

New Murchison Gold Ltd Garden Gully Project – Targeted Flora Survey

Prepared For: New Murchison Gold Limited
Project Name: Targeted Flora Survey
Job Number: 2025/043
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Attachment 1: Conservation Ratings, BC Act and EPBC Act
Attachment 2: Map showing GPS tracklog of the survey area

1. Introduction

Botanica Consulting Pty Ltd (Botanica) was commissioned by New Murchison Gold Limited (NMG) to undertake a targeted search for the conservation significant flora *Calytrix verruculosa* (P3) at the Garden Gully Project (referred to as the ‘target survey area’) to satisfy condition 9 of the Clearing Permit CPS 10902/1. Condition 9a stipulated that a targeted flora survey was to be conducted to search for the presence of the priority flora species *Calytrix verruculosa* (P3). The target survey area is located approximately 649 km northeast of Perth and 20 km north of Meekatharra, Western Australia. The targeted survey covers a total area of approximately 393 ha (Figure 1).

The targeted survey was conducted on the 22nd of April 2025 by two Botanica staff members: Jim Williams (Senior Botanist) and Amy Johnston (Graduate Environmental Consultant). Jim Williams has over 30 years’ experience conducting flora and fauna surveys in Western Australia, making him a suitably qualified and experienced Botanist to conduct the survey. The survey area was traversed on foot and four-wheel drive using a handheld GPS to record the locations of tracks traversed and locations of any conservation significant flora species (recorded in GDA 94 MGA Z51 format). The GPS track logs are shown in Attachment 2.

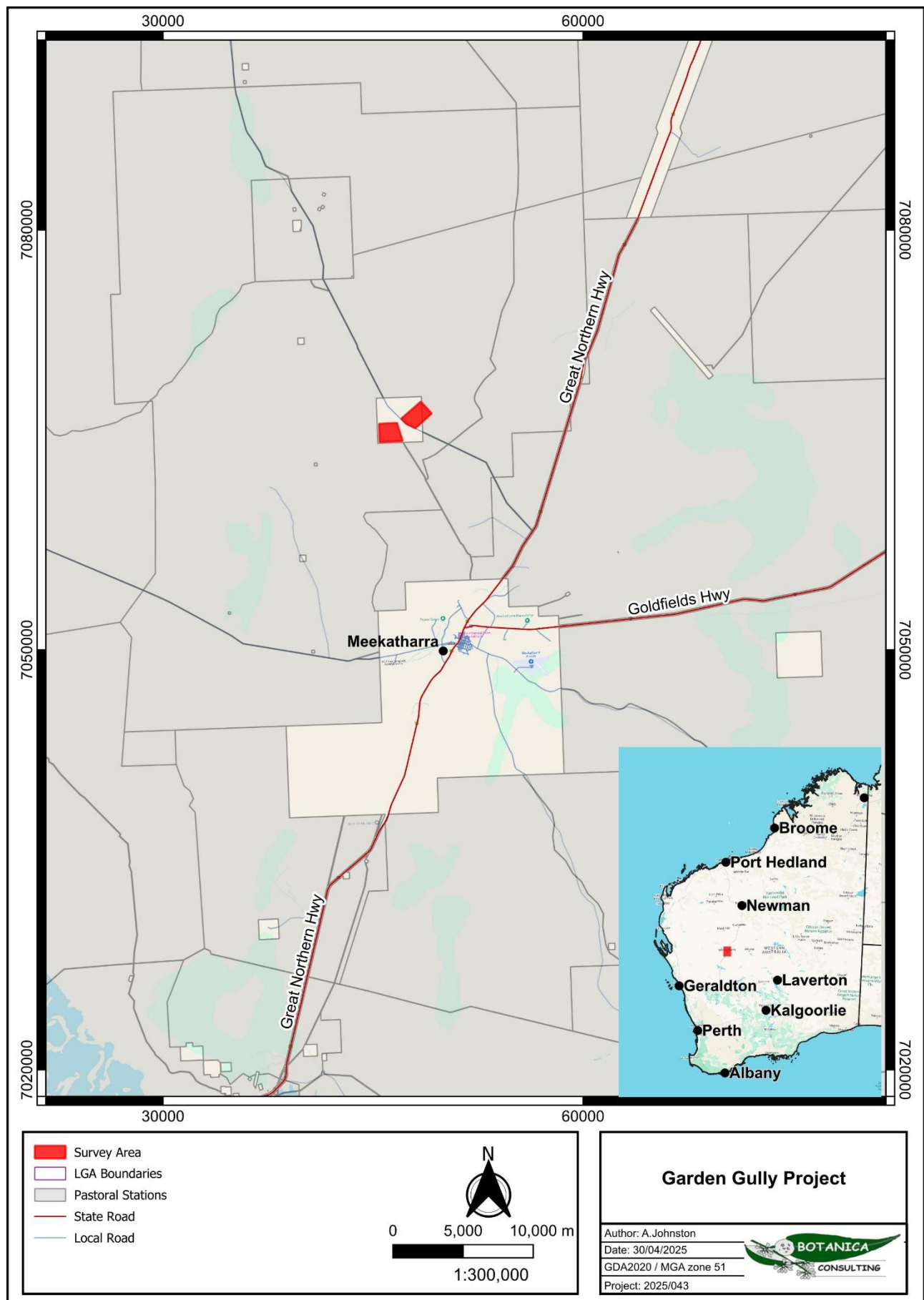


Figure 1: Garden Gully Project target survey area

2. Desktop Review

2.1. Conservation Significant Flora

Assessment of the DBCA's Threatened and Priority Flora database records (Ref: 62-0824FL) (DBCA, 2024a) and previous relevant literature identified 15 Priority flora as occurring within a 40 km radius of the survey area. Botanica observed the Priority 4 flora *Grevillea inconspicua* in the survey area during a survey in June 2024. No other Priority Flora have been recorded over the survey area (Table 2-1, Figure 2). The Priority 3 species *Calytrix verruculosa* was recorded twice in 1986, located approximately 240-280 m south of the survey area M51/889 (Figure 3).

Table 2-1: Priority Flora within 40 km of the target survey area

Taxon	Conservation Code	Habitat Description (WA Herbarium, 1998-)
<i>Acacia speckii</i>	P4	Rocky soils over granite, basalt or dolerite. Rocky hills or rises.
<i>Calytrix verruculosa</i>	P3	Sandy clay.
<i>Drummondita miniata</i>	P3	Laterite. Breakaways.
<i>Eremophila fasciata</i>	P3	Stony hills.
<i>Eremophila retropila</i>	P1	Gravelly loam. Stony flats.
<i>Euploca mitchellii</i>	P1	Rocky hills.
<i>Goodenia berringbinensis</i>	P4	Red sandy loam. Along watercourses.
<i>Grevillea inconspicua</i>	P4	Along drainage lines on rocky outcrops, creek lines.
<i>Hemigenia virescens</i>	P3	Yellow-red sandy clay.
<i>Homalocalyx echinulatus</i>	P3	Breakaways, sandstone hills.
<i>Indigofera rotula</i>	P3	Red sandy loam.
<i>Menkea draboides</i>	P3	Red sand or clay, granite.
<i>Lepidium xyloides</i>	P1	Gravelly loam, clayey sand.
<i>Ptilotus lazaridis</i>	P3	Clay loam. Floodplains.
<i>Ptilotus luteolus</i>	P3	Hillslopes.

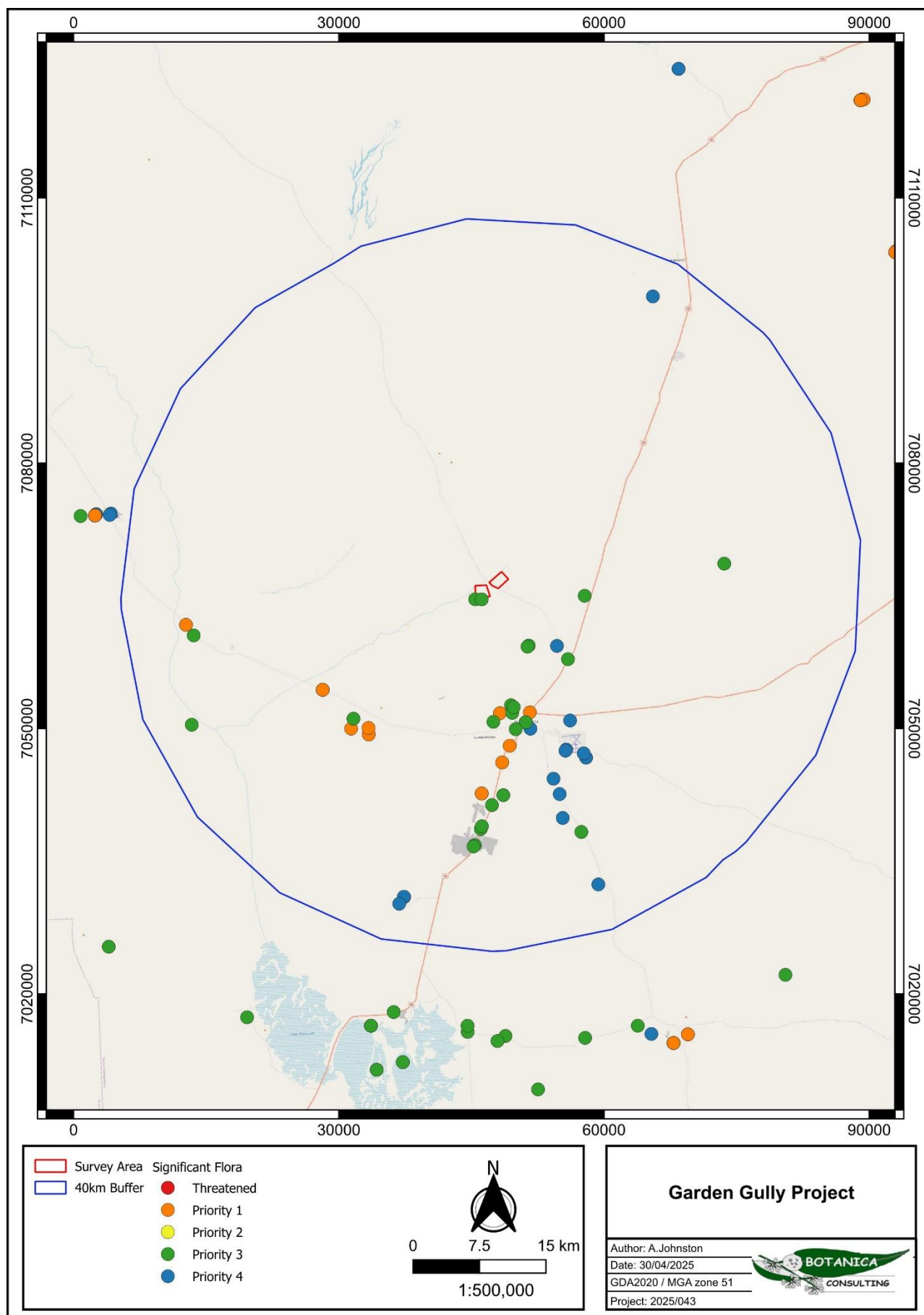


Figure 2: Locations of conservation significant flora within 40 km of the survey area

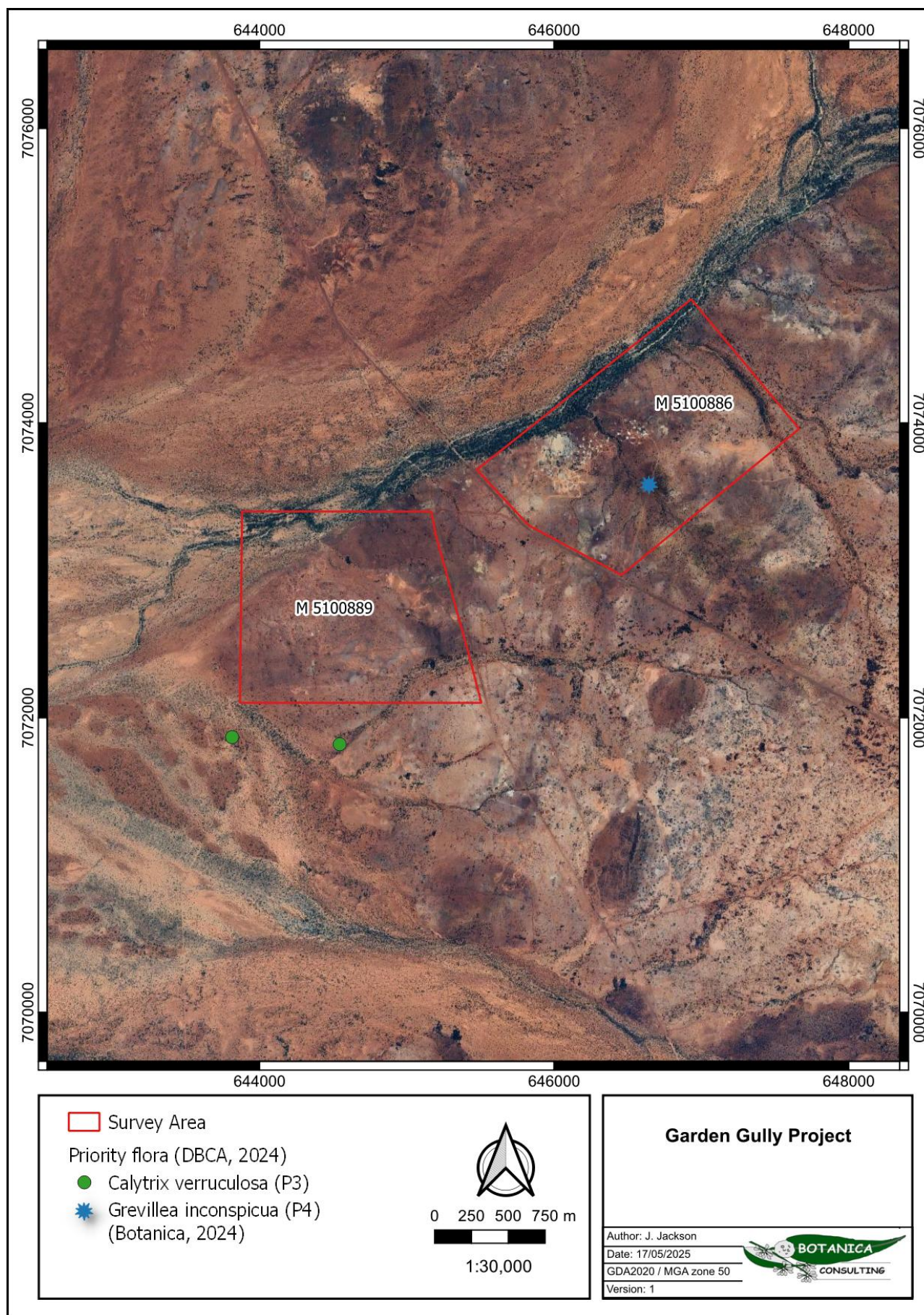


Figure 3: Previously recorded significant flora within and adjacent to the survey area

3. Background

3.1. *Calytrix verruculosa* (Priority Three)

Calytrix verruculosa is a shrub growing approximately 0.4-0.75m high (WA Herbarium, 1998-). *Calytrix verruculosa* has pink or white flowers which bloom in August to October and minutely rough branchlets (ALA, 2025). *C. verruculosa* is found in the Murchison bioregion and the Meekatharra district on mulga hardpan plains dominated by *Acacia aneura* (ALA, 2025). The species is listed as 'Priority Three' by the Department of Biodiversity, Conservation and Attractions (DBCA), with criteria outlined in Attachment 1.

4. Methods

4.1. Desktop assessment

A database search request for significant flora (ref: 62-0824FL) (DBCA, 2024a) was submitted to DBCA for records within the survey area, with a 40 km buffer applied.

4.2. Flora and Vegetation Field assessment

The targeted flora survey was conducted in accordance with the requirements of a targeted survey as defined in *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment – December 2016* (EPA, 2016a). The objectives of the assessment were to:

- Gather background information on flora of significance in the local area (literature review, database and map-based searches);
- Based on results of the desktop assessment, identify vegetation types within the survey area that have the potential to contain flora of conservation significance;
- Conduct a field survey to identify flora of conservation significance within the survey area; and
- Provide GPS records and spatial map showing the distribution of flora of conservation significance within the survey area.

Botanica conducted a targeted flora survey on the 21st and 22nd of April 2025. This was conducted by Jim Williams (Director/Senior Botanist) and Amy Johnston (Graduate Environmental Consultant). The area was traversed on foot and by 4WD. A handheld GPS unit was used to record the coordinates of significant flora observed. Unknown specimens collected during the survey were identified with the aid of samples housed at the Botanica Herbarium and Western Australian Herbarium.

4.3. Scientific licenses

Table 4-1: Scientific Licenses of Botanica Staff coordinating the survey

Licensed Staff	Permit Number	Date of Expiry
Jim Williams	FB62000457 – Flora Taking (Biological Assessment) Licence	04/08/2025
Amy Johnston	FB62000764 – Flora Taking (Biological Assessment) Licence	08/01/2026

4.4. Survey limitations and constraints

It is important to note that flora surveys will entail limitations notwithstanding careful planning and design. Potential limitations are listed in Table 4-2.

The conclusions presented in this report are based upon field data and environmental assessments and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of the field assessments. Also, it should be recognised that site conditions can change with time. Information not available at the time of this assessment which may subsequently become available may alter the conclusions presented.

Table 4-2: Limitations and constraints associated with the targeted flora survey

Variable	Potential Impact on Survey	Details
Access problems	Not a constraint	The survey was conducted via 4WD and on foot. The survey area was accessible by numerous access tracks.
Competency/ Experience	Not a constraint	The Botanica personnel that conducted the survey were regarded as suitably qualified and experienced. Coordinating Staff: Jim Williams (Director and Senior Botanist) with over 20 years experience conducting flora surveys in the area. Data Interpretation: Amy Johnston (Environmental Consultant) and Jen Jackson (Senior botanist)
Timing of survey, weather & season	Not a constraint	Fieldwork was undertaken within the EPA's recommended primary survey time period for the Eremaean Province (i.e., 6-8 weeks following the wet season from March to June).
Area disturbance	Not a constraint	The majority of native vegetation survey area was in good condition.
Survey Effort/ Extent	Not a constraint	Survey intensity was appropriate for the size/significance of the area with a targeted survey completed to identify conservation significant flora.
Availability of contextual information at a regional and local scale	Not a constraint	BoM, DWER, DPIRD, DBCA and DCCEEW databases were reviewed to obtain appropriate regional desktop information on the biophysical environment of the local region. Botanica has conducted numerous surveys within the Murchison bioregion and was also able to obtain information about the area from previous research conducted within the area. Results of previous assessments in the local area were reviewed to provide context on the local environment.
Completeness	Not a constraint	In the opinion of Botanica, the survey area was covered sufficiently in order to identify conservation significant flora. All observed flora individuals were able to be identified to species level.

5. Results

5.1. Flora

No *Calytrix verruculosa* or any other Priority Flora taxa were identified within the target survey area. The GPS tracklog is provided in Attachment 2.

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Quality Assurance

An internal quality review process has been implemented to each project task undertaken by BC. Each document and its contents are carefully reviewed by core members of the Consultancy team and signed off at Director Level prior to issue to the client. Draft documents are submitted to the client for comment and acceptance prior to final production.

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Attachment 1: Conservation Ratings, BC Act and EPBC Act

Definitions of Conservation Significant Species

Code	Category
State categories of Threatened and Priority species	
Threatened Species (T) 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).	
CR	Critically Endangered 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 2, Division 1 of the <i>Biodiversity Conservation (Listing of Native species) (Fauna) Order 2024</i> for critically endangered fauna or Schedule 1 Division 1 of the <i>Biodiversity Conservation (Listing of Native Species) (Flora) Order 2024</i> for critically endangered flora.
EN	Endangered 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, Division 2 of the <i>Biodiversity Conservation (Listing of Native species) (Fauna) Order 2024</i> for endangered fauna or Schedule 1 Division 2 of the <i>Biodiversity Conservation (Listing of Native Species) (Flora) Order 2024</i> for endangered flora.
VU	Vulnerable 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 2, Division 3 of the <i>Biodiversity Conservation (Listing of Native species) (Fauna) Order 2024</i> for vulnerable fauna or Schedule 1 Division 3 of the <i>Biodiversity Conservation (Listing of Native Species) (Flora) Order 2024</i> for vulnerable flora.
Extinct species Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild.	
EX	Extinct Species where “there is no reasonable doubt that the last member of the species has died”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act). Published as presumed extinct under Schedule 3 of the <i>Biodiversity Conservation (Listing of Native species) (Fauna) Order 2024</i> for extinct fauna or Schedule 2 of the <i>Biodiversity Conservation (Listing of Native Species) (Flora) Order 2024</i> for extinct flora.
EW	Extinct in the Wild Species that “is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act). Currently there are no Threatened fauna or Threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.
Specially protected species Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection. Species that are listed as Threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.	
IA	International Agreement/ Migratory Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Code	Category
	Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the <i>Convention on the Conservation of Migratory Species of Wild Animals</i> (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species. Published as migratory birds protected under an international agreement under Schedule 1 Division 2 of the <i>Biodiversity Conservation (Listing of Native species) (Fauna) Order 2024</i> .
CD	Species of special conservation interest Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as Threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act). Published as conservation dependent fauna under Schedule 1 Division 1 of the <i>Biodiversity Conservation (Listing of Native species) (Fauna) Order 2024</i> .
OS	Other specially protected species Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act). Published as other specially protected fauna under Schedule 1 Division 3 of the <i>Biodiversity Conservation (Listing of Native species) (Fauna) Order 2024</i> .
Priority species Possibly Threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of 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.	
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.
Commonwealth categories of Threatened species	

Code	Category
EX	Extinct Taxa where there is no reasonable doubt that the last member of the species has died.
EW	Extinct in the Wild Taxa where it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
CR	Critically Endangered Taxa that are facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
EN	Endangered Taxa which are not critically endangered and is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
VU	Vulnerable Taxa which are not critically endangered or endangered and is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
CD	Conservation Dependent Taxa which are the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered; or (b) the following subparagraphs are satisfied: (i) the species is a species of fish; (ii) the species is the focus of a plan of management that provides for actions necessary to stop the decline of, and support the recovery of, the species so that its chances of long-term survival in nature are maximised; (iii) the plan of management is in force under a law of the Commonwealth or of a State or Territory; (iv) cessation of the plan of management would adversely affect the conservation status of the species.

Definitions of conservation significant communities

Category Code	Category
State categories of Threatened Ecological Communities (TEC)	
PD	Presumed Totally Destroyed
	An ecological community will be listed as Presumed Totally Destroyed if there are no recent records of the community being extant and either of the following applies:
	- records within the last 50 years have not been confirmed despite thorough searches or known likely habitats or; - all occurrences recorded within the last 50 years have since been destroyed.
CR	Critically Endangered
	An ecological community will be listed as Critically Endangered when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future, meeting any one of the following criteria:
	The estimated geographic range and distribution has been reduced by at least 90% and is either continuing to decline with total destruction imminent, or is unlikely to be substantially rehabilitated in the immediate future due to modification;
	The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area;
EN	The ecological community is highly modified with potential of being rehabilitated in the immediate future.
	Endangered
	An ecological community will be listed as Endangered when it has been adequately surveyed and is not Critically Endangered but is facing a very high risk of total destruction in the near future. The ecological community must meet any one of the following criteria:

Category Code	Category
	The estimated geographic range and distribution has been reduced by at least 70% and is either continuing to decline with total destruction imminent in the short-term future, or is unlikely to be substantially rehabilitated in the short-term future due to modification; The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area; The ecological community is highly modified with potential of being rehabilitated in the short-term future.
VU	Vulnerable An ecological community will be listed as Vulnerable when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing high risk of total destruction in the medium to long term future. The ecological community must meet any one of the following criteria: The ecological community exists largely as modified occurrences that are likely to be able to be substantially restored or rehabilitated; The ecological community may already be modified and would be vulnerable to threatening process, and restricted in range or distribution; The ecological community may be widespread but has potential to move to a higher threat category due to existing or impending threatening processes.
Commonwealth categories of Threatened Ecological Communities (TEC)	
CE	Critically Endangered If, at that time, an ecological community is facing an extremely high risk of extinction in the wild in the immediate future (indicative timeframe being the next 10 years).
EN	Endangered If, at that time, an ecological community is not critically endangered but is facing a very high risk of extinction in the wild in the near future (indicative timeframe being the next 20 years).
VU	Vulnerable If, at that time, an ecological community is not critically endangered or endangered but is facing a high risk of extinction in the wild in the medium–term future (indicative timeframe being the next 50 years).
Priority Ecological Communities	
P1	Poorly-known ecological communities Ecological communities with apparently few, small occurrences, all or most not actively managed for conservation (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) and for which current threats exist.
P2	Poorly-known ecological communities Communities that are known from few small occurrences, all or most of which are actively managed for conservation (e.g. within national parks, conservation parks, nature reserves, State forest, un-allocated Crown land, water reserves, etc.) and not under imminent threat of destruction or degradation.
P3	Poorly known ecological communities Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or: Communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or; Communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system but are under threat of modification across much of their range from processes such as grazing and inappropriate fire regimes.
P4	Ecological communities that are adequately known, rare but not threatened or meet criteria for near threatened, or that have been recently removed from the threatened list. These communities require regular monitoring.
P5	Conservation Dependent ecological communities Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Attachment 2: Map showing GPS tracklog of the survey area

