glaucifolia*		0.7	0.01
Fabaceae	*Senna glutinosa* subsp. *x luerssenii*		1.5	0.05
Gyrostemonaceae	*Codonocarpus cotinifolius*		3.5	0.01
Malvaceae	*Androcalva luteiflora*		1.7	0.05
Malvaceae	*Hibiscus burtonii*		0.5	0.001
Malvaceae	*Hibiscus sturtii* var. *campylochlamys*		0.2	0.001
Malvaceae	*Seringia nephrosperma*		0.5	0.001
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		8	0.05
Poaceae	*Aristida holathera* var. *holathera*		0.25	0.05
Poaceae	*Enneapogon polyphyllus*		0.2	0.005
Poaceae	*Paraneurachne muelleri*		0.3	0.001
Poaceae	*Triodia pungens*		0.8	20
Rubiaceae	*Psydrax suaveolens*		1.4	0.01
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		0.5	0.001
Scrophulariaceae	*Eremophila latrobei* subsp. *filiformis*		1.6	0.01
Solanaceae	*Solanum lasiophyllum*		0.3	0.001

Appendix VI – Quadrat data

Site name	RHQ22	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	26/09/2023	**Date season 2**	14/04/2024
Easting	751345 mE	**Northing**	7431784 mS
Landform	Medium drainage channel	**Topography**	Flat
Soil type	No soil (100% rock), surface rock cover	**Soil colour**	Red/orange
Fire history	Within 10 years	**Disturbances**	Weeds, animal tracks
Vegetation code	A	**Vegetation condition**	Good

Photo season 1

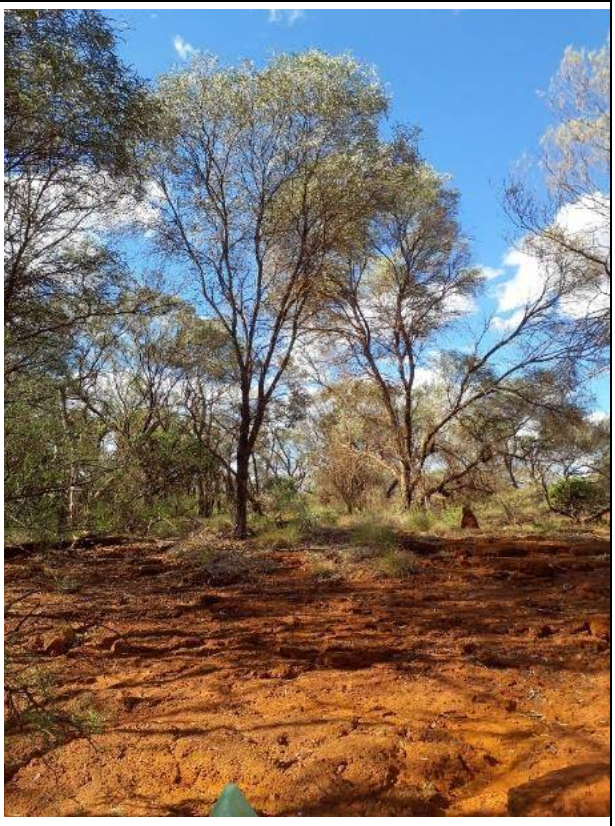

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Alternanthera denticulata*		0.2	0.001
Amaranthaceae	*Gomphrena canescens* subsp. *canescens*		0.25	0.005
Amaranthaceae	*Gomphrena lanata*		0.15	0.01
Amaranthaceae	*Ptilotus gaudichaudii*		0.25	0.001
Amaranthaceae	*Ptilotus obovatus*		0.8	0.1
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.4	0.1
Asteraceae	*Roebuckiella ciliocarpa*		0.15	0.001

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Cleomaceae	*Arivela viscosa*		0.6	1
Convolvulaceae	*Duperreya commixta*		0.7	0.01
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.3	0.1
Convolvulaceae	*Ipomoea racemigera*	Priority 2	0	0.005
Cucurbitaceae	*Cucumis variabilis*		0	0.002
Cyperaceae	*Bulbostylis barbata*		0.1	0.01
Cyperaceae	*Cyperus iria*		0.3	0.005
Cyperaceae	*Fimbristylis dichotoma*		0.2	0.1
Cyperaceae	*Schoenoplectiella laevis*		0.3	0.01
Euphorbiaceae	*Euphorbia biconvexa*		0.3	0.001
Euphorbiaceae	*Euphorbia* sp.		0.3	(blank)
Fabaceae	*Acacia adsurgens*		4	0.2
Fabaceae	*Acacia aptaneura*		3	1
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		10	11
Fabaceae	*Acacia* sp. (aneura complex)		4	1
Fabaceae	*Acacia tetragonophylla*		3.5	2
Fabaceae	*Isotropis atropurpurea*		0.5	0.001
Fabaceae	*Isotropis iophyta*		0.8	0.01
Fabaceae	*Senna artemisioides* subsp. *helmsii*		3	0.1
Fabaceae	*Senna notabilis*		0.3	0.001
Goodeniaceae	*Goodenia stobbsiana*		0.25	0.001
Haloragaceae	*Haloragis gossei* var. *gossei*		0.25	0.001
Lamiaceae	*Teucrium teucriiflorum*		0.5	0.01
Malvaceae	**Malvastrum americanum*	Permitted - s11	0.5	0.001
Malvaceae	*Abutilon fraseri*		0.5	0.005
Malvaceae	*Corchorus tridens*		0.3	0.01
Malvaceae	*Sida ectogama*		1.8	1
Malvaceae	*Sida* sp.		0.6	0.001
Marsileaceae	*Marsilea exarata*		0.05	0.1
Myrtaceae	*Eucalyptus xerothermica*		12	3
Poaceae	**Cenchrus ciliaris*	Permitted - s11	0.5	0.001
Poaceae	*Aristida contorta*		0.3	0.5
Poaceae	*Aristida inaequiglumis*		1.1	0.01
Poaceae	*Aristida obscura*		0.2	0.01
Poaceae	*Chrysopogon fallax*		0.5	1
Poaceae	*Dichanthium sericeum* subsp. *humilius*		0.2	0.1

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Poaceae	*Digitaria ammophila*		1	0.001
Poaceae	*Digitaria ctenantha*		0.2	0.01
Poaceae	*Elytrophorus spicatus*		0.05	0.001

Appendix VI – Quadrat data

Site name	RHQ23	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	28/09/2023	**Date season 2**	14/04/2024
Easting	747974 mE	**Northing**	7430508 mS
Landform	Plain	**Topography**	Flat
Soil type	Loam, surface rock cover	**Soil colour**	Red/brown
Fire history	Long Unburnt	**Disturbances**	Roads or tracks, weeds
Vegetation code	B	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Aizoaceae	*Trianthema glossostigmum*		0.01	0.001
Amaranthaceae	*Gomphrena lanata*		0.1	0.001
Amaranthaceae	*Ptilotus exaltatus*		0.5	0.001
Amaranthaceae	*Ptilotus gaudichaudii*		0.3	0.001
Amaranthaceae	*Ptilotus helipteroides*		0.15	0.001
Amaranthaceae	*Ptilotus obovatus*		1	0.01
Amaranthaceae	*Ptilotus roei*		0.01	0.001
Apocynaceae	*Cynanchum viminale* subsp. *australe*		0.2	0.001
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.3	0.001

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Brassicaceae	*Lepidium pholidogynum*		0.4	0.001
Chenopodiaceae	*Dysphania rhadinostachya* subsp. *rhadinostachya*		0.1	0.001
Cleomaceae	*Arivela viscosa*		0.4	0.001
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.3	0.001
Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0.3	0.001
Fabaceae	*Acacia aptaneura*		4	1
Fabaceae	*Acacia ayersiana*		7	12
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		3.5	20
Fabaceae	*Acacia pruinocarpa*		3	5
Fabaceae	*Acacia* sp. (aneura complex)		4	3
Fabaceae	*Gompholobium oreophilum*		0.6	0.001
Fabaceae	*Senna glaucifolia*		1.7	0.01
Goodeniaceae	*Goodenia prostrata*		0.06	0.002
Malvaceae	*Hibiscus burtonii*		0.4	0.001
Malvaceae	*Hibiscus sturtii* var. *platychlamys*		0.15	0.001
Malvaceae	*Malvaceae* sp.		0.4	0.001
Malvaceae	*Sida ectogama*		0.5	0.001
Malvaceae	*Sida* sp.		1	0.05
Malvaceae	*Sida* sp. *excedentifolia* (J.L. Egan 1925)		0.2	0.001
Poaceae	*Aristida contorta*		0.2	0.001
Poaceae	*Enneapogon polyphyllus*		0.15	0.001
Poaceae	*Eriachne benthamii*		0.6	0.005
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.05	0.001
Poaceae	*Paspalidium clementii*		0.5	0.01
Poaceae	*Triodia pungens*		1	0.01
Polygalaceae	*Polygala isingii*		0.1	0.001
Proteaceae	*Grevillea berryana*		2	0.5
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.4	0.001
Rubiaceae	*Spermacoce brachystema*		0.3	0.001
Santalaceae	*Anthobolus leptomerioides*		2.2	0.01
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.6	1
Zygophyllaceae	*Tribulus hirsutus*		0.8	0.001
Zygophyllaceae	*Tribulus* sp.		0	0.001

Appendix VI – Quadrat data

Site name	RHQ24	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	27/09/2023	**Date season 2**	n/a (could not be re-suveyed)
Easting	754065 mE	**Northing**	7436452 mS
Landform	Plain	**Topography**	Flat
Soil type	Loam, surface rock cover	**Soil colour**	Red/brown
Fire history	Long Unburnt	**Disturbances**	Roads or tracks, animal tracks
Vegetation code	B	**Vegetation condition**	Very Good

Photo season 1

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus obovatus*		1	0.05
Amaranthaceae	*Ptilotus schwartzii*		0.4	0.01
Apocynaceae	*Cynanchum viminale* subsp. *australe*		1.5	0.01
Fabaceae	*Acacia adsurgens*		2	0.1
Fabaceae	*Acacia ayersiana*		2.2	0.5
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		7	5
Fabaceae	*Acacia* sp. (aneura complex)		4	1
Fabaceae	*Senna artemisioides* subsp. *oligophylla*		1.3	0.05
Myrtaceae	*Corymbia ferriticola*		4.5	0.5
Poaceae	*Eragrostis eriopoda*		0.4	0.5
Poaceae	*Triodia melvillei*		1.5	1
Poaceae	*Triodia pungens*		0.6	1

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Proteaceae	*Grevillea berryana*		2	0.5
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.3	0.001
Rubiaceae	*Psydrax latifolia*		2	0.05
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.6	0.5

Appendix VI – Quadrat data

Site name	RHQ25	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	27/09/2023	**Date season 2**	12/04/2024
Easting	754482 mE	**Northing**	7436139 mS
Landform	Plain	**Topography**	Flat
Soil type	Loam, surface rock cover	**Soil colour**	Red/orange
Fire history	Long Unburnt	**Disturbances**	None
Vegetation code	G	**Vegetation condition**	Excellent

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus rotundifolius*		0.6	0.01
Convolvulaceae	*Duperreya commixta*		0	0.001
Fabaceae	*Acacia ancistrocarpa*		1.5	0.02
Fabaceae	*Acacia ayersiana*		0.4	0.01
Fabaceae	*Acacia bivenosa*		2.2	0.02
Fabaceae	*Acacia incurvaneura*		1.3	0.01
Fabaceae	*Acacia pruinocarpa*		4	0.15
Fabaceae	*Acacia rhodophloia*		2	0.05
Fabaceae	*Acacia sibirica*		2.5	1

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Fabaceae	*Acacia* sp. (aneura complex)		3	0.5
Fabaceae	*Acacia synchronicia*		4.5	1
Fabaceae	*Acacia tetragonophylla*		2.1	0.3
Fabaceae	*Senna artemisioides* subsp. *helmsii*		0.4	0.01
Fabaceae	*Senna glutinosa* subsp. *x luerssenii*		1.6	0.05
Goodeniaceae	*Goodenia scaevolina*		0.25	0.03
Goodeniaceae	*Goodenia triodiophila*		0.3	0.001
Gyrostemonaceae	*Codonocarpus cotinifolius*		1.2	0.03
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		6	0.5
Myrtaceae	*Corymbia hamersleyana*		6	1
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		1.6	0.1
Poaceae	*Sporobolus australasicus*		0.1	0.001
Poaceae	*Themeda triandra*		0.4	0.01
Poaceae	*Triodia pungens*		0.6	5
Poaceae	*Triodia wiseana*		0.7	40
Proteaceae	*Grevillea berryana*		2	0.2
Santalaceae	*Anthobolus leptomerioides*		0.5	0.01
Santalaceae	*Santalum lanceolatum*		3	0.1
Scrophulariaceae	*Eremophila latrobei* subsp. *filiformis*		1.5	0.01
Scrophulariaceae	*Eremophila platycalyx* subsp. *? pardalota*		1.7	0.5
Solanaceae	*Solanum lasiophyllum*		0.4	0.001

Appendix VI – Quadrat data

Site name	RHQ26	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	27/09/2023	**Date season 2**	12/04/2024
Easting	754064 mE	**Northing**	7436743 mS
Landform	Medium drainage channel	**Topography**	Flat
Soil type	Loam, surface rock cover	**Soil colour**	Red/brown
Fire history	Long Unburnt	**Disturbances**	Roads or tracks
Vegetation code	D	**Vegetation condition**	Excellent

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus obovatus*		1.2	0.5
Convolvulaceae	*Duperreya commixta*		2.5	0.005
Fabaceae	*Acacia ayersiana*		6	1
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		8	27
Fabaceae	*Acacia citrinoviridis*		12	5
Fabaceae	*Acacia pruinocarpa*		4	0.5
Fabaceae	*Acacia* sp. (aneura complex)		2.1	1
Fabaceae	*Petalostylis labicheoides*		2.1	5
Malvaceae	*Abutilon cunninghamii*		0.5	0.005

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Malvaceae	*Androcalva loxophylla*		0.3	0.001
Malvaceae	*Hibiscus coatesii*		1.5	0.5
Malvaceae	*Sida* sp. dark green fruits (S. van Leeuwen 2260)		0.3	0.005
Myrtaceae	*Corymbia hamersleyana*		12	11
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		5	2
Myrtaceae	*Eucalyptus trivalva*		8	0.001
Poaceae	*Enneapogon polyphyllus*		0.2	0.005
Poaceae	*Eriachne mucronata*		0.25	1
Poaceae	*Themeda triandra*		0.8	2
Poaceae	*Triodia pungens*		0.6	20
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.2	0.05
Rubiaceae	*Psydrax latifolia*		2.5	0.1
Santalaceae	*Anthobolus leptomerioides*		1.5	0.005
Sapindaceae	*Dodonaea lanceolata* var. *lanceolata*		1.8	0.01
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.5	0.05

Appendix VI – Quadrat data

Site name	RHQ27	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	27/09/2023	**Date season 2**	12/04/2024
Easting	754801 mE	**Northing**	7437228 mS
Landform	Medium drainage channel	**Topography**	Flat
Soil type	Rock mulch, sandy clay loam	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Signs of grazing
Vegetation code	D	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus obovatus*		0.6	0.05
Capparaceae	*Capparis lasiantha*		2.2	0.5
Cleomaceae	*Arivela viscosa*		0.6	0.15
Convolvulaceae	*Duperreya commixta*		0	0.01
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.2	0.001
Fabaceae	*Acacia aptaneura*		3.5	2
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		10	20
Fabaceae	*Acacia citrinoviridis*		11	5
Fabaceae	*Acacia pruinocarpa*		7	5
Fabaceae	*Acacia pyrifolia* var. *morrisonii*		1.5	0.15
Fabaceae	*Acacia rhodophloia*		3.5	0.05
Fabaceae	*Acacia* sp.		4	(blank)
Fabaceae	*Acacia tetragonophylla*		1.6	0.05

Appendix VI – Quadrat data

Fabaceae	*Isotropis atropurpurea*		0.4	0.01
Fabaceae	*Isotropis iophyta*		0.4	0.01
Fabaceae	*Petalostylis labicheoides*		3	1
Fabaceae	*Senna artemisioides* subsp. *x artemisioides*		2	2
Malvaceae	*Abutilon cunninghamii*		0.5	0.01
Malvaceae	*Hibiscus sturtii* var. *campylochlamys*		0.3	0.01
Malvaceae	*Sida* sp. L (A.M. Ashby 4202)		0.25	0.01
Myrtaceae	*Corymbia hamersleyana*		10	1
Myrtaceae	*Eucalyptus gamophylla*		8	1
Poaceae	*Cymbopogon obtectus*		0.5	0.5
Poaceae	*Enneapogon polyphyllus*		0.2	0.001
Poaceae	*Eriachne mucronata*		0.25	0.5
Poaceae	*Eulalia aurea*		0.8	0.15
Poaceae	*Themeda triandra*		1.2	5
Poaceae	*Triodia pungens*		1.2	8
Poaceae	*Triodia vanleeuwenii*		0.7	16
Proteaceae	*Hakea lorea* subsp. *lorea*		3	0.02
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.2	0.01
Rubiaceae	*Psydrax latifolia*		2	0.15
Santalaceae	*Anthobolus leptomerioides*		1.1	0.05
Sapindaceae	*Dodonaea lanceolata* var. *lanceolata*		2.2	0.05
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1	0.05
Scrophulariaceae	*Eremophila galeata*		2.2	0.1
Scrophulariaceae	*Eremophila longifolia*		3.3	1
Solanaceae	*Solanum cleistogamum*		0.2	0.01

Appendix VI – Quadrat data

Site name	RHQ28	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	27/09/2023	**Date season 2**	12/04/2024
Easting	754750 mE	**Northing**	7437615 mS
Landform	Small Hill	**Topography**	Gradual Slope
Soil type	Loam, surface rock cover	**Soil colour**	Red/brown
Fire history	Long Unburnt	**Disturbances**	Exploration (drilling, pads sumps etc), roads or tracks
Vegetation code	B	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus helipteroides*		0.3	0.05
Amaranthaceae	*Ptilotus obovatus*		1	1
Boraginaceae	*Euploca inexplicita*		0.2	0.01
Boraginaceae	*Trichodesma zeylanicum*		0.25	0.05
Chenopodiaceae	*Rhagodia* sp. Hamersley (M. Trudgen 17794)	Priority 3	1.2	0.001
Cleomaceae	*Arivela viscosa*		0.6	2
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.2	0.05
Cyperaceae	*Bulbostylis barbata*		0.05	0.01

Appendix VI – Quadrat data

Fabaceae	*Acacia aptaneura*		5	5
Fabaceae	*Acacia inaequilatera*		5	3
Fabaceae	*Acacia pruinocarpa*		4	5
Fabaceae	*Acacia sibirica*		3	2
Fabaceae	*Acacia tetragonophylla*		2.2	2
Fabaceae	*Indigofera monophylla*		0.15	0.05
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		3	0.5
Fabaceae	*Senna glutinosa* subsp. *x luerssenii*		1.2	0.1
Fabaceae	*Senna notabilis*		0.2	0.01
Gyrostemonaceae	*Codonocarpus cotinifolius*		1.8	0.1
Malvaceae	*Abutilon* sp.		0.15	0.005
Malvaceae	*Corchorus lasiocarpus* subsp. *lasiocarpus*		0.2	0.005
Malvaceae	*Hibiscus burtonii*		0.25	0.005
Malvaceae	*Hibiscus sturtii* var. *truncatus*		0.5	0.001
Poaceae	*Enneapogon polyphyllus*		0.2	0.003
Poaceae	*Triodia pungens*		1	30
Proteaceae	*Grevillea berryana*		2.8	0.5
Rubiaceae	*Psydrax latifolia*		1.7	0.01
Santalaceae	*Anthobolus leptomerioides*		3	0.1
Scrophulariaceae	*Eremophila exilifolia*		1.6	2
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.5	2
Scrophulariaceae	*Eremophila galeata*		1.8	3

Appendix VI – Quadrat data

Site name	RHQ29	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	27/09/2023	**Date season 2**	12/04/2024
Easting	755045 mE	**Northing**	7437663 mS
Landform	Plain	**Topography**	Flat
Soil type	Loam, minimal loose soil due to erosion (Gibbers)	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Exploration (drilling, pads sumps etc), roads or tracks, signs of grazing
Vegetation code	B	**Vegetation condition**	Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus roei*		0.08	0.01
Amaranthaceae	*Ptilotus schwartzii*		0.4	0.01
Apocynaceae	*Cynanchum viminale* subsp. *australe*		0	0.05
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.15	0.001
Cyperaceae	*Fimbristylis dichotoma*		0.15	0.01
Fabaceae	*Acacia hilliana*		0.3	0.05
Fabaceae	*Acacia incurvaneura*		6	5
Fabaceae	*Acacia rhodophloia*		3	0.15

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Fabaceae	*Acacia sibirica*		5	0.1
Fabaceae	*Acacia* sp.		6	(blank)
Fabaceae	*Acacia tetragonophylla*		1.8	0.15
Fabaceae	*Senna glaucifolia*		1.6	0.02
Fabaceae	*Senna notabilis*		0.25	0.001
Malvaceae	*Hibiscus burtonii*		0.7	0.001
Malvaceae	*Sida* sp.		0.4	0.02
Malvaceae	*Sida* sp. dark green fruits (S. van Leeuwen 2260)		0.6	0.001
Poaceae	*Aristida contorta*		0.3	8
Poaceae	*Eragrostis eriopoda*		0.5	0.01
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.15	0.01
Poaceae	*Triodia pungens*		1.5	1
Poaceae	*Triodia wiseana*		0.7	0.15
Poaceae	*Perotis rara*		0.2	0.01
Proteaceae	*Grevillea berryana*		4	0.3
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.3	0.05
Rubiaceae	*Psydrax latifolia*		2.3	0.2
Rubiaceae	*Psydrax suaveolens*		1	0.01
Santalaceae	*Anthobolus leptomerioides*		1.9	0.5
Scrophulariaceae	*Eremophila exilifolia*		1.5	0.02
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		0.5	0.01
Scrophulariaceae	*Eremophila galeata*		1.2	1
Scrophulariaceae	*Eremophila latrobei* subsp. *filiformis*		1.3	0.05
Solanaceae	*Solanum lasiophyllum*		1	0.001

Appendix VI – Quadrat data

Site name	RHQ30	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	29/09/2023	**Date season 2**	14/04/2024
Easting	751103 mE	**Northing**	7430942 mS
Landform	Plain	**Topography**	Flat
Soil type	Clay, loam	**Soil colour**	Red/brown
Fire history	Long Unburnt	**Disturbances**	Weeds, rubbish, roads or tracks
Vegetation code	A	**Vegetation condition**	Very Good

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus exaltatus*		0.1	0.001
Amaranthaceae	*Ptilotus gaudichaudii*		0.2	0.001
Amaranthaceae	*Ptilotus helipteroides*		0.3	0.001
Amaranthaceae	*Ptilotus obovatus*		0.7	0.1
Amaranthaceae	*Ptilotus xerophilus*		0.4	0.02
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.3	0.01
Asteraceae	*Asteraceae* sp.		0.15	(blank)
Asteraceae	*Brachyscome iberidifolia*		0.2	0.001
Chenopodiaceae	*Maireana villosa*		0.4	0.001

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Chenopodiaceae	*Rhagodia* sp. Hamersley (M. Trudgen 17794)	Priority 3	1.5	0.02
Chenopodiaceae	*Salsola australis*		0.2	0.01
Cleomaceae	*Areocleome oxalidea*		0.1	0.001
Cleomaceae	*Arivela viscosa*		0.9	50
Convolvulaceae	*Duperreya commixta*		0	0.01
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.2	0.001
Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0	0.001
Euphorbiaceae	*Euphorbia biconvexa*		0.3	0.001
Fabaceae	*Acacia aptaneura*		2.3	0.05
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		9	2
Fabaceae	*Acacia pruinocarpa*		7	2
Fabaceae	*Acacia pyrifolia* var. *morrisonii*		1	0.001
Fabaceae	*Acacia* sp. (aneura complex)		8	2
Fabaceae	*Acacia tetragonophylla*		1.9	0.01
Fabaceae	*Indigofera georgei*		0.1	0.001
Fabaceae	*Tephrosia* sp.		0.2	0.01
Fabaceae	*Tephrosia supina*		0.15	0.001
Malvaceae	**Malvastrum americanum*	Permitted - s11	0.6	0.02
Malvaceae	*Abutilon macrum*		0.3	0.001
Malvaceae	*Abutilon otocarpum*		0.25	0.001
Malvaceae	*Hibiscus burtonii*		0.9	0.002
Malvaceae	*Sida ectogama*		1.5	0.5
Malvaceae	*Sida* sp. L (A.M. Ashby 4202)		0.01	0.001
Myrtaceae	*Corymbia candida* subsp. *candida*		10	0.5
Myrtaceae	*Corymbia hamersleyana*		12	0.5
Nyctaginaceae	*Boerhavia coccinea*		0	0.001
Poaceae	*Aristida contorta*		0.2	0.5
Poaceae	*Aristida inaequiglumis*		0.5	0.1
Poaceae	*Dactyloctenium radulans*		0.25	0.001
Poaceae	*Digitaria ctenantha*		0.2	0.001
Poaceae	*Enneapogon polyphyllus*		0.2	0.1
Poaceae	*Enteropogon ramosus*		0.3	0.01
Poaceae	*Panicum effusum*		0.15	0.001
Poaceae	*Paspalidium clementii*		0.4	0.001
Poaceae	*Themeda triandra*		0.3	0.05
Polygalaceae	*Polygala isingii*		0.5	0.001

Appendix VI – Quadrat data

Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.2	0.03
Rubiaceae	*Spermacoce brachystema*		0.2	0.001
Rubiaceae	*Psydrax latifolia*		3	0.1
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		0.9	0.03
Scrophulariaceae	*Eremophila latrobei* subsp. *filiformis*		1.5	0.002
Scrophulariaceae	*Eremophila longifolia*		0.5	0.001
Solanaceae	*Solanum lasiophyllum*		0.4	0.001
Zygophyllaceae	*Tribulus astrocarpus*		0.1	0.001
Zygophyllaceae	*Tribulus cistoides*		0.05	0.001

Appendix VI – Quadrat data

Site name	RHQ31	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	28/09/2023	**Date season 2**	13/04/2024
Easting	751498 mE	**Northing**	7427641 mS
Landform	Gibber Plain	**Topography**	Flat
Soil type	Loam, surface rock cover	**Soil colour**	Red/orange
Fire history	Within 10 years	**Disturbances**	Weeds
Vegetation code	B	**Vegetation condition**	Excellent

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus fusiformis*		0.25	0.2
Amaranthaceae	*Ptilotus schwartzii*		0.3	0.05
Apocynaceae	*Cynanchum viminale* subsp. *australe*		0	0.2
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.2	0.5
Cucurbitaceae	*Cucumis variabilis*		0	0.01
Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0.5	0.5
Fabaceae	*Acacia ayersiana*		2.1	1
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		7	3
Fabaceae	*Acacia incurvaneura*		8	7

Appendix VI – Quadrat data

Fabaceae	*Acacia pruinocarpa*		3.5	0.5
Fabaceae	*Acacia rhodophloia*		4	2
Fabaceae	*Acacia sibirica*		1.6	0.2
Fabaceae	*Acacia tetragonophylla*		1.4	0.2
Fabaceae	*Senna glaucifolia*		0.8	0.1
Malvaceae	*Hibiscus burtonii*		1.3	0.5
Malvaceae	*Hibiscus sturtii* var. *campylochlamys*		0.4	0.1
Malvaceae	*Sida ectogama*		1.2	0.3
Montiaceae	*Calandrinia* sp.		0.05	0.01
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		5.5	0.5
Poaceae	*Aristida contorta*		0.25	1
Poaceae	*Aristida inaequiglumis*		0.2	0.05
Poaceae	*Enneapogon polyphyllus*		0.2	0.1
Poaceae	*Enteropogon ramosus*		0.5	0.01
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.03	0.01
Poaceae	*Thyridolepis xerophila*		0.3	0.1
Poaceae	*Triodia pungens*		0.3	0.05
Poaceae	*Triodia vanleeuwenii*		0.3	2
Poaceae	*Perotis rara*		0.1	0.05
Polygalaceae	*Polygala isingii*		0.05	0.01
Portulacaceae	**Portulaca oleracea*	Permitted - s11	0.05	0.05
Proteaceae	*Grevillea berryana*		8	3
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.2	0.1
Rubiaceae	*Spermacoce brachystema*		0.4	0.2
Rubiaceae	*Psydrax latifolia*		1.5	0.1
Santalaceae	*Anthobolus leptomerioides*		2.5	0.1
Santalaceae	*Santalum lanceolatum*		1.6	0.1
Scrophulariaceae	*Eremophila exilifolia*		1.2	2
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.7	0.5
Scrophulariaceae	*Eremophila galeata*		2.1	0.1
Scrophulariaceae	*Eremophila latrobei* subsp. *filiformis*		1.9	0.5
Solanaceae	*Solanum cleistogamum*		0.3	0.01
Zygophyllaceae	*Tribulus hirsutus*		0.1	0.5

Appendix VI – Quadrat data

Site name	RHQ32	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	29/09/2023	**Date season 2**	14/04/2024
Easting	750453 mE	**Northing**	7431090 mS
Landform	Medium drainage channel	**Topography**	Flat
Soil type	Sandy clay loam, surface rock cover	**Soil colour**	Red/brown
Fire history	Within 10 years	**Disturbances**	Roads or tracks, signs of grazing, weeds
Vegetation code	A	**Vegetation condition**	Very good

Photo season 1

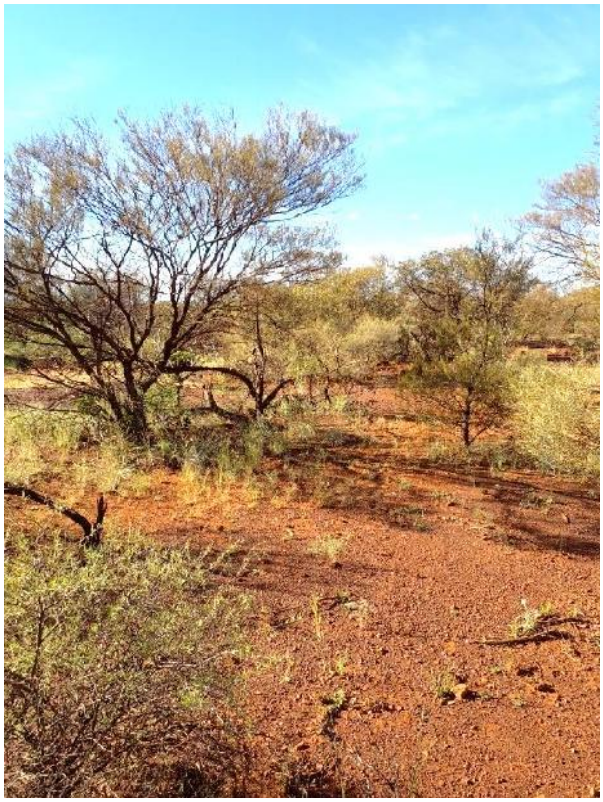

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Gomphrena canescens* subsp. *canescens*		0.2	0.01
Amaranthaceae	*Ptilotus gaudichaudii*		0.5	0.001
Amaranthaceae	*Ptilotus helipteroides*		0.2	0.001
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.4	0.01
Boraginaceae	*Euploca cunninghamii*		0.25	0.01
Cleomaceae	*Areocleome oxalidea*		0.08	0.001
Cleomaceae	*Arivela viscosa*		0.5	0.01

Appendix VI – Quadrat data

Convolvulaceae	*Duperreya commixta*		0	0.001
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.3	0.001
Cyperaceae	*Bulbostylis barbata*		0.25	0.001
Cyperaceae	*Cyperus iria*		0.3	0.01
Cyperaceae	*Fimbristylis dichotoma*		0.6	0.001
Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0.05	0.01
Fabaceae	*Acacia aptaneura*		6	6
Fabaceae	*Acacia citrinoviridis*		5	10
Fabaceae	*Acacia rhodophloia*		5.5	5
Fabaceae	*Acacia tetragonophylla*		2.5	0.05
Fabaceae	*Senna artemisioides* subsp. *helmsii*		1.2	0.01
Fabaceae	*Senna artemisioides* subsp. *oligophylla*		0.5	0.01
Goodeniaceae	*Goodenia prostrata*		0.05	0.01
Malvaceae	*Sida ectogama*		1.2	0.01
Marsileaceae	*Marsilea exarata*		0.15	0.1
Montiaceae	*Calandrinia stagnensis*		0.02	0.01
Nyctaginaceae	*Boerhavia coccinea*		0.1	0.01
Poaceae	*Aristida contorta*		0.4	8
Poaceae	*Aristida inaequiglumis*		0.3	0.05
Poaceae	*Chrysopogon fallax*		1.2	5
Poaceae	*Digitaria ctenantha*		0.25	0.001
Poaceae	*Elytrophorus spicatus*		0.1	0.001
Poaceae	*Enneapogon polyphyllus*		0.4	0.01
Poaceae	*Eriachne mucronata*		0.8	0.02
Poaceae	*Eriachne* sp.		0.3	0.05
Poaceae	*Sporobolus australasicus*		0.1	0.001
Poaceae	*Themeda triandra*		0.3	3
Poaceae	*Triodia pungens*		1	2
Poaceae	*Perotis rara*		0.15	0.001
Portulacaceae	**Portulaca oleracea*	Permitted - s11	0.002	0.01
Portulacaceae	*Portulaca cyclophylla*		0.02	0.001
Proteaceae	*Grevillea berryana*		2.5	0.05
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.3	0.001
Rubiaceae	*Spermacoce brachystema*		0.1	0.001
Rubiaceae	*Psydrax latifolia*		1.8	0.05
Santalaceae	*Anthobolus leptomerioides*		1	0.02

Appendix VI – Quadrat data

Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1	0.05
Scrophulariaceae	*Eremophila galeata*		1.8	3
Scrophulariaceae	*Eremophila latrobei* subsp. *filiformis*		0.8	0.05
Solanaceae	*Solanum lasiophyllum*		0.2	0.01

Appendix VI – Quadrat data

Site name	RHQ33	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	28/09/2023	**Date season 2**	13/04/2024
Easting	751839 mE	**Northing**	7427184 mS
Landform	Plain	**Topography**	Flat
Soil type	Sandy clay loam	**Soil colour**	Red/orange
Fire history	Long Unburnt	**Disturbances**	None
Vegetation code	B	**Vegetation condition**	Excellent

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus obovatus*		0.8	0.1
Convolvulaceae	*Duperreya commixta*		0	0.02
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.25	0.1
Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0.5	0.1
Fabaceae	*Acacia aptaneura*		8	10
Fabaceae	*Acacia ayersiana*		2.5	0.5
Fabaceae	*Acacia bivenosa*		1.9	0.05
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		5	15
Fabaceae	*Acacia inaequilatera*		1.5	0.01

Appendix VI – Quadrat data

Fabaceae	*Acacia kempeana*		4	0.5
Fabaceae	*Acacia pruinocarpa*		2.2	0.01
Fabaceae	*Acacia sibirica*		3	1
Fabaceae	*Acacia tetragonophylla*		2.1	0.02
Fabaceae	*Indigofera monophylla*		0.2	0.01
Fabaceae	*Senna artemisioides* subsp. *oligophylla x helmsii*		0.4	0.01
Fabaceae	*Senna notabilis*		0.2	0.005
Malvaceae	*Corchorus tridens*		0.2	0.01
Malvaceae	*Hibiscus burtonii*		0.9	0.01
Malvaceae	*Hibiscus sturtii* var. *campylochlamys*		0.3	0.01
Malvaceae	*Sida* sp. Supplejack Station (T.S. Henshall 2345)		0.3	0.01
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		5	0.1
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		1.2	0.5
Myrtaceae	*Eucalyptus trivalva*		5	5
Myrtaceae	*Eucalyptus xerothermica*		7	0.5
Poaceae	*Aristida contorta*		0.1	0.002
Poaceae	*Aristida inaequiglumis*		0.4	30
Poaceae	*Eragrostis cumingii*		0.05	0.01
Poaceae	*Eriachne flaccida*		0.25	0.1
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.1	0.01
Poaceae	*Eulalia aurea*		0.25	0.01
Poaceae	*Schizachyrium fragile*		0.2	0.1
Poaceae	*Sporobolus australasicus*		0.1	0.005
Poaceae	*Themeda triandra*		0.3	20
Poaceae	*Triodia wiseana*		0.4	2
Poaceae	*Perotis rara*		0.05	0.01
Polygalaceae	*Polygala isingii*		0.03	0.001
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.3	0.01
Rubiaceae	*Spermacoce brachystema*		0.2	0.01
Rubiaceae	*Psydrax latifolia*		2	0.1

Appendix VI – Quadrat data

Site name	RHQ34	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	29/09/2023	**Date season 2**	10/04/2024
Easting	751005 mE	**Northing**	7428095 mS
Landform	Minor drainage	**Topography**	Flat
Soil type	Sandy clay loam	**Soil colour**	Red/brown
Fire history	Long Unburnt	**Disturbances**	None
Vegetation code	E	**Vegetation condition**	Excellent

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Convolvulaceae	*Bonamia erecta*		0.4	0.001
Convolvulaceae	*Duperreya commixta*		0	0.002
Fabaceae	*Acacia adoxa* var. *adoxa*		0.5	0.25
Fabaceae	*Acacia adsurgens*		2	1
Fabaceae	*Acacia ancistrocarpa*		2	0.15
Fabaceae	*Acacia arida*		1.5	0.001
Fabaceae	*Acacia elachantha*		4	6
Fabaceae	*Acacia monticola*		4	0.015
Fabaceae	*Acacia tenuissima*		1.7	5

Appendix VI – Quadrat data

Goodeniaceae	*Goodenia triodiophila*		0.8	0.001
Goodeniaceae	*Scaevola parvifolia* subsp. *pilbarae*		0.6	0.001
Malvaceae	*Androcalva luteiflora*		1.8	0.05
Malvaceae	*Seringia exastia*		0.5	0.5
Malvaceae	*Sida* sp.		0.4	0.001
Myrtaceae	*Corymbia hamersleyana*		15	20
Oleaceae	*Jasminum didymum* subsp. *lineare*		0.5	0.001
Poaceae	*Cymbopogon obtectus*		1	0.05
Poaceae	*Eulalia aurea*		0.6	0.02
Poaceae	*Themeda triandra*		1	5
Poaceae	*Triodia pungens*		1.1	70
Poaceae	*Triodia vanleeuwenii*		0.6	0.01
Proteaceae	*Grevillea wickhamii* subsp. *hispidula*		4.5	0.1
Santalaceae	*Santalum lanceolatum*		2.5	1

Appendix VI – Quadrat data

Site name	RHQ35	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	28/09/2023	**Date season 2**	13/04/2024
Easting	751197 mE	**Northing**	7427170 mS
Landform	Plain	**Topography**	Flat
Soil type	Minimal loose soil due to erosion (Gibbers), sandy clay loam	**Soil colour**	Red/orange
Fire history	Long Unburnt	**Disturbances**	None
Vegetation code	G	**Vegetation condition**	Excellent

Photo season 1

Photo season 2

Family	Taxon name	Status	Height	Cover %
Chenopodiaceae	*Maireana georgei*		0.7	0.01
Fabaceae	*Acacia arida*		1	0.05
Fabaceae	*Acacia ayersiana*		1.6	0.02
Fabaceae	*Acacia bivenosa*		1	0.02
Fabaceae	*Acacia kempeana*		1.3	0.02
Fabaceae	*Acacia sibirica*		1.9	1
Fabaceae	*Acacia tetragonophylla*		2.1	1
Goodeniaceae	*Scaevola spinescens*		0.7	0.05

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Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		2.2	0.02
Myrtaceae	*Eucalyptus socialis* subsp. *eucentrica*		4	2
Poaceae	*Eriachne mucronata*		0.25	0.01
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.04	0.005
Poaceae	*Triodia angusta*		0.8	25
Poaceae	*Triodia wiseana*		0.5	25
Scrophulariaceae	*Eremophila lachnocalyx*		0.9	0.3

Appendix VI – Quadrat data

Site name	RHQ36	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	n/a	**Date season 2**	15/04/2024
Easting	754617 mE	**Northing**	7436664 mS
Landform	Small Hill	**Topography**	Undulating
Soil type	Rock mulch, sandy clay loam	**Soil colour**	Red/brown,Red/orange
Fire history	Long Unburnt	**Disturbances**	None
Vegetation code	C	**Vegetation condition**	Excellent

Photo season 2

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus obovatus*		1.3	0.01
Amaranthaceae	*Ptilotus rotundifolius*		0.2	0.001
Apocynaceae	*Cynanchum viminale* subsp. *australe*		0.7	0.001
Convolvulaceae	*Duperreya commixta*		0	0.001
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.2	0.001
Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0.1	0.001
Fabaceae	*Acacia aptaneura*		3	7
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		2.5	7

Appendix VI – Quadrat data

Fabaceae	*Acacia incurvaneura*		1.6	1
Fabaceae	*Acacia pruinocarpa*		2.5	1
Fabaceae	*Acacia rhodophloia*		1.6	1
Fabaceae	*Acacia sibirica*		1.6	0.5
Fabaceae	*Indigofera monophylla*		0.3	0.001
Fabaceae	*Senna glaucifolia*		0.6	0.001
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		1.5	0.01
Goodeniaceae	*Goodenia stobbsiana*		0.2	0.001
Goodeniaceae	*Goodenia triodiophila*		0.3	0.001
Malvaceae	*Corchorus lasiocarpus* subsp. *lasiocarpus*		0.2	0.001
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		5	1
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		4	11
Poaceae	*Enneapogon polyphyllus*		0.1	0.001
Poaceae	*Eriachne mucronata*		0.4	0.005
Poaceae	*Triodia pungens*		0.5	5
Poaceae	*Triodia vanleeuwenii*		0.5	20
Polygalaceae	*Polygala isingii*		0.1	0.001
Proteaceae	*Grevillea berryana*		3.5	0.01
Scrophulariaceae	*Eremophila exilifolia*		1	0.001
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		0.8	0.01
Scrophulariaceae	*Eremophila latrobei* subsp. *filiformis*		1.6	0.001
Solanaceae	*Solanum lasiophyllum*		0.3	0.001

Appendix VI – Quadrat data

Site name	RHQ37	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	n/a	**Date season 2**	13/04/2024
Easting	751635 mE	**Northing**	7427342 mS
Landform	Plain	**Topography**	Gradual Slope
Soil type	Calcrete (orange and stony), sand, surface rock cover	**Soil colour**	Red/orange
Fire history	Long Unburnt	**Disturbances**	None
Vegetation code	G	**Vegetation condition**	Excellent

Photo season 2

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus rotundifolius*		0.4	0.01
Capparaceae	*Capparis lasiantha*		0.7	0.005
Fabaceae	*Acacia aptaneura*		1.5	0.1
Fabaceae	*Acacia bivenosa*		1.8	0.5
Fabaceae	*Acacia sibirica*		1.1	0.1
Fabaceae	*Acacia synchronicia*		1	0.55
Fabaceae	*Acacia tetragonophylla*		0.8	0.5
Fabaceae	*Senna glutinosa* subsp. *x luerssenii*		1.2	0.005

Appendix VI – Quadrat data

Goodeniaceae	*Goodenia triodiophila*		0.2	0.001
Goodeniaceae	*Scaevola spinescens*		0.4	0.5
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		4	5
Myrtaceae	*Eucalyptus socialis* subsp. *eucentrica*		4	5
Myrtaceae	*Eucalyptus trivalva*		2.1	0.2
Poaceae	*Eriachne mucronata*		0.25	0.3
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.05	0.005
Poaceae	*Triodia angusta*		0.9	35
Poaceae	*Triodia pungens*		0.3	0.05
Poaceae	*Triodia wiseana*		0.6	25
Scrophulariaceae	*Eremophila lachnocalyx*		0.7	0.2
Solanaceae	*Solanum lasiophyllum*		0.3	0.001

Appendix VI – Quadrat data

Site name	RHQ38	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	n/a	**Date season 2**	15/04/2024
Easting	754364 mE	**Northing**	7437254 mS
Landform	Small Hill	**Topography**	Flat
Soil type	Sandy clay loam	**Soil colour**	Red/brown
Fire history	Long Unburnt	**Disturbances**	Exploration (drilling, pads sumps etc), signs of grazing
Vegetation code	C	**Vegetation condition**	Very Good

Photo season 2

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus schwartzii*		0.6	0.001
Fabaceae	*Acacia aptaneura*		5	10
Fabaceae	*Acacia ayersiana*		3.5	2
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		3	1
Fabaceae	*Acacia pruinocarpa*		4	4
Fabaceae	*Senna glutinosa* subsp. *x luerssenii*		1.7	0.15
Poaceae	*Enneapogon polyphyllus*		0.3	0.05
Poaceae	*Eriachne pulchella* subsp. *pulchella*		0.15	0.15

Appendix VI – Quadrat data

Poaceae	*Triodia pungens*		0.8	5
Poaceae	*Triodia vanleeuwenii*		0.7	7
Rubiaceae	*Psydrax latifolia*		1.6	0.15
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		0.7	0.05
Scrophulariaceae	*Eremophila galeata*		1.6	1
Solanaceae	*Solanum lasiophyllum*		1	0.05

Appendix VI – Quadrat data

Site name	RHQ39	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	n/a	**Date season 2**	15/04/2024
Easting	754751 mE	**Northing**	7437472 mS
Landform	Small Hill	**Topography**	Flat
Soil type	Loam, surface rock cover	**Soil colour**	Red/orange
Fire history	Long Unburnt	**Disturbances**	None
Vegetation code	C	**Vegetation condition**	Excellent

Photo season 2

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Ptilotus calostachyus*		0.8	0.02
Amaranthaceae	*Ptilotus obovatus*		0.6	0.01
Amaranthaceae	*Ptilotus rotundifolius*		0.8	0.01
Convolvulaceae	*Duperreya commixta*		0	0.001
Cyperaceae	*Fimbristylis simulans*		0.1	0.005
Fabaceae	*Acacia ancistrocarpa*		3	3
Fabaceae	*Acacia aptaneura*		2.5	1
Fabaceae	*Acacia pruinocarpa*		2.1	1

Appendix VI – Quadrat data

Fabaceae	*Acacia rhodophloia*		3.5	3
Fabaceae	*Acacia tetragonophylla*		1.8	0.3
Fabaceae	*Gompholobium oreophilum*		0.3	0.002
Fabaceae	*Indigofera monophylla*		0.15	0.01
Fabaceae	*Senna ferraria*		1.8	0.1
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		1.8	0.5
Fabaceae	*Senna glutinosa* subsp. *pruinosa*		1.6	0.5
Fabaceae	*Senna glutinosa* subsp. *x luerssenii*		1.9	0.2
Goodeniaceae	*Goodenia stobbsiana*		0.25	0.002
Malvaceae	*Corchorus lasiocarpus* subsp. *lasiocarpus*		0.6	0.05
Malvaceae	*Hibiscus coatesii*		0.8	0.01
Malvaceae	*Sida cardiophylla*		0.7	0.005
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		6	2
Myrtaceae	*Eucalyptus leucophloia* subsp. *leucophloia*		6	5
Poaceae	*Aristida inaequiglumis*		0.3	0.01
Poaceae	*Cymbopogon obtectus*		0.5	0.01
Poaceae	*Digitaria ammophila*		0.3	0.002
Poaceae	*Eriachne mucronata*		0.4	0.2
Poaceae	*Paraneurachne muelleri*		0.3	0.005
Poaceae	*Triodia pungens*		0.8	1
Poaceae	*Triodia vanleeuwenii*		0.6	50
Proteaceae	*Grevillea berryana*		2.8	0.1
Rubiaceae	*Psydrax latifolia*		2.1	0.1
Santalaceae	*Anthobolus leptomerioides*		1.6	0.01
Scrophulariaceae	*Eremophila exilifolia*		1.2	2
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.8	0.02
Scrophulariaceae	*Eremophila galeata*		0.7	0.05
Scrophulariaceae	*Eremophila latrobei* subsp. *filiformis*		0.8	0.005
Solanaceae	*Solanum horridum*		0.3	0.005
Solanaceae	*Solanum lasiophyllum*		0.6	0.01

Appendix VI – Quadrat data

Site name	RHQ40	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	-	**Date season 2**	15/04/2024
Easting	752066 mE	**Northing**	7433083 mS
Landform	Flood Plain (associated with creekline)	**Topography**	Flat
Soil type	Clay, loam, surface rock cover	**Soil colour**	Red/orange
Fire history	Long Unburnt	**Disturbances**	Weeds
Vegetation code	B	**Vegetation condition**	Excellent

Photo season 2

Photo season 2

Family	Taxon name	Status	Height	Cover %
Amaranthaceae	*Gomphrena kanisii*		0.2	0.005
Amaranthaceae	*Ptilotus obovatus*		0.6	0.5
Asteraceae	**Bidens bipinnata*	Permitted - s11	0.2	0.002
Chenopodiaceae	*Maireana villosa*		0.2	0.3
Chenopodiaceae	*Rhagodia* sp. Hamersley (M. Trudgen 17794)	Priority 3	1.9	0.1
Cleomaceae	*Arivela viscosa*		0.4	0.1
Convolvulaceae	*Duperreya commixta*		0	0.003
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.2	0.1

Appendix VI – Quadrat data

Euphorbiaceae	*Euphorbia australis* var. *hispidula*		0.1	0.002
Fabaceae	*Acacia aptaneura*		5	5
Fabaceae	*Acacia ayersiana*		5	1
Fabaceae	*Acacia catenulata* subsp. *occidentalis*		15	10
Fabaceae	*Acacia pruinocarpa*		10	2
Fabaceae	*Acacia tetragonophylla*		2.8	1
Malvaceae	*Hibiscus burtonii*		0.4	0.002
Malvaceae	*Hibiscus coatesii*		0.2	0.005
Malvaceae	*Hibiscus sturtii* var. *truncatus*		0.3	0.01
Malvaceae	*Sida ectogama*		1.3	8
Poaceae	*Aristida contorta*		0.2	1
Poaceae	*Enneapogon polyphyllus*		0.2	0.05
Poaceae	*Iseilema membranaceum*		0.1	0.001
Poaceae	*Schizachyrium fragile*		0.4	0.005
Poaceae	*Triodia melvillei*		0.6	10
Poaceae	*Triodia pungens*		0.5	2
Polygalaceae	*Polygala isingii*		0.05	0.001
Proteaceae	*Grevillea berryana*		4.5	0.5
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		0.2	0.005
Rubiaceae	*Spermacoce brachystema*		0.2	0.01
Rubiaceae	*Psydrax latifolia*		2.2	0.5
Santalaceae	*Anthobolus leptomerioides*		1.8	0.3
Scrophulariaceae	*Eremophila forrestii* subsp. *forrestii* ms		1.4	2
Scrophulariaceae	*Eremophila latrobei* subsp. *filiformis*		1.7	0.3

Appendix VI – Quadrat data

Site name	RHQ41	**Site type**	Flora Quadrat (50 x 50 m)
Date season 1	n/a	**Date season 2**	15/04/2024
Easting	752103 mE	**Northing**	7433495 mS
Landform	Small Hill	**Topography**	Undulating
Soil type	Minimal loose soil due to erosion (Gibbers), sandy clay loam, surface rock cover	**Soil colour**	Red/brown, red/orange
Fire history	Within 10 years	**Disturbances**	None
Vegetation code	F	**Vegetation condition**	Excellent

Photo season 2

Photo season 2

Family	Taxon name	Status	Height	Cover %
Convolvulaceae	*Bonamia erecta*		0.4	0.001
Convolvulaceae	*Duperreya commixta*		0	0.001
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		0.3	0.001
Fabaceae	*Acacia adsurgens*		2	1
Fabaceae	*Acacia ancistrocarpa*		2	5
Fabaceae	*Acacia ayersiana*		1.6	1.5
Fabaceae	*Acacia elachantha*		1.8	0.01

Appendix VI – Quadrat data

Fabaceae	*Acacia inaequilatera*		1.2	0.001
Fabaceae	*Acacia marramamba*		1.4	0.001
Fabaceae	*Acacia sibirica*		1.4	0.5
Fabaceae	*Acacia tenuissima*		1.4	1
Fabaceae	*Acacia tetragonophylla*		0.7	0.001
Fabaceae	*Indigofera monophylla*		0.4	0.5
Fabaceae	*Senna artemisioides* subsp. *oligophylla x helmsii*		0.2	0.001
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		1.4	0.01
Fabaceae	*Senna glutinosa* subsp. *pruinosa*		0.5	0.001
Goodeniaceae	*Goodenia triodiophila*		0.3	0.001
Gyrostemonaceae	*Codonocarpus cotinifolius*		0.5	0.001
Myrtaceae	*Corymbia deserticola* subsp. *deserticola*		3	0.05
Poaceae	*Triodia vanleeuwenii*		0.3	2
Proteaceae	*Hakea chordophylla*		3	0.5
Santalaceae	*Santalum lanceolatum*		0.6	0.001
Solanaceae	*Solanum centrale*		0.1	0.001
Solanaceae	*Solanum lasiophyllum*		0.3	0.001