

Chris McQuade
GNT Resources
11 September 2021



MEMO REPORT

Dalgaranga targeted Threatened and Priority flora and fauna habitat survey, August 2021

Dear Chris,

As requested, following is a brief report on the targeted Threatened and Priority flora and fauna habitat survey undertaken at the Dalgaranga mine site on 9 and 10 August 2021.

GNT Resources is proposing to expand the footprint of the Dalgaranga operations to cater for an additional waste dump and extension of the tailings storage facility (TSF). Figure 1 shows the areas proposed to be disturbed for the expansion.

Surveys of the area have previously been undertaken Native Vegetation Solutions in 2016 and 2020. Ecotec (WA) Pty Ltd (Ecotec) was engaged to undertake a targeted survey of the area for Threatened and Priority flora and habitat suitable for conservation significant fauna.

Methodology

The targeted survey was undertaken by Ecotec biologists Jeremy Shepherdson and Lorna McDonald. Both are experienced consultants with extensive experience throughout inland Western Australia and a sound knowledge of flora and fauna of the region.

Prior to the survey a review of previous survey reports and database searches (NatureMap and the Protected Matters Search Tool, Appendix 1) was undertaken. The field survey was carried out as a series of relevés in each of the vegetation types identified from aerial imagery. A list of flora species was recorded at each survey point (included in Appendix 2) with post-fieldwork identification undertaken by botanists Kylie Wilkinson (Ecotec) and Jenny Borger (JB Botanical Consulting).

Results

The survey recorded 93 taxa of vascular flora from 27 families (Appendix 2). No Priority or Threatened flora species were located during this, or any previous surveys.

Previous surveys and database searches have returned 28 Priority-listed species as potentially occurring within the project area. While suitable habitat for a number of the conservation significant flora may exist within the project area, the likelihood of their presence is considered low due mainly to the long-term presence of grazing stock in the area, goats in particular. Goats were abundant throughout the area during the survey and their impact is apparent in the lack of understorey and ground cover species in each of the vegetation types. The area is also extensively disturbed by mineral

exploration and other historic pastoral activity. Table 1 lists the species returned from the database searches and the likelihood of presence within the surveyed area.

Table 1: Priority listed species returned from database searches and likelihood of presence.

Taxon	Conservation Status	Habitat (Florabase)	Likelihood of occurrence in the survey area
<i>Acacia speckii</i>	P4	Rocky soils over granite, basalt or dolerite. Rocky hills or rises.	Unlikely. No suitable habitat.
<i>Acacia subsessilis</i>	P3	Red sand or stony gravel over ironstone. Rocky hills.	Unlikely. No suitable habitat.
<i>Alyxia tetanifolia</i>	P3	Sandy clay, loam, concretionary gravel. Drainage lines, near lakes.	Unlikely. No suitable habitat.
<i>Amanita lesueurii</i>	P2	Unknown	Unlikely. Most records occur closer to the coast.
<i>Angianthus uniflorus</i>	P1	Margin of calcrete rise near gypseous salt lake.	Unlikely. No suitable habitat.
<i>Cyanicula fragrans</i>	P3	Red loam. Flat granite outcrops.	Unlikely. No suitable habitat.
<i>Dicrastylis linearifolia</i>	P3	Sandplain	Unlikely. No suitable habitat.
<i>Dicrastylis</i> sp. Cue (A.A. Mitchell 764)	P1	Drainage area, near granite.	Unlikely. No suitable habitat.
<i>Eremophila simulans</i> subsp. <i>megacalyx</i>	P3	Unknown	Possible.
<i>Euryomyrtus recurva</i>	P3	Yellow/red sand, brown/yellow sandy clay. Gravel pits, catchment slopes.	Unlikely. No suitable habitat.
<i>Goodenia berringbinensis</i>	P4	Red sandy loam. Along watercourses.	Unlikely. No suitable habitat.
<i>Goodenia neogoodenia</i>	P4	Red loam or clay. Near water.	Unlikely. No suitable habitat.
<i>Hibiscus krichauffianus</i>	P3	Red sandy soils.	Unlikely. No suitable habitat.
<i>Jacksonia lanicarpa</i>	P1	Red sandy soils.	Unlikely. No suitable habitat.
<i>Labichea obrullata</i>	P1	Unknown	Unlikely. No prior records in the vicinity.
<i>Micromyrtus trudgenii</i>	P3	Red-brown loamy clay, yellow-brown soils, gravel, siltstone, quartz, basalt, banded ironstone, dolerite. Tops and slopes of hills and ridges.	Unlikely. No suitable habitat.
<i>Millotia depauperata</i>	P1	Sandy loam. Granite outcrops.	Unlikely.

			No suitable habitat.
<i>Petrophile pauciflora</i>	P3	Decaying and dissected granite breakaways.	Unlikely. No suitable habitat.
<i>Petrophile vana</i>	P1	Shallow, white, gritty clay-soil pockets, laterite. Breakaways.	Unlikely. No suitable habitat.
<i>Polianthion collinum</i>	P3	Red clay loam between blocks of banded ironstone. Low hills and slopes.	Unlikely. No suitable habitat.
<i>Psammomoya grandiflora</i>	P2	Red loam, sand, jasperlite. Sandplains, rocky country.	Unlikely. No suitable habitat.
<i>Psammomoya implexa</i>	P3	Stony rises.	Unlikely. No suitable habitat.
<i>Ptilotus beardii</i>	P3	Clayey soils. Saline flats, low breakaways.	Unlikely. No suitable habitat.
<i>Ptilotus luteolus</i>	P3	Unknown.	Unlikely. No prior records in the vicinity.
<i>Rhodanthe collina</i>	P3	Loam. Rocky hills.	Unlikely. No suitable habitat.
<i>Triglochin protuberans</i>	P3	Red loam, grey mud over clay. Winter-wet sites, claypans, near salt lakes, margins of pools.	Unlikely. No suitable habitat.
<i>Verticordia jamiesonii</i>	P3	Sandy clay soils. Lateritic breakaways.	Unlikely. No suitable habitat.
<i>Wurmbea murchisoniana</i>	P4	Clay, sandy clay, loam. Seasonally inundated clay hollows, rock pools.	Unlikely. No suitable habitat.

Figure 2 shows the location of the survey points. Appendix 3 provides the species list and data sheets for each survey point.

Six broad vegetation types were identified across the surveyed area. Vegetation in the area is generally dominated by a variety of *Acacia* species with *Eremophila* understorey, and is fairly typical of the Murchison region. The impact of long-term grazing, particularly by goats, is evident with minimal understorey and herbaceous species present throughout the area. It is though likely that vegetation types 2 and 6 were initially the same but have been altered by grazing and exploration disturbance over time. Vegetation condition is generally Good, according to the Kierghery vegetation condition scale (1994) (Table 1).

Table 2: Vegetation Condition Scale (Keighery, 1994).

Condition Scale	Description
Pristine (1)	Pristine or nearly so, no obvious signs of disturbance.
Excellent (2)	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
Very Good (3)	Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
Good (4)	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
Degraded (5)	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
Completely Degraded (6)	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as "parkland cleared" with the flora comprising weed or crop species with isolated native trees or shrubs.

As described by the vegetation condition scale, "Good" recognises significant alteration of the vegetation structure, in this case primarily as a result of grazing. Figure 3 shows the vegetation types within the surveyed area.

Figure 4 provides the track log of the survey.

Acacia Woodland/Shrubland is the dominant fauna habitat present within the surveyed area, with an area of rocky outcrop present on the western side (Vegetation Type 4). Both of these habitat types are widespread and common in the surrounding region. The Western spiny-tailed skink (*Egernia stokesii* subsp. *badia*, Vulnerable) has previously been recorded as a possible inhabitant of the area, however there is little fallen timber and few large old trees in the surveyed area. The potential for the species to be present is considered very low. Rocky outcrops may provide habitat for the gilled slender blue-tongue (*Cyclodomorphus branchialis*, Vulnerable), however the small extent of this habitat within the surveyed area is considered unlikely to support a population of the species. The malleefowl (*Leipoa ocellata*, Vulnerable) is considered unlikely to be present in the vicinity of the surveyed area due to the proximity to the active mine site, intensive grazing and extensive prior disturbance.

The peregrine falcon and a number of Migratory bird species are potential visitors to the area, however no habitat necessary for the survival of any of these species is present.

Following completion of the targeted survey and assessment of the area, the proposed disturbance is not considered likely to impact any flora or fauna species of conservation significance.

Jeremy Shephardson



Managing Director / Principal Environmental Consultant

Ecotec (WA) Pty Ltd

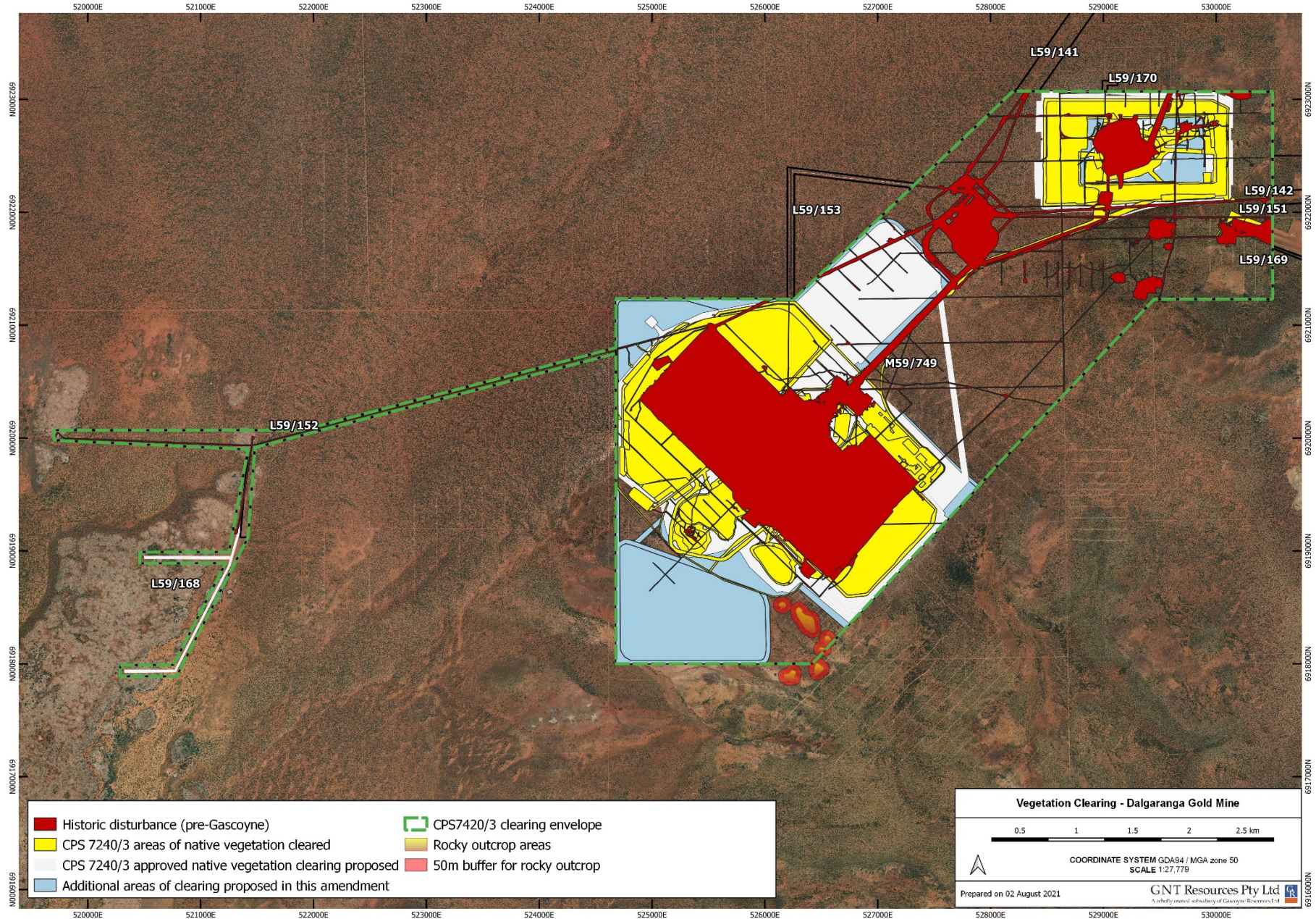


Figure 1: Proposed additional disturbance areas.



Figure 2: Survey points.

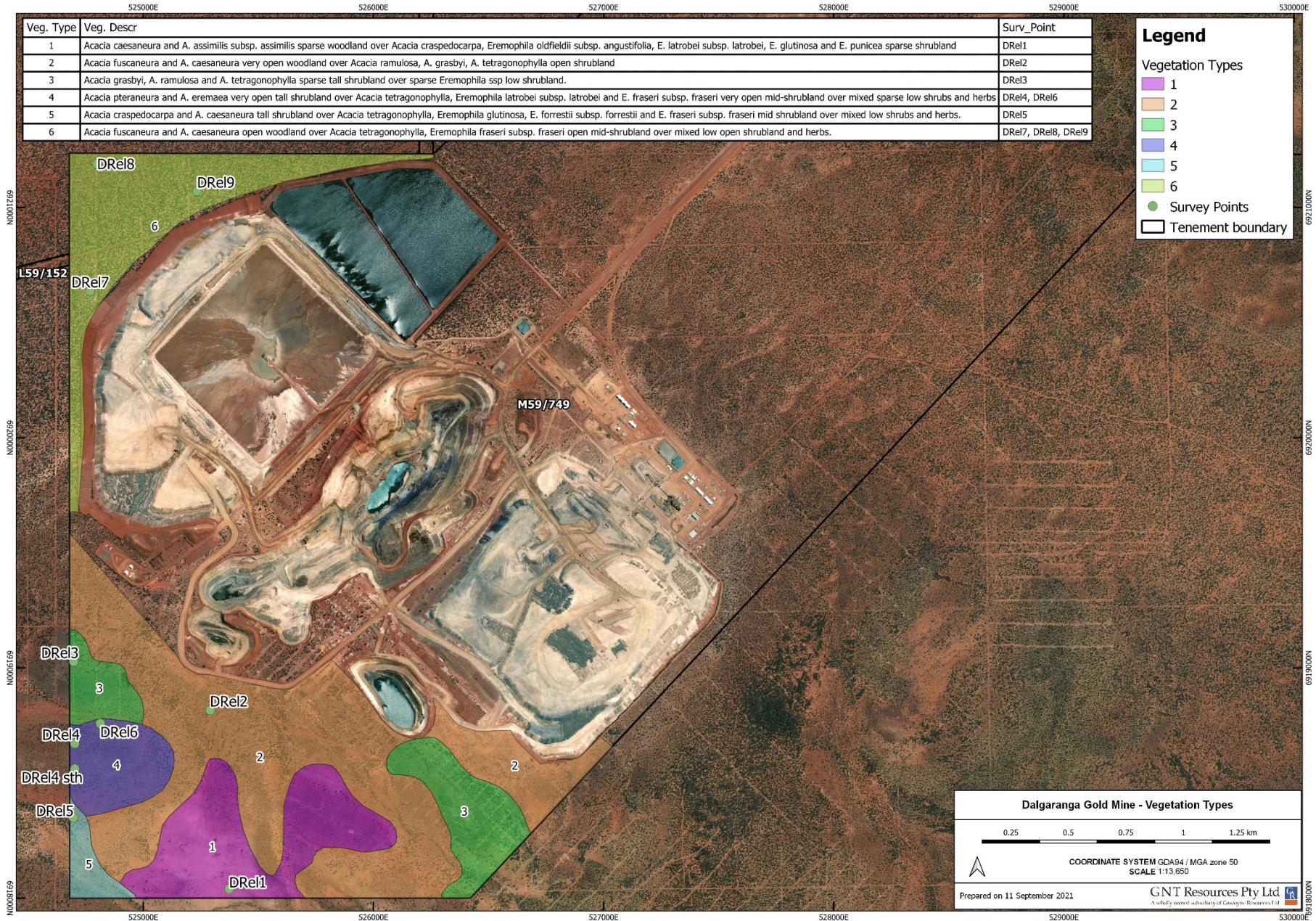


Figure 3: Broad vegetation types of the surveyed area.

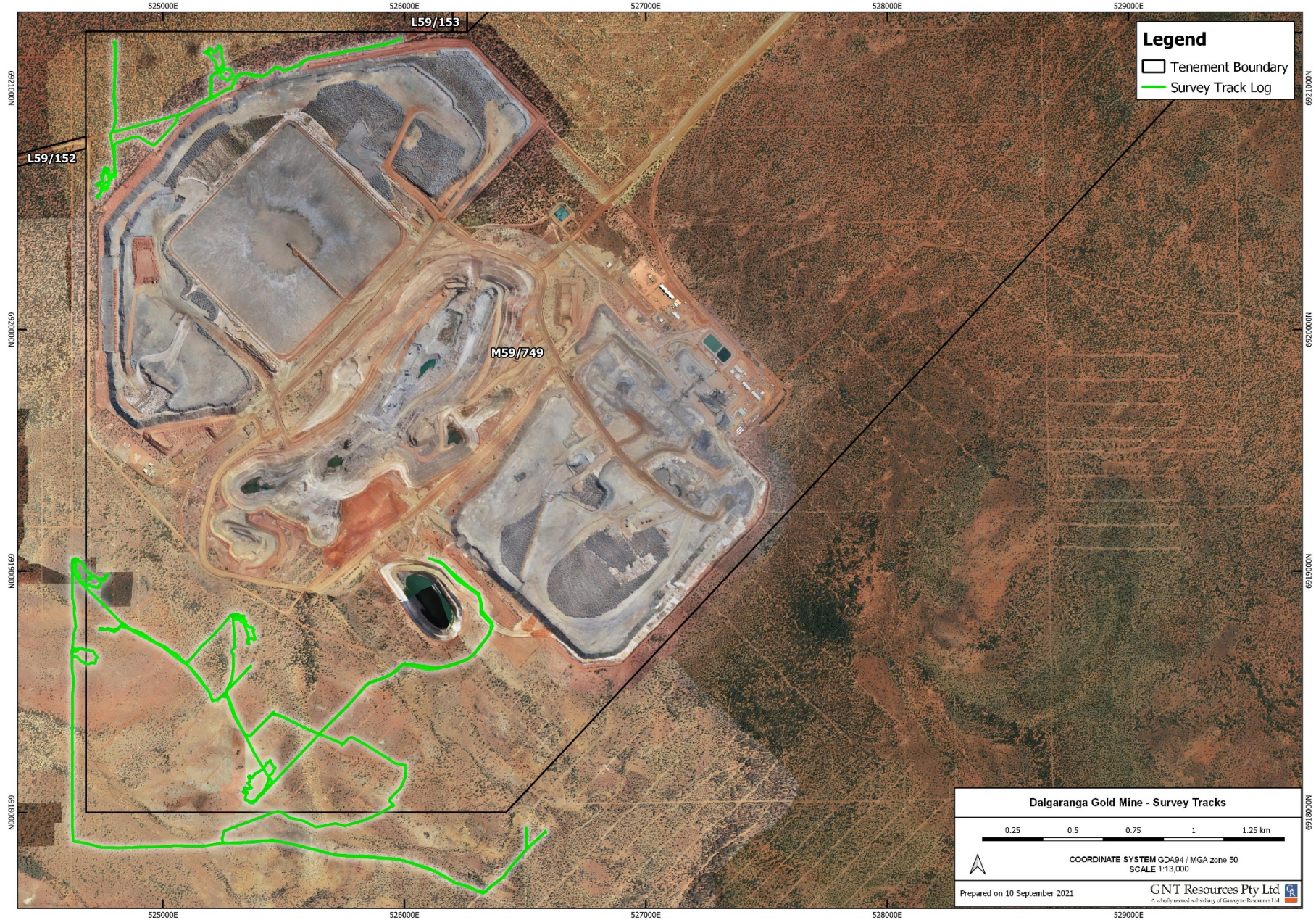


Figure 4: Survey track log.

Appendix 1

Database search results

NatureMap Species Report

Created By Guest user on 02/08/2021

Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 117° 15' 00" E, 27° 51' 00" S
Buffer 20km
Group By Kingdom

Kingdom	Species	Records
Animalia	62	204
Plantae	53	62
TOTAL	115	266

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
Animalia				
1.	24559 <i>Acanthagenys rufogularis</i> (Spiny-cheeked Honeyeater)			
2.	24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
3.	24264 <i>Acanthiza robustirostris</i> (Slaty-backed Thornbill)			
4.	24265 <i>Acanthiza uropygialis</i> (Chestnut-rumped Thornbill)			
5.	25544 <i>Aegotheles cristatus</i> (Australian Owlet-nightjar)			
6.	25528 <i>Aphelocephala leucopsis</i> (Southern Whiteface)			
7.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
8.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
9.	24355 <i>Artamus minor</i> (Little Woodswallow)			
10.	24356 <i>Artamus personatus</i> (Masked Woodswallow)			
11.	<i>Barnardius zonarius</i>			
12.	25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
13.	24361 <i>Coracina maxima</i> (Ground Cuckoo-shrike)			
14.	25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
15.	24416 <i>Corvus bennetti</i> (Little Crow)			
16.	25593 <i>Corvus orru</i> (Torresian Crow)			
17.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
18.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
19.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
20.	24886 <i>Ctenophorus reticulatus</i> (Western Netted Dragon)			
21.	25075 <i>Ctenotus severus</i>			
22.	25107 <i>Egernia stokesii</i> subsp. <i>badia</i> (Western Spiny-tailed Skink, Gidgee Skink)		T	
23.	<i>Eolophus roseicapillus</i>			
24.	24570 <i>Epthianura tricolor</i> (Crimson Chat)			
25.	25621 <i>Falco berigora</i> (Brown Falcon)			
26.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
27.	25624 <i>Falco peregrinus</i> (Peregrine Falcon)		S	
28.	25727 <i>Fulica atra</i> (Eurasian Coot)			
29.	24959 <i>Gehyra variegata</i>			
30.	24401 <i>Geopelia cuneata</i> (Diamond Dove)			
31.	25530 <i>Gerygone fusca</i> (Western Gerygone)			
32.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
33.	47965 <i>Hieraaetus morphnoides</i> (Little Eagle)			
34.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
35.	33917 <i>Idiosoma nigrum</i> (Shield-backed Trapdoor Spider)		T	
36.	25157 <i>Lerista nichollsi</i>			
37.	25651 <i>Malurus lamberti</i> (Variegated Fairy-wren)			
38.	25652 <i>Malurus leucopterus</i> (White-winged Fairy-wren)			
39.	25654 <i>Malurus splendens</i> (Splendid Fairy-wren)			
40.	24583 <i>Manorina flavigula</i> (Yellow-throated Miner)			
41.	47997 <i>Melanodryas cucullata</i> (Hooded Robin)			
42.	24736 <i>Melopsittacus undulatus</i> (Budgerigar)			
43.	25427 <i>Neobatrachus sutor</i> (Shoemaker Frog)			
44.	<i>Neopsephotus bourkii</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
45.	24742 <i>Nymphicus hollandicus</i> (Cockatiel)			
46.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
47.	24976 <i>Oedura marmorata</i> (Marbled Velvet Gecko)			
48.	24618 <i>Oreoica gutturalis</i> (Crested Bellbird)			
49.	25680 <i>Pachycephala rufiventris</i> (Rufous Whistler)			
50.	48061 <i>Petrochelidon nigricans</i> (Tree Martin)			
51.	24659 <i>Petroica goodenovii</i> (Red-capped Robin)			
52.	24409 <i>Phaps chalcoptera</i> (Common Bronzewing)			
53.	24681 <i>Poliiocephalus poliocephalus</i> (Hoary-headed Grebe)			
54.	25706 <i>Pomatostomus temporalis</i> (Grey-crowned Babbler)			
55.	24278 <i>Pyrrholaemus brunneus</i> (Redthroat)			
56.	25614 <i>Rhipidura leucophrys</i> (Willie Wagtail)			
57.	25266 <i>Simoselaps bertholdi</i> (Jan's Banded Snake)			
58.	30948 <i>Smicromis brevirostris</i> (Weebill)			
59.	24331 <i>Tadorna tadornoides</i> (Australian Shelduck, Mountain Duck)			
60.	30870 <i>Taeniopygia guttata</i> (Zebra Finch)			
61.	42351 <i>Todiramphus pyrrhopygius</i> (Red-backed Kingfisher)			
62.	24386 <i>Vanellus tricolor</i> (Banded Lapwing)			

Plantae

63.	4889 <i>Abutilon cryptopetalum</i>			
64.	37260 <i>Acacia aptaneura</i>			
65.	36417 <i>Acacia caesaneura</i>			
66.	3452 <i>Acacia murrayana</i> (Sandplain Wattle)			
67.	31071 <i>Acacia umbraculiformis</i>			
68.	19465 <i>Aluta aspera</i> subsp. <i>hesperia</i>			
69.	40910 <i>Androcalva luteiflora</i> (Yellow-flowered Rulingia)			
70.	2451 <i>Atriplex bunburyana</i> (Silver Saltbush)			
71.	3167 <i>Bursaria occidentalis</i>			
72.	2778 <i>Codonocarpus cotinifolius</i> (Native Poplar, Kundurangu)			
73.	4566 <i>Comesperma volubile</i> (Love Creeper)			
74.	15962 <i>Cyanicula fragrans</i>		P3	
75.	4766 <i>Dodonaea inaequifolia</i>			
76.	4773 <i>Dodonaea petiolaris</i>			
77.	7189 <i>Eremophila clarkei</i> (Turpentine Bush)			
78.	29532 <i>Eremophila galeata</i>			
79.	7234 <i>Eremophila longifolia</i> (Berrigan, Tulypurpa)			
80.	15158 <i>Eremophila mackinlayi</i> subsp. <i>spathulata</i>			
81.	15003 <i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i>			
82.	17165 <i>Eremophila simulans</i> subsp. <i>megacalyx</i>		P3	
83.	13058 <i>Eucalyptus leptopoda</i> subsp. <i>elevata</i>			
84.	5779 <i>Eucalyptus striaticalyx</i> (Cue York Gum)			
85.	14548 <i>Eucalyptus victrix</i>			
86.	10977 <i>Exocarpos aphyllus</i> (Leafless Ballart)			
87.	19542 <i>Grevillea nematophylla</i> subsp. <i>supraplana</i>			
88.	15981 <i>Grevillea obliquistigma</i> subsp. <i>obliquistigma</i>			
89.	2196 <i>Hakea preissii</i> (Needle Tree, Dandjin)			
90.	17556 <i>Hakea recurva</i> subsp. <i>arida</i>			
91.	43022 <i>Hibiscus</i> sp. <i>Gardneri</i> (A.L. Payne PRP 1435)			
92.	6967 <i>Lycium australe</i> (Australian Boxthorn)			
93.	2396 <i>Lysiana casuarinae</i>			
94.	2565 <i>Maireana suaedifolia</i>			
95.	2569 <i>Maireana triptera</i> (Threewinged Bluebush)			
96.	4961 <i>Malva parviflora</i> (Marshmallow)	Y		
97.	4079 <i>Medicago polymorpha</i> (Burr Medic)	Y		
98.	19449 <i>Melaleuca stereophloia</i>			
99.	5972 <i>Melaleuca strobophylla</i>			
100.	31782 <i>Petrophile vana</i>		P1	
101.	11185 <i>Pimelea microcephala</i> subsp. <i>microcephala</i>			
102.	15822 <i>Prostanthera althoferi</i> subsp. <i>althoferi</i>			
103.	16370 <i>Psammomoya grandiflora</i>		P2	
104.	18154 <i>Psydrax latifolia</i>			
105.	18210 <i>Psydrax rigidula</i>			
106.	18155 <i>Psydrax suaveolens</i>			
107.	2717 <i>Ptilotus divaricatus</i> (Climbing Mulla Mulla)			
108.	4698 <i>Ricinocarpus muricatus</i>			
109.	2356 <i>Santalum acuminatum</i> (Quandong, Wamga)			
110.	7644 <i>Scaevola spinescens</i> (Currant Bush, Maroon)			
111.	12281 <i>Senna artemisioides</i> subsp. <i>petiolaris</i>			
112.	14577 <i>Senna</i> sp. <i>Meekatharra</i> (E. Bailey 1-26)			
113.	46824 <i>Seringia velutina</i> (Velvet firebush)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
114.	19696 <i>Thryptomene costata</i>			
115.	13041 <i>Triodia tomentosa</i>			

Conservation Codes

- T - Rare or likely to become extinct
- X - Presumed extinct
- IA - Protected under international agreement
- S - Other specially protected fauna
- 1 - Priority 1
- 2 - Priority 2
- 3 - Priority 3
- 4 - Priority 4
- 5 - Priority 5

¹ For NatureMap's purposes, species flagged as endemic are those whose records are wholly contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 04/08/21 10:10:48

[Summary](#)

[Details](#)

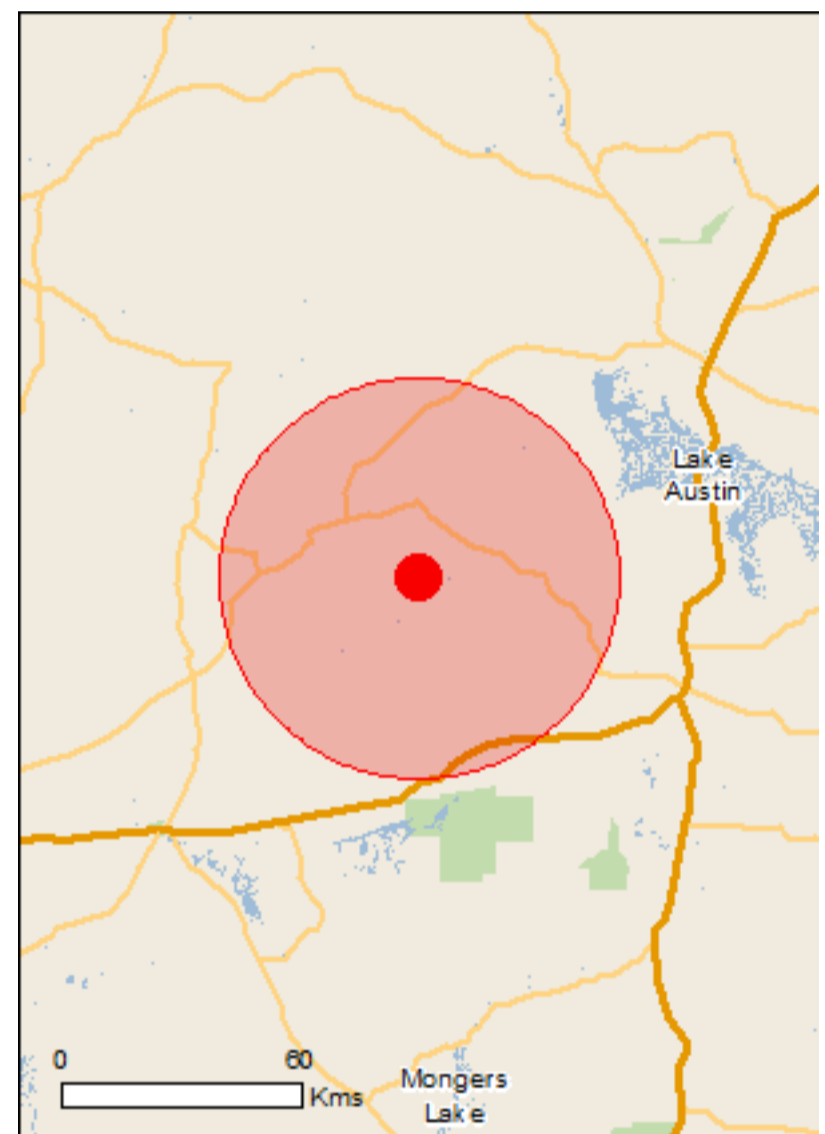
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

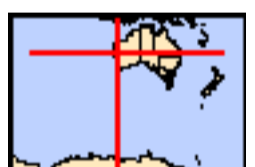
[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

Buffer: 50.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	7
Listed Migratory Species:	6

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	11
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	2
Regional Forest Agreements:	None
Invasive Species:	11
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Species [\[Resource Information \]](#)

Name	Status	Type of Presence
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Birds

Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
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Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area
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Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
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Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
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Other

Idiosoma nigrum Shield-backed Trapdoor Spider, Black Rugose Trapdoor Spider [66798]	Vulnerable	Species or species habitat known to occur within area
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Plants

Ricinocarpos brevis [82879]	Endangered	Species or species habitat may occur within area
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Reptiles

Egernia stokesii badia Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink [64483]	Endangered	Species or species habitat known to occur within area
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Listed Migratory Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
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Migratory Marine Birds

Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
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Migratory Terrestrial Species

Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
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Migratory Wetlands Species

Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within
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Name	Threatened	Type of Presence area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Dalgaranga and Noongal Pastoral Leases	WA
Lakeside Pastoral Lease	WA

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
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Birds

Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area

Mammals

Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Equus asinus Donkey, Ass [4]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area

Plants

Name	Status	Type of Presence
Carrichtera annua Ward's Weed [9511]		Species or species habitat may occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-27.85034 117.25221

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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Appendix 2


Flora species list and survey site data sheets


Dalgaranga Targeted Survey 9-10 August 2021


Flora species list


Amaranthaceae	<i>Ptilotus</i>	<i>exaltatus</i>
Amaranthaceae	<i>Ptilotus</i>	<i>holosericeus</i>
Amaranthaceae	<i>Ptilotus</i>	<i>obovatus</i>
Amaranthaceae	<i>Ptilotus</i>	? <i>schwartzii</i>
Amaranthaceae	<i>Ptilotus</i>	<i>divaricatus</i>
Amaranthaceae	<i>Ptilotus</i>	<i>schwartzii</i>
Apocynaceae	<i>Leichhardtia</i>	<i>australis</i>
Araliaceae	<i>Trachymene</i>	<i>ornata</i>
Asparagaceae	<i>Thysanotus</i>	<i>manglesianus</i>
Asteraceae	* <i>Sonchus</i>	<i>oleraceus</i>
Asteraceae	<i>Brachyscome</i>	<i>pusilla</i>
Asteraceae	<i>Calotis</i>	<i>multicaulis</i>
Asteraceae	<i>Cephalipterum</i>	<i>drummondii</i>
Asteraceae	<i>Helipterum</i>	<i>craspedioides</i>
Asteraceae	<i>Hyalosperma</i>	<i>glutinosum</i>
Asteraceae	<i>Lawrencella</i>	<i>davenportii</i>
Asteraceae	<i>Myriocephalus</i>	<i>guerinae</i>
Asteraceae	<i>Rhodanthe</i>	<i>chlorocephala</i> subsp. <i>splendida</i>
Asteraceae	<i>Rhodanthe</i>	<i>laevis</i>
Asteraceae	<i>Rhodanthe</i>	<i>maryonii</i>
Asteraceae	<i>Rhodanthe</i>	<i>stricta</i>
Asteraceae	<i>Schoenia</i>	<i>cassiniana</i>
Asteraceae	<i>Schoenia</i>	<i>filifolia</i>
Asteraceae	<i>Senecio</i>	<i>glossanthus</i>
Asteraceae	<i>Siemssenia</i>	<i>capillaris</i>
Brassicaceae	<i>Stenopetalum</i>	? <i>anfractum</i>
Brassicaceae	<i>Stenopetalum</i>	<i>filifolium</i>
Caryophyllaceae	* <i>Spergula</i>	<i>pentandra</i>
Chenopodiaceae	<i>Atriplex</i>	<i>semilunaris</i>
Chenopodiaceae	<i>Enchylaena</i>	<i>tomentosa</i>
Chenopodiaceae	<i>Maireana</i>	<i>convexa</i>
Chenopodiaceae	<i>Maireana</i>	<i>glomerifolia</i>
Chenopodiaceae	<i>Sclerolaena</i>	<i>eriacantha</i>
Chenopodiaceae	<i>Tecticornia</i>	<i>disarticulata</i>
Droseraceae	<i>Drosera</i>	?sp. Branched styles
Fabaceae	<i>Acacia</i>	<i>assimilis</i> subsp. <i>assimilis</i>
Fabaceae	<i>Acacia</i>	<i>caesaneura</i>
Fabaceae	<i>Acacia</i>	<i>craspedocarpa</i>
Fabaceae	<i>Acacia</i>	<i>eremaea</i>
Fabaceae	<i>Acacia</i>	<i>fuscaneura</i>
Fabaceae	<i>Acacia</i>	<i>grasbyi</i>
Fabaceae	<i>Acacia</i>	<i>pteraneura</i>
Fabaceae	<i>Acacia</i>	<i>ramulosa</i>
Fabaceae	<i>Acacia</i>	<i>restiacea</i>
Fabaceae	<i>Acacia</i>	<i>tetragonaphylla</i>
Fabaceae	<i>Acacia</i>	<i>acuminata</i>
Fabaceae	<i>Chorizema</i>	<i>genistoides</i>
Fabaceae	<i>Senna</i>	<i>artemisiodes</i> ssp. <i>helmsii</i>

Fabaceae	<i>Senna</i>	<i>artemisioides ssp xsturtii</i>
Fabaceae	<i>Senna</i>	<i>artemisioides ssp xsturtii</i>
Fabaceae	<i>Senna</i>	<i>charlesiana</i>
Fabaceae	<i>Senna</i>	<i>glutinosa</i> subsp. x <i>luerssennii</i>
Family	Genus	Species
Geraniaceae	<i>Erodium</i>	? <i>crinitum</i>
Goodeniaceae	<i>Goodenia</i>	<i>berardiana</i>
Goodeniaceae	<i>Goodenia</i>	<i>pusilliflora</i>
Goodeniaceae	<i>Goodenia</i>	<i>rosea</i>
Goodeniaceae	<i>Scaevola</i>	<i>spinescens</i>
Gyrostemonaceae	<i>Codonocarpus</i>	<i>cotinifolius</i>
Hemerocallidaceae	<i>Dianella</i>	<i>revoluta</i>
Lamiaceae	<i>Teucrium</i>	<i>teucriifolium</i>
Loranthaceae	? <i>Amyema</i>	<i>preissii</i>
Loranthaceae	<i>Amyema</i>	<i>gibberula</i>
Malvaceae	<i>Sida</i>	<i>calyxhymenia</i>
Malvaceae	<i>Sida</i>	sp. Golden calyces glabrous
Myrtaceae	<i>Calytrix</i>	<i>erosipetala</i>
Myrtaceae	<i>Thryptomene</i>	<i>costata</i>
Orchidaceae	? <i>Caladenia</i>	<i>hirta</i>
Orchidaceae	? <i>Caladenia</i>	sp.
Pittosporaceae	<i>Pittosporum</i>	<i>angustifolium</i>
Poaceae	<i>Austrostipa</i>	<i>elegantissima</i>
Poaceae	<i>Eriachne</i>	<i>helmsii</i>
Polygalaceae	* <i>Rumex</i>	<i>vesicarius</i>
Polygalaceae	<i>Comesperma</i>	<i>volubile</i>
Proteaceae	<i>Grevillea</i>	<i>deflexa</i>
Proteaceae	<i>Grevillea</i>	<i>stenobotrya</i>
Proteaceae	<i>Hakea</i>	<i>presissii</i>
Pteridaceae	<i>Cheilanthes</i>	<i>lasiophylla</i>
Scrophulariaceae	<i>Eremophila</i>	<i>exilifolia</i>
Scrophulariaceae	<i>Eremophila</i>	<i>forrestii ssp forrestii</i>
Scrophulariaceae	<i>Eremophila</i>	<i>fraseri ssp fraseri</i>
Scrophulariaceae	<i>Eremophila</i>	<i>georgei</i>
Scrophulariaceae	<i>Eremophila</i>	<i>georgeii</i>
Scrophulariaceae	<i>Eremophila</i>	<i>glandulifera</i>
Scrophulariaceae	<i>Eremophila</i>	<i>glutinosa</i>
Scrophulariaceae	<i>Eremophila</i>	<i>jucunda</i> subsp <i>jucunda</i>
Scrophulariaceae	<i>Eremophila</i>	<i>latrobei</i> subsp <i>latrobei</i>
Scrophulariaceae	<i>Eremophila</i>	<i>oldfieldii</i> subsp <i>angustifolia</i>
Scrophulariaceae	<i>Eremophila</i>	<i>platycalyx</i>
Scrophulariaceae	<i>Eremophila</i>	<i>punicea</i>
Solanaceae	<i>Nicotiana</i>	? <i>rosulata</i>
Solanaceae	<i>Solanum</i>	<i>lasiophyllum</i>
Zygophyllaceae	<i>Roepera</i>	<i>aurantiaca</i>
Zygophyllaceae	<i>Roepera</i>	<i>compressa</i>
Zygophyllaceae	<i>Tribulus</i>	<i>astrocarpus</i>


Site ref: DRel1	Location: Dalgaranga waste dump area	Date: 9/8/2021																																										
																																												
Vegetation description	<i>Acacia caesaneura</i> and <i>A. assimilis</i> subsp. <i>assimilis</i> sparse woodland over <i>Acacia craspedocarpa</i> , <i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i> , <i>E. latrobei</i> subsp. <i>latrobei</i> , <i>E. glutinosa</i> and <i>E. punicea</i> sparse shrubland over mixed sparse herbs.																																											
Vegetation condition	Good																																											
Impacts	Grazing by goats; mineral exploration; pastoral activity																																											
Soils	Clay loam, high rock content																																											
Habitat type	Open Acacia woodland on stony plain																																											
Flora species present																																												
<table border="0"> <tr> <td><i>Acacia craspedocarpa</i></td> <td><i>Hakea presissii</i></td> </tr> <tr> <td><i>Acacia grasbyi</i></td> <td><i>Helipterum craspedioides</i></td> </tr> <tr> <td><i>Acacia assimilis</i> subsp <i>assimilis</i></td> <td><i>Maireana glomerifolia</i></td> </tr> <tr> <td><i>Acacia caesaneura</i></td> <td><i>Maireana convexa</i></td> </tr> <tr> <td><i>Acacia restiacea</i></td> <td><i>Maireana georgei</i></td> </tr> <tr> <td><i>Acacia tetragonaphylla</i></td> <td><i>Myriocephalus guerinae</i></td> </tr> <tr> <td><i>Acacia ramulosa</i></td> <td><i>Ptilotus obovatus</i></td> </tr> <tr> <td><i>Atriplex semilunaris</i></td> <td><i>Ptilotus holosericeus</i></td> </tr> <tr> <td><i>Brachyscome pusilla</i></td> <td><i>Ptilotus exaltatus</i></td> </tr> <tr> <td><i>Calotis multicaulis</i></td> <td><i>Rhodanthe maryonii</i></td> </tr> <tr> <td><i>Cephalopterum drummondii</i></td> <td><i>Roepera compressa</i></td> </tr> <tr> <td><i>Eremophila jucunda</i> subsp <i>jucunda</i></td> <td><i>Scaevola spinescens</i></td> </tr> <tr> <td><i>Eremophila latrobei</i> subsp <i>latrobei</i></td> <td><i>Schoenia cassiniana</i></td> </tr> <tr> <td><i>Eremophila glutinosa</i></td> <td><i>Schoenia filifolia</i></td> </tr> <tr> <td><i>Eremophila fraseri</i> ssp <i>fraseri</i></td> <td><i>Senecio glossanthus</i></td> </tr> <tr> <td><i>Eremophila punicea</i></td> <td><i>Sida calyxhymenia</i></td> </tr> <tr> <td><i>Eremophila oldfieldii</i> subsp <i>angustifolia</i></td> <td><i>Solanum lasiophyllum</i></td> </tr> <tr> <td><i>Eremophila glandulifera</i></td> <td><i>Stenopetalum filifolium</i></td> </tr> <tr> <td><i>Erodium ?crinitum</i></td> <td><i>Tecticornia disarticulata</i></td> </tr> <tr> <td><i>Goodenia berardiana</i></td> <td>*<i>Rumex vesicarius</i></td> </tr> <tr> <td><i>Goodenia pusilliflora</i></td> <td></td> </tr> </table>			<i>Acacia craspedocarpa</i>	<i>Hakea presissii</i>	<i>Acacia grasbyi</i>	<i>Helipterum craspedioides</i>	<i>Acacia assimilis</i> subsp <i>assimilis</i>	<i>Maireana glomerifolia</i>	<i>Acacia caesaneura</i>	<i>Maireana convexa</i>	<i>Acacia restiacea</i>	<i>Maireana georgei</i>	<i>Acacia tetragonaphylla</i>	<i>Myriocephalus guerinae</i>	<i>Acacia ramulosa</i>	<i>Ptilotus obovatus</i>	<i>Atriplex semilunaris</i>	<i>Ptilotus holosericeus</i>	<i>Brachyscome pusilla</i>	<i>Ptilotus exaltatus</i>	<i>Calotis multicaulis</i>	<i>Rhodanthe maryonii</i>	<i>Cephalopterum drummondii</i>	<i>Roepera compressa</i>	<i>Eremophila jucunda</i> subsp <i>jucunda</i>	<i>Scaevola spinescens</i>	<i>Eremophila latrobei</i> subsp <i>latrobei</i>	<i>Schoenia cassiniana</i>	<i>Eremophila glutinosa</i>	<i>Schoenia filifolia</i>	<i>Eremophila fraseri</i> ssp <i>fraseri</i>	<i>Senecio glossanthus</i>	<i>Eremophila punicea</i>	<i>Sida calyxhymenia</i>	<i>Eremophila oldfieldii</i> subsp <i>angustifolia</i>	<i>Solanum lasiophyllum</i>	<i>Eremophila glandulifera</i>	<i>Stenopetalum filifolium</i>	<i>Erodium ?crinitum</i>	<i>Tecticornia disarticulata</i>	<i>Goodenia berardiana</i>	* <i>Rumex vesicarius</i>	<i>Goodenia pusilliflora</i>	
<i>Acacia craspedocarpa</i>	<i>Hakea presissii</i>																																											
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<i>Acacia caesaneura</i>	<i>Maireana convexa</i>																																											
<i>Acacia restiacea</i>	<i>Maireana georgei</i>																																											
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<i>Acacia ramulosa</i>	<i>Ptilotus obovatus</i>																																											
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<i>Goodenia berardiana</i>	* <i>Rumex vesicarius</i>																																											
<i>Goodenia pusilliflora</i>																																												


Site ref: DRel2	Location: Dalgaranga waste dump area	Date: 9/8/2021
		
Vegetation description	<i>Acacia fuscaneura</i> and <i>A. caesaneura</i> very open woodland over <i>Acacia ramulosa</i> , <i>A. grasbyi</i> , <i>A. tetragonophylla</i> open shrubland over <i>Eremophila</i> ssp very open low shrubland.	
Vegetation condition	Good	
Impacts	Intensive grazing; mineral exploration; pastoral activity	
Soils	Clay loam	
Habitat type	Open Acacia woodland on clay-loam plain	
Flora species present		
<i>Acacia fuscaneura</i> <i>Acacia caesaneura</i> <i>Acacia grasbyi</i> <i>Acacia ramulosa</i> <i>Acacia tetragonophylla</i> <i>Brachyscome pusilla</i> <i>Caladenia</i> sp. <i>Calandrinia eremaea</i> <i>Calotis multicaulis</i> <i>Cephalopterum drummondii</i> <i>Comesperma volubile</i> <i>Dianella revoluta</i> <i>Eremophila georgei</i> <i>Eremophila punicea</i> <i>Eremophila forrestii</i> subsp <i>forrestii</i> <i>Eremophila glutinosa</i> <i>Eremophila georgei</i> <i>Eremophila fraseri</i> subsp <i>fraseri</i>	<i>Erodium ?crinitum</i> <i>Goodenia berardiana</i> <i>Grevillea deflexa</i> <i>Lawrencella davenportii</i> <i>Maireana convexa</i> <i>Maireana georgei</i> <i>Nicotiana ?rosulata</i> <i>Ptilotus schwartzii</i> <i>Ptilotus obovatus</i> <i>Rhagodia drummondii</i> <i>Schoenia cassiniana</i> <i>Sida</i> sp. Golden calyces glabrous <i>Sida</i> sp. (juv) <i>Siemssenia capillaris</i> <i>Stenopetalum filifolium</i> <i>Trachymene ornata</i> <i>Waitzia acuminata</i>	


Site ref: DRel3	Location: Dalgaranga waste dump area	Date: 9/8/2021																																				
																																						
Vegetation description	<i>Acacia grasbyi</i> , <i>A. ramulosa</i> and <i>A. tetragonophylla</i> sparse tall shrubland over sparse <i>Eremophila</i> ssp low shrubland.																																					
Vegetation condition	Good																																					
Impacts	Grazing by goats; mineral exploration; pastoral activity																																					
Soils	Clay loam, high rock content																																					
Habitat type	Open Acacia woodland on stony plain																																					
Flora species present																																						
<table border="0"> <tr> <td><i>Acacia grasbyi</i></td> <td><i>Goodenia rosea</i></td> </tr> <tr> <td><i>Acacia ramulosa</i></td> <td><i>Hakea presissii</i></td> </tr> <tr> <td><i>Acacia restiacea</i></td> <td><i>Maireana convexa</i></td> </tr> <tr> <td><i>Acacia tetragonaphylla</i></td> <td><i>Nicotiana ?rosulata</i></td> </tr> <tr> <td><i>Austrostipa elegantissima</i></td> <td><i>Ptilotus obovatus</i></td> </tr> <tr> <td><i>Brachyscome pusilla</i></td> <td><i>Ptilotus exaltatus</i></td> </tr> <tr> <td><i>Calotis multicaulis</i></td> <td><i>Rhagodia drummondii</i></td> </tr> <tr> <td><i>Cephalipterum drummondii</i></td> <td><i>Roepera aurantiaca</i></td> </tr> <tr> <td><i>Eremophila punicea</i></td> <td><i>Scaevola spinescens</i></td> </tr> <tr> <td><i>Eremophila oldfieldii</i> subsp <i>angustifolia</i></td> <td><i>Schoenia cassiniana</i></td> </tr> <tr> <td><i>Eremophila forrestii</i> subsp <i>forrestii</i></td> <td><i>Sclerolaena eriacantha</i></td> </tr> <tr> <td><i>Eremophila fraseri</i> subsp <i>fraseri</i></td> <td><i>Senna artemisioides</i> subsp <i>xsturtii</i></td> </tr> <tr> <td><i>Eremophila georgei</i></td> <td><i>Sida</i> sp. Golden calyces glabrous</td> </tr> <tr> <td><i>Eremophila exilifolia</i></td> <td><i>Siemssenia capillaris</i></td> </tr> <tr> <td><i>Eremophila drummondii</i></td> <td><i>Solanum lasiophyllum</i></td> </tr> <tr> <td><i>Erodium ?crinitum</i></td> <td><i>Stenopetalum filifolium</i></td> </tr> <tr> <td><i>Goodenia berardiana</i></td> <td><i>Teucrium teucriifolium</i></td> </tr> <tr> <td><i>Goodenia pusilliflora</i></td> <td>*<i>Rumex vesicarius</i></td> </tr> </table>			<i>Acacia grasbyi</i>	<i>Goodenia rosea</i>	<i>Acacia ramulosa</i>	<i>Hakea presissii</i>	<i>Acacia restiacea</i>	<i>Maireana convexa</i>	<i>Acacia tetragonaphylla</i>	<i>Nicotiana ?rosulata</i>	<i>Austrostipa elegantissima</i>	<i>Ptilotus obovatus</i>	<i>Brachyscome pusilla</i>	<i>Ptilotus exaltatus</i>	<i>Calotis multicaulis</i>	<i>Rhagodia drummondii</i>	<i>Cephalipterum drummondii</i>	<i>Roepera aurantiaca</i>	<i>Eremophila punicea</i>	<i>Scaevola spinescens</i>	<i>Eremophila oldfieldii</i> subsp <i>angustifolia</i>	<i>Schoenia cassiniana</i>	<i>Eremophila forrestii</i> subsp <i>forrestii</i>	<i>Sclerolaena eriacantha</i>	<i>Eremophila fraseri</i> subsp <i>fraseri</i>	<i>Senna artemisioides</i> subsp <i>xsturtii</i>	<i>Eremophila georgei</i>	<i>Sida</i> sp. Golden calyces glabrous	<i>Eremophila exilifolia</i>	<i>Siemssenia capillaris</i>	<i>Eremophila drummondii</i>	<i>Solanum lasiophyllum</i>	<i>Erodium ?crinitum</i>	<i>Stenopetalum filifolium</i>	<i>Goodenia berardiana</i>	<i>Teucrium teucriifolium</i>	<i>Goodenia pusilliflora</i>	* <i>Rumex vesicarius</i>
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Site ref: DRel4 DRel4 sth	Location: Dalgaranga waste dump area	Date: 9/8/2021		
				
Vegetation description	<i>Acacia pteraneura</i> and <i>A. eremaea</i> very open tall shrubland over <i>Acacia tetragonophylla</i> , <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and <i>E. fraseri</i> subsp. <i>fraseri</i> very open mid-shrubland over mixed sparse low shrubs and herbs.			
Vegetation condition	Good			
Impacts	Grazing by goats; mineral exploration; pastoral activity			
Soils	Skeletal sandy loam			
Habitat type	Rocky outcrop			
Flora species present				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <i>Austrostipa elegantissima</i> <i>Acacia pteraneura</i> <i>Acacia eremaea</i> <i>Acacia restiacea</i> <i>Acacia acuminata</i> <i>Acacia tetragonophylla</i> <i>Brachyscome pusilla</i> <i>?Caladenia</i> sp. (juv) <i>Calytrix erosipetala</i> <i>Cephalopterum drummondii</i> <i>Dianella revoluta</i> <i>Drosera ?sp. branched styles</i> <i>Eremophila latrobei</i> subsp <i>latrobei</i> <i>Eremophila fraseri</i> ssp <i>fraseri</i> <i>Erodium ?crinitum</i> <i>Goodenia berardiana</i> <i>Goodenia pusilliflora</i> <i>Goodenia rosea</i> </td> <td style="width: 50%; vertical-align: top;"> <i>Hyalosperma glutinosum</i> <i>Maireana convexa</i> <i>Nicotiana ?rosulata</i> <i>Ptilotus schwartzii</i> <i>Ptilotus obovatus</i> <i>Ptilotus holosericeus</i> <i>Roepera aurantiaca</i> <i>Senna artemisiodes</i> subsp. <i>helmsii</i> <i>Senna artemisiodes</i> subsp. <i>xsturtii</i> <i>Solanum lasiophyllum</i> <i>Stenopetalum filifolium</i> <i>Stenopetalum ?anfractum</i> <i>Thryptomene costata</i> <i>Thysanotus manglesianus</i> <i>Tribulus astrocarpus</i> <i>*Rumex vesicarius</i> </td> </tr> </table>			<i>Austrostipa elegantissima</i> <i>Acacia pteraneura</i> <i>Acacia eremaea</i> <i>Acacia restiacea</i> <i>Acacia acuminata</i> <i>Acacia tetragonophylla</i> <i>Brachyscome pusilla</i> <i>?Caladenia</i> sp. (juv) <i>Calytrix erosipetala</i> <i>Cephalopterum drummondii</i> <i>Dianella revoluta</i> <i>Drosera ?sp. branched styles</i> <i>Eremophila latrobei</i> subsp <i>latrobei</i> <i>Eremophila fraseri</i> ssp <i>fraseri</i> <i>Erodium ?crinitum</i> <i>Goodenia berardiana</i> <i>Goodenia pusilliflora</i> <i>Goodenia rosea</i>	<i>Hyalosperma glutinosum</i> <i>Maireana convexa</i> <i>Nicotiana ?rosulata</i> <i>Ptilotus schwartzii</i> <i>Ptilotus obovatus</i> <i>Ptilotus holosericeus</i> <i>Roepera aurantiaca</i> <i>Senna artemisiodes</i> subsp. <i>helmsii</i> <i>Senna artemisiodes</i> subsp. <i>xsturtii</i> <i>Solanum lasiophyllum</i> <i>Stenopetalum filifolium</i> <i>Stenopetalum ?anfractum</i> <i>Thryptomene costata</i> <i>Thysanotus manglesianus</i> <i>Tribulus astrocarpus</i> <i>*Rumex vesicarius</i>
<i>Austrostipa elegantissima</i> <i>Acacia pteraneura</i> <i>Acacia eremaea</i> <i>Acacia restiacea</i> <i>Acacia acuminata</i> <i>Acacia tetragonophylla</i> <i>Brachyscome pusilla</i> <i>?Caladenia</i> sp. (juv) <i>Calytrix erosipetala</i> <i>Cephalopterum drummondii</i> <i>Dianella revoluta</i> <i>Drosera ?sp. branched styles</i> <i>Eremophila latrobei</i> subsp <i>latrobei</i> <i>Eremophila fraseri</i> ssp <i>fraseri</i> <i>Erodium ?crinitum</i> <i>Goodenia berardiana</i> <i>Goodenia pusilliflora</i> <i>Goodenia rosea</i>	<i>Hyalosperma glutinosum</i> <i>Maireana convexa</i> <i>Nicotiana ?rosulata</i> <i>Ptilotus schwartzii</i> <i>Ptilotus obovatus</i> <i>Ptilotus holosericeus</i> <i>Roepera aurantiaca</i> <i>Senna artemisiodes</i> subsp. <i>helmsii</i> <i>Senna artemisiodes</i> subsp. <i>xsturtii</i> <i>Solanum lasiophyllum</i> <i>Stenopetalum filifolium</i> <i>Stenopetalum ?anfractum</i> <i>Thryptomene costata</i> <i>Thysanotus manglesianus</i> <i>Tribulus astrocarpus</i> <i>*Rumex vesicarius</i>			

Site ref: DRel5	Location: Dalgaranga waste dump area	Date: 9/8/2021
Vegetation description	<i>Acacia craspedocarpa</i> and <i>A. caesaneura</i> tall shrubland over <i>Acacia tetragonophylla</i> , <i>Eremophila glutinosa</i> , <i>E. forrestii</i> subsp. <i>forrestii</i> and <i>E. fraseri</i> subsp. <i>fraseri</i> mid shrubland over mixed low shrubs and herbs.	
Vegetation condition	Very Good (due to recent rain)	
Impacts	Minor grazing by goats and pastoral activity	
Soils	Sandy loam	
Habitat type	Broad drainage line	
Flora species present		
<i>Acacia craspedocarpa</i>	<i>Nicotiana</i> sp.	
<i>Acacia caesaneura</i>	<i>Ptilotus divaricatus</i>	
<i>Acacia tetragonophylla</i>	<i>Ptilotus schwartzii</i>	
<i>Brachyscome pusilla</i>	<i>Ptilotus exaltatus</i>	
<i>Calotis multicaulis</i>	<i>Ptilotus obovatus</i>	
<i>Cephalopterum drummondii</i>	<i>Ptilotus holosericeus</i>	
<i>Corchorus</i> sp.	<i>Rhodanthe stricta</i>	
<i>Eremophila glutinosa</i>	<i>Rhodanthe maryonii</i>	
<i>Eremophila forrestii</i> ssp <i>forrestii</i>	<i>Roepera aurantiaca</i>	
<i>Eremophila fraseri</i> ssp <i>fraseri</i>	<i>Schoenia cassiniana</i>	
<i>Eriachne helmsii</i>	<i>Sida</i> sp. Golden calyces glabrous	
<i>Erodium ?crinitum</i>	<i>Sida calyxhymenia</i>	
<i>Goodenia berardiana</i>	<i>Siemssenia capillaris</i>	
<i>Goodenia pusilliflora</i>	<i>Solanum lasiophyllum</i>	
<i>Hyalosperma glutinosum</i>	* <i>Sonchus oleraceus</i>	
<i>Maireana convexa</i>	* <i>Spergula pentandra</i>	

Site ref: DRel6	Location: Dalgaranga waste dump area	Date: 9/8/2021
		
Vegetation description	<i>Acacia pteraneura</i> and <i>A. eremaea</i> very open tall shrubland over <i>Acacia tetragonophylla</i> , <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and <i>E. fraseri</i> subsp. <i>fraseri</i> very open mid-shrubland over mixed sparse low shrubs and herbs.	
Vegetation condition	Good	
Impacts	Grazing by goats; mineral exploration; pastoral activity	
Soils	Skeletal sandy loam	
Habitat type	Rocky outcrop	
Flora species present		
<i>Austrostipa elegantissima</i> <i>?Caladenia hirta</i> <i>Acacia pteraneura</i> <i>Acacia eremaea</i> <i>Acacia restiacea</i> <i>Acacia acuminata</i> <i>Acacia tetragonophylla</i> <i>Brachyscome pusilla</i> <i>Calytrix erosipetala</i> <i>Cephalopterum drummondii</i> <i>Cheilanthes lasiophylla</i> <i>Chorizema genistoides</i> <i>Dianella revoluta</i> <i>Drosera ?sp. Branched styles</i> <i>Eremophila latrobei</i> subsp. <i>latrobei</i> <i>Eremophila fraseri</i> subsp. <i>fraseri</i> <i>Eremophila platycalyx</i> <i>Erodium ?crinitum</i> <i>Goodenia berardiana</i>	<i>Goodenia pusilliflora</i> <i>Goodenia rosea</i> <i>Hyalosperma glutinosum</i> <i>Maireana convexa</i> <i>Nicotiana ?rosulata</i> <i>Ptilotus schwartzii</i> <i>Ptilotus obovatus</i> <i>Ptilotus holosericeus</i> <i>Roepera aurantiaca</i> <i>Senna artemisiodes</i> subsp. <i>helmsii</i> <i>Senna artemisiodes</i> ssp. <i>xsturtii</i> <i>Solanum lasiophyllum</i> <i>Stenopetalum filifolium</i> <i>Stenopetalum ?anfractum</i> <i>Thryptomene costata</i> <i>Thysanotus manglesianus</i> <i>Tribulus astrocarpus</i> <i>*Rumex vesicarius</i>	

Site ref: DRel7	Location: Dalgaranga TSF extension area	Date: 10/8/2021
		
Vegetation description	<i>Acacia fuscaneura</i> and <i>A. caesaneura</i> open woodland over <i>Acacia tetragonophylla</i> , <i>Eremophila fraseri</i> subsp. <i>fraseri</i> open mid-shrubland over mixed low open shrubland and herbs.	
Vegetation condition	Good to Very Good	
Impacts	Grazing by goats; mineral exploration; pastoral activity	
Soils	Clay loam	
Habitat type	Acacia woodland	
Flora species present		
<i>Acacia fuscaneura</i>	<i>Grevillea stenobotrya</i>	
<i>Acacia caesaneura</i>	<i>Hakea presissii</i>	
<i>Acacia craspedocarpa</i>	<i>Leichhardtia australis</i>	
<i>Acacia tetragonophylla</i>	<i>Maireana convexa</i>	
? <i>Amyema preissii</i>	<i>Nicotiana ?rosulata</i>	
<i>Amyema gibberula</i>	<i>Ptilotus obovatus</i>	
<i>Brachyscome pusilla</i>	<i>Rhagodia drummondii</i>	
? <i>Caladenia hirta</i>	<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i>	
<i>Dianella revoluta</i>	<i>Roepera aurantiaca</i>	
<i>Enchylaena tomentosa</i>	<i>Schoenia cassiniana</i>	
<i>Eremophila fraseri</i> subsp. <i>fraseri</i>	<i>Stenopetalum filifolium</i>	
<i>Eremophila punicea</i>	<i>Waitzia acuminata</i>	
<i>Erodium ?crinitum</i>	* <i>Rumex vesicarius</i>	

Site ref: DRel8 DRel9	Location: Dalgaranga TSF extension area	Date: 10/8/2021		
				
Vegetation description	<i>Acacia fuscanera</i> and <i>A. caesaneura</i> open woodland over <i>Acacia tetragonophylla</i> , <i>Eremophila fraseri</i> subsp. <i>fraseri</i> open mid-shrubland over mixed low open shrubland and herbs.			
Vegetation condition	Good to Very Good			
Impacts	Grazing by goats; mineral exploration; pastoral activity			
Soils	Clay loam			
Habitat type	Acacia woodland			
Flora species present				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <i>Acacia caesaneura</i> <i>Acacia craspedocarpa</i> <i>Acacia fuscanera</i> <i>Acacia tetragonophylla</i> ?Amyema preissii Amyema gibberula Brachyscome pusilla ?Caladenia hirta Codonocarpus cotinifolius Dianella revoluta Enchylaena tomentosa Eremophila forrestii subsp. forrestii Eremophila fraseri subsp. fraseri Eremophila georgei Eremophila punicea Erodium ?crinitum Grevillea deflexa Grevillea stenobotrya </td> <td style="width: 50%; vertical-align: top;"> <i>Hakea preissii</i> Leichhardtia australis Maireana convexa Nicotiana ?rosulata Pittosporum angustifolium Ptilotus obovatus Rhagodia drummondii Rhodanthe chlorocephala subsp. splendida Roepora aurantiaca Schoenia cassiniana Senna charlesiana Senna glutinosa subsp. x luerssenii Solanum lasiophyllum Stenopetalum filifolium Teucrium teucriifolium Waitzia acuminata *Rumex vesicarius </td> </tr> </table>			<i>Acacia caesaneura</i> <i>Acacia craspedocarpa</i> <i>Acacia fuscanera</i> <i>Acacia tetragonophylla</i> ?Amyema preissii Amyema gibberula Brachyscome pusilla ?Caladenia hirta Codonocarpus cotinifolius Dianella revoluta Enchylaena tomentosa Eremophila forrestii subsp. forrestii Eremophila fraseri subsp. fraseri Eremophila georgei Eremophila punicea Erodium ?crinitum Grevillea deflexa Grevillea stenobotrya	<i>Hakea preissii</i> Leichhardtia australis Maireana convexa Nicotiana ?rosulata Pittosporum angustifolium Ptilotus obovatus Rhagodia drummondii Rhodanthe chlorocephala subsp. splendida Roepora aurantiaca Schoenia cassiniana Senna charlesiana Senna glutinosa subsp. x luerssenii Solanum lasiophyllum Stenopetalum filifolium Teucrium teucriifolium Waitzia acuminata *Rumex vesicarius
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