



BUSH BLITZ SPECIES DISCOVERY PROGRAM



Hiltaba Nature Reserve Gawler Ranges National Park SA

12–23 November 2012



What is Bush Blitz?

Bush Blitz is a multi-million dollar partnership between the Australian Government, BHP Billiton and Earthwatch Australia to document plants and animals in selected properties across Australia's National Reserve System.

This innovative partnership harnesses the expertise of many of Australia's top scientists from museums, herbaria, universities, and other institutions and organisations across the country.

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Summary

In November 2012, a Bush Blitz survey was conducted in the Gawler Ranges of South Australia. Previously only limited surveys had been undertaken of the region, and this survey represented a significant opportunity to add to our knowledge of the region's biodiversity.

The area includes a wide variety of habitats, ranging from rocky hills to sandy plains, and from mallee forest and *Acacia* and *Casuarina* shrublands to tussock grasslands. This diversity of habitats in turn supports a wide variety of fauna and flora species.

In the Hiltaba Nature Reserve, 801 species were identified, 581 of which had not been recorded previously in the reserve. In the Gawler Ranges National Park, 365 species were identified, 165 of which had not been recorded previously in the park. It should be noted that the survey took place after an extended dry period, and discovery of additional species might be expected after rains.

In the vertebrate collection, the survey of Hiltaba Nature Reserve found 16 native mammal species and 36 reptile species; seven of the mammal species and 12 of the reptile species were recorded for the first time. Some of these new records were of species already known in nearby parts of the Gawler Ranges, but others represent significant additions to our knowledge of their distribution. The mix of species highlights Hiltaba's situation on an intersection between several major South Australian ecological regions, resulting in unusually diverse reptile fauna.

Although dry conditions may have limited the number of invertebrates found, many species new to the reserves were identified, as well as many species new to science.

Abbreviations

DEWNR

Department of Environment, Water and Natural Resources (South Australia)

EPBC Act

Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

GRNP

Gawler Ranges National Park

NPW Act

National Parks and Wildlife Act 1972 (South Australia)

NRS

National Reserve System

WoNS

Weeds of National Significance

Eighty invertebrate species new to science were identified during this survey. The largest number were jumping plantlice (28 species), followed by spiders (21 species), true bugs (16 species) and native bees (14 species). Although only three wasp species were found, one of these was a parasitic species new to science. Further targeted investigation of other invertebrate taxa would likely result in the discovery of many more new species.

Native bees were particularly well represented in the invertebrate collection, with 116 species collected. There was also a diverse range of true bugs (99 species), ants (61 species), moths (54 species), jumping plantlice (47 species), and spiders (42 species).



A range of flora species were collected during the survey; however, the dry conditions substantially reduced the number of species available, with a general lack of annual plants and perennials in flower. In total, 374 flora species were collected: 308 flowering plants, 4 ferns, 3 liverworts, 24 mosses, 27 lichens and 8 macrofungi.

A number of introduced and pest species were identified, though mostly in low numbers, and usually in areas of human disturbance. The presence of Goats (*Capra hircus*) is of greatest

concern, and despite periodic control of their numbers, they continue to proliferate in the reserves. Goats have a major impact on many flora species, and some species may already have declined as a result of browsing pressure. Lichen species also decline in goat-affected areas due to the impact of goat hooves.

The number of weed species identified was low, probably due in part to the dry seasonal conditions, and in part to the general resilience of rocky hill habitat.



Some of the Bush Blitz team at Hiltaba Nature Reserve © Copyright, Australian Government Department of the Environment





Introduction

This is a report for the Bush Blitz program, which aims to survey recent additions to the National Reserve System (NRS).¹ Bush Blitz is an initiative of the Australian Government, through the Australian Biological Resources Study, in partnership with BHP Billiton and Earthwatch Australia. The Bush Blitz objectives are:

- + to promote, publicise and demonstrate the importance of taxonomy through species discovery;
- + to undertake a national species discovery program targeted at recently acquired properties of the National Reserve System of Australia;
- + to support the science of taxonomy in Australia through training students and early career researchers, the provision of grants for species description and resolution of taxonomically problematic, nationally important groups;
- + to promote partnerships between scientific institutions, government, industry and non-government organisations; and
- + to inform the National Reserve System, Reserve Managers and other stakeholders of the results of the Bush Blitz Project.

This Bush Blitz survey, undertaken in November 2012, targeted the Gawler Ranges, investigating Hiltaba Nature Reserve and the Gawler Ranges National Park (GRNP). The timing, together with the drier than usual conditions leading up to the

survey, meant that the survey period was not well suited for sampling some taxa. For example, annual plants were under-represented in the collection, and the condition of many perennial plants indicated that sustained dry conditions had prevailed for longer than a single season. The dry conditions were also likely to have reduced the numbers of both flower-visiting and leaf-eating invertebrate species, particularly the latter, which prefer young foliage.

The Bush Blitz survey involved more than 40 people, 20 of whom are leading Australian scientists. The Australian Biological Resources Study provided the logistical coordination and overall leadership of the survey. Experts from the following organisations conducted the field and laboratory work:

- + South Australian Department of Environment, Water and Natural Resources
- + South Australian Museum
- + State Herbarium of South Australia
- + University of Adelaide
- + University of New South Wales
- + Queensland Museum
- + Biodiversity Assessment and Management Pty Ltd.

We wish to thank Michael Starkey from South Australian Native Title Services for liaising with traditional owners and facilitating the involvement of Australian Government funded Working on Country Indigenous rangers, who assisted scientists with the fieldwork. We also thank Nature Foundation SA, particularly the property manager Greg Johnston, and National Parks South Australia, particularly ranger in charge Michael Freak, for facilitating access to the reserves and providing helpful advice on survey locations.

¹ The NRS is Australia's network of protected areas, covering 17.88% of the country—over 137 million hectares. It is made up of Commonwealth, state and territory reserves, Indigenous lands and protected areas run by non-profit conservation organisations, through to ecosystems protected by farmers on their private working properties <<http://www.environment.gov.au/land/nrs>>, accessed 18 May 2015.

Reserve Overview²



Hiltaba Nature Reserve and Gawler Ranges National Park

Hiltaba Nature Reserve:
Nature Foundation SA

Gawler Ranges National Park:
Government of South Australia

Date of purchase

Hiltaba Nature Reserve: 2012

Gawler Ranges National Park: 2000

Area

Hiltaba Nature Reserve: 77,000 ha

Gawler Ranges National Park: 166,000 ha



Hiltaba homestead. Hiltaba Nature Reserve was originally a sheep station before it was purchased by the Nature Foundation SA, Peter Lang © Copyright, DEWNR SA

Description

The survey took place in the Gawler Ranges, in Hiltaba Nature Reserve and Gawler Ranges National Park, around 350 km north-west of Adelaide, South Australia.

Hiltaba was a sheep station before it was purchased by the Nature Foundation SA. The station was grazed by sheep for more than 100 years, which affected the vegetation of the valleys and plains but not of the rugged granite hills. However, the vegetation communities in the hills and ranges have been adversely affected by large numbers of feral goats, which are an unwanted feature of the Gawler Ranges.

When the station was purchased by the Nature Foundation SA, the stock and about 6,500 feral goats were removed to allow the Foundation to conserve important native habitats, plants and animals in the area.

The hills of Hiltaba form part of the sprawling Gawler Ranges, which fall within the Gawler bioregion. Climatically, the Gawler bioregion forms a transition zone between the temperate areas to the south and the arid areas to the north. The vegetation of Hiltaba Nature Reserve consists of a mosaic of *Acacia* and *Casuarina* shrublands, mallee forest, chenopod plains and tussock grasslands in a landscape of rocky hills and sandy plains. The granite domes of the Hiltaba hills are a feature of the area's geology and are part of some of the oldest geological formations on the continent, dating back some 1,600 million years.

² Information from the NRS applications and assessments.



National Reserve System conservation values

The Gawler Ranges are known to have high species diversity. More than 162 fauna species and 976 flora species, including several of conservation significance, are known from the area.



Gould's Goanna (*Varanus gouldii*). Hiltaba Nature Reserve is very diverse in reptile species, Nicholas Birks © Copyright, South Australian Museum

The area is known for its spectacular rock formations. Due to their elevation, the rocky landforms of the ranges provide mesic refuges, and species that are more typical of areas further east, such as the Flinders and Mount Lofty Ranges, can use the Gawler Ranges hills as stepping stones into the arid zone. Immediately to the north and north-east of Hiltaba are the very dry salt lake systems of Lake Everard and Lake Gairdner that represent a southern limit for the Lake Eyre–Lake Torrens Basin. This allows arid zone species adapted to harsh, open desert landscapes to penetrate southwards. To the west and south of Hiltaba are the sand dune deserts of the Yellabinna sandplain, itself a south-easterly extension of the Great Victoria Desert. A narrow strip of this landform runs inside the southern boundary of Hiltaba, bringing with it its distinctive fauna.

With the addition of Hiltaba to the NRS, an almost 750 km strip of land is now connected from the border between Western Australia and South Australia to the Eyre Peninsula, making Hiltaba a crucial link in the East meets West NatureLink corridor.³ The NatureLink corridors are being established by the South Australian Government to support the species and ecosystems in central and northern Eyre Peninsula and the far west of South Australia by connecting protected habitats.

³ <http://www.environment.sa.gov.au/files/6a64dbd5-b437-4610-a67d-a0e300c9adcb/About_Naturelinks.pdf>, accessed 25 November 2014.



Methods

Collection and observation sites were selected based on land classes, supplemented by identification of suitable microhabitats during the field visit. Site selection also depended on access, suitability for trapping and time restrictions. Site locations were recorded using global positioning systems.

A number of taxonomic groups were identified as targets for study. [Table 1](#) lists the groups surveyed and the specialists who undertook the fieldwork.

Table 1: Taxonomic groups surveyed and personnel

Group	Common names	Expert	Affiliation
Mammalia	Mammals	David Stemmer	South Australian Museum
		David Armstrong	DEWNR
Reptilia	Reptiles	Mark Hutchinson Stephen Donnellan	South Australian Museum
Hymenoptera Lepidoptera Collembola	Ants, Bees and Wasps Butterflies Springtails	Remko Leijs Simon Tierney Michael Moore Jan Forrest Mark Stevens	South Australian Museum
		Peter Lang	DEWNR
		Matthew Golebiowski	South Australian Museum; University of Adelaide
Buprestidae	Jewel beetles	Peter Lang	DEWNR; South Australian Museum
Cheloninae Psylloidea Thysanoptera Odonata	Wasps Jumping Plantlice Thrips Dragonflies	Rebecca Kittel Gary Taylor	University of Adelaide
Heteroptera	True Bugs	Marina Cheng Serena Lam	University of New South Wales
Arachnida	Spiders	Barbara Baehr	Queensland Museum
Gastropoda Bivalvia	Non-marine Molluscs	John Stanisic	Biodiversity Assessment and Management Pty Ltd; Queensland Museum
Stygofauna	Groundwater Fauna	Remko Leijs Rachael King	South Australian Museum
Vascular Flora Bryophyta Lichens Fungi	Flowering Plants and Ferns Liverworts and Mosses Lichens Fungi	Peter Lang Chris Brodie Helen Vonow	State Herbarium of South Australia, DEWNR
		Jürgen Kellermann Hugh Cross	State Herbarium of South Australia, DEWNR; University of Adelaide





Barbara Baehr and Working on Country ranger Clifford 'Cliffy' Woodford examine a specimen. Five Australian Government funded Working on Country Indigenous rangers assisted scientists during the Bush Blitz © Copyright, Australian Government Department of the Environment

A standard suite of survey techniques was used:

- + Mammals and reptiles were collected using a drift fence, together with pit, funnel and Elliott traps. Active searching was used to increase collection, including searches by day in ground litter and debris and under stones, and searches by night using head torches. In addition, reptiles that were encountered opportunistically were noted or, in some cases, caught by hand. Large mammal remains such as bones were also identified opportunistically. Bats were trapped using harp nets.
- + Terrestrial invertebrates were collected using a drift fence and funnel traps. Malaise traps were set for flying insects. Active searching with sweep nets and hand nets was used to increase the collection of bees, butterflies, beetles and springtails. The majority of specimens were collected by sweeping flowering plants in bloom—for example, flowering eucalypts attracted high numbers of a diverse range of native bees. Blue vane traps and a vehicle net were also used to collect native bees. Black lighting and a white sheet were used to collect moths at night. Berlese funnels were used to extract invertebrates from litter samples.
- + True bugs were collected by beating foliage and sweeping understorey plants. Light trapping was also used at night.
- + Damselflies and dragonflies were collected by targeting dam sites, as well as adventitiously while sampling for other insects in the field. Jumping plantlice and thrips were collected by sampling individual plant species to determine host plant specificity.
- + Spiders were collected using pitfall traps as well as opportunistically.
- + Non-marine molluscs were collected by hand from under woody debris, on the ground and buried in the sandy soil.



- + Stygofauna were collected by sampling bores and wells using a small, weighted plankton net; narrow fissures in rock springs using small tubes; and subsurface water near springs with a net.
- + Plants were collected when a species was first encountered and in suitable condition. Additional specimens were collected if they were of superior quality or of particular interest. Silica-dried leaf samples were collected for a range of endemic plants and other taxa identified as research priorities. Soil crust lichens were collected with the soil to which they were attached. In addition to vouchered specimens, a list of associated taxa was often recorded for later conversion into non-vouchered species records.

Collections were identified using available literature and the holdings of museums and herbaria. Fauna specimens were deposited in the South Australian Museum, Queensland Museum and University of New South Wales, and flora specimens in the State Herbarium of South Australia.

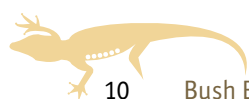
Final species lists were compiled by combining the results of this Bush Blitz survey with data provided by the Australian Natural Heritage Assessment Tool, Australia's Virtual Herbarium, Biological Databases of South Australia and the State Herbarium of South Australia's specimen database (ADHERB).



Rebecca Kittel collecting invertebrates with a butterfly net, Beth Tully
© Copyright, Australian Government Department of the Environment



Invertebrate pitfall traps in mallee dunes, Simon Tierney © Copyright, South Australian Museum





Results

The locational data for survey sites and collected and observed specimens are available to reserve managers. A total of 581 species at Hiltaba Nature Reserve and 165 at GRNP were added to those known for the reserves, and 80 putative species new to science were discovered; these await assessment. No threatened animal species were observed, but nine threatened plants were recorded, one of which is a new record. Eleven exotic or pest fauna species and 34 weed species were also recorded.



Ranges Stone Gecko (*Diplodactylus furcosus*). The *Diplodactylus* genus is endemic to Australia, Nicholas Birks © Copyright, South Australian Museum

Species Lists

Appendix A provides updated species lists for the reserves. Names in **bold brown text** are putative new species. Species marked with an asterisk (*) had not been recorded previously. Those without an asterisk were recorded previously and identified again during this survey. Species shown with **blue squares** were not recorded on this survey, but are known from previous studies. Table 2 provides a summary of the number of species recorded, new records and putative new taxa found on the reserves during this Bush Blitz.



A new genus of spider, Lycosidae n. gen. (*ariadnae* group) n. sp. 17. Twenty-one putative new species of spider were discovered on the survey, Barbara Baehr © Copyright, Queensland Museum

Some specimens have been identified only to family or genus level. This is partly because identifying specimens is very time-consuming, with detailed microscopic examination needed in most cases. Also, some groups are 'orphans': there are no experts currently working on them, and their taxonomic literature is out of date. For orphan groups, species-level identification is not possible. Unidentified Bush Blitz specimens are held in institutional collections where they can be subject to further study.

Nomenclature and taxonomic concepts used in this report are consistent with the Australian Faunal Directory, Australian Plant Name Index, Australian Plant Census, Checklist of the Lichens of Australia and its Island Territories, AusMoss, and the Catalogue of Australian Liverworts and Hornworts.



Table 2: Summary of flora and fauna records and putative new species

Group	Common name	Number of species recorded		Species new to reserve		Putative new species
		Hiltaba	GRNP	Hiltaba	GRNP	
Mammalia	Mammals	21	–	7	–	0
Reptilia	Reptiles	36	–	12	–	0
Formicidae	Ants	61	–	60	–	0
Apoidea	Bees	92	51	92	51	14
Apocrita	Wasps	3	0	3	0	1
Lepidoptera	Butterflies	8	5	8	5	0
Lepidoptera	Moths	54	–	54	–	0
Asilidae	Robber Flies	1	0	1	0	0
Coleoptera	Beetles	31	5	31	5	0
Neuroptera	Net-winged Insects, Lacewings	4	0	4	0	0
Heteroptera	True Bugs	66	47	63	44	16
Psylloidea	Jumping Plantlice	43	13	43	13	28
Thysanoptera	Thrips	4	2	4	2	0
Blattodea	Cockroaches and Termites	2	0	2	0	0
Mantodea	Mantises	1	0	1	0	0
Orthoptera	Grasshoppers and Crickets	13	1	13	1	0
Dermaptera	Earwigs	0	1	0	1	0
Odonata	Damselflies and Dragonflies	5	0	5	0	0
Collembola	Springtails	28	5	28	5	0
Arachnida	Spiders	42	–	42	–	21
Gastropoda	Snails and Slugs	12	6	10	4	0
Bivalvia	Bivalves	2	0	2	0	0
Stygofauna	Groundwater Fauna	3	4	3	4	0
Angiospermae	Flowering Plants	208	207	42	14	0
Pteridophyta	Ferns	2	2	0	0	0
Marchantiophyta	Liverworts	3	0	3	0	0
Bryophyta	Mosses	24	7	22	7	0
Lichens	Lichens	27	6	21	6	0
Fungi	Fungi	5	3	5	3	0
Totals		801	365	581	165	80

– = not surveyed





Western Pygmy-possum (*Cercartetus concinnus*), Nicholas Birks © Copyright, South Australian Museum

Exotic and Pest Species

Appendix C lists the exotic and pest species known in the reserves. A summary of exotic and pest species identified during the study is provided in Table 4.

Table 4: Number of exotic and pest species identified

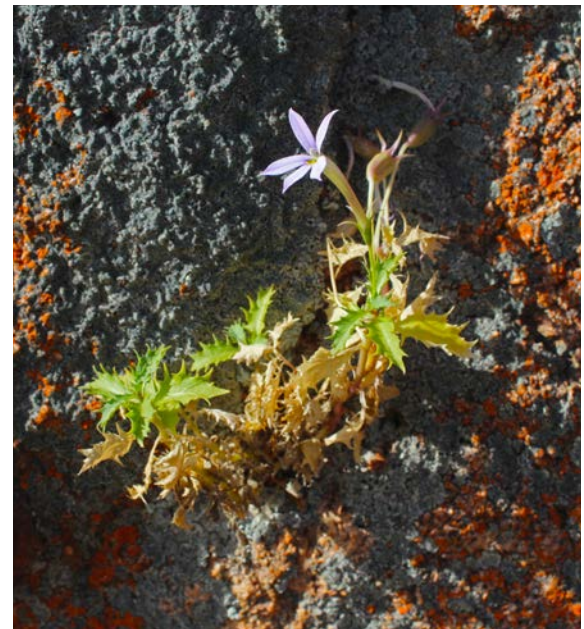
Reserve	Fauna	Flora
Hiltaba	11	28
GRNP	2	16

Threatened Species

Appendix B lists the species assessed as threatened under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or the South Australian *National Parks and Wildlife Act 1972* (NPW Act). A summary of threatened species identified during the study is provided in Table 3.

Table 3: Number of threatened species identified

Reserve	Fauna	Flora
Hiltaba	0	6
GRNP	0	4



Rock Isotome (*Isotoma petraea*), Peter Lang © Copyright, DEWNR SA

Discussion

Putative New Species

A putative species new to science is an unnamed species that, as far as can be ascertained, was collected for the first time during the survey; it is confirmed as a new species once it is named and its description published. Specimens collected during the Bush Blitz also include unnamed taxa that are already known from museum and herbarium collections: these are not classed as putative new species. A breakdown of the groups in which putative new species were recorded is provided in Table 5.

Table 5: Putative new species by group

Group	Common name	Putative new species
Apoidea	Bees	14
Apocrita	Wasps	1
Heteroptera	True Bugs	16
Psylloidea	Jumping Plantlice	28
Arachnida	Spiders	21

Invertebrate Fauna

Fourteen putative new bee species were identified during the survey. Of these, 13 are from the family Colletidae, known as silk bees because of their method of building nests. Colletidae is the largest Australian bee family. The other new species was from the family Apidae, which includes the common introduced honey bee and the stingless bees. A putative new parasitic wasp from the family Braconidae was also collected.



The vehicle net, nicknamed 'Priscilla', being used to collect invertebrates, Erin Lake
© Copyright, Australian Government Department of the Environment

Six putative new species of true bugs were found at Hiltaba and 10 were found at GRNP. All species are from the family Miridae, with 14 from the subfamily Orthotylinae and two from the subfamily Mirinae.

The largest number of putative new species was found within the jumping plantlice (28 species). Nineteen species of *Acizzia* were found on *Acacia*, *Amyema*, *Dodonaea* and *Senna* plants.

Spiders were also well represented, with 21 new species from 11 families collected. Most are medium-sized day-active hunting spiders: Corinnidae (2 species), Oxyopidae (3 species), Oonopidae (1 species), Zodariidae (3 species) and Zoridae (3 species); or night-active hunters: Dipluridae (1 species), Idiopidae (1 species), Gnaphosidae (1 species), Lycosidae (2 species), Miturgidae (1 species) and Nemesiidae (3 species). The new Oonopidae species, *Opopaea stevensi*, was named after Mark Stevens from the South Australian Museum. This species was described in *The goblin spider genus Opopaea in Australia and the Pacific islands*.⁴

4 Baehr, B. C. in Baehr, B. C., Harvey, M. S., Smith, H. M. & Ott, R. 2013, *Memoirs of the Queensland Museum—Nature* 58(1): 107–338 [164], <<http://www.qm.qld.gov.au/~media/Documents/QM/About%20Us/Publications/Memoirs%20-%20Nature/N58/mqm-n58-baehr-et-al-part1.pdf>>, accessed 18 May 2015..





Shingleback (*Tiliqua rugosa*). When threatened, they open their mouth and stick out their tongue, Jan Forrest © Copyright, South Australian Museum

Threatened Species

Australia is home to an estimated 570,000 species, most of which are yet to be described formally. Approximately 92% of Australian plants, 87% of mammals, and 93% of reptiles are endemic.⁵ Changes to the landscape and native habitat resulting from human activity have put many of these unique species at risk. Over the last 200 years, numerous species have become extinct; many others are threatened.

Vertebrate Fauna

Eleven threatened animal species were previously recorded for Hiltaba Station. None of these species were found during this survey; however, only two species were targets of the survey—the Yellow-footed Rock-wallaby (*Petrogale xanthopus xanthopus*) and the Carpet Python (*Morelia spilota*). The other threatened species are birds, which were not target taxa for this survey.

⁵ Chapman, A. D. 2009, *Numbers of Living Species in Australia and the World*, 2nd edn. Australian Biological Resources Study, Canberra.

Vascular Flora

Six species identified at Hiltaba and four at GRNP are listed under the EPBC or NPW Acts. Since some species were collected in both locations, the total number of listed flowering plants recorded was eight (Table 6).

The taxonomic status of plants related to Toondulya Wattle (*Acacia toondulya*) on Hiltaba Station warrants further investigation, as the forms occurring on this property are atypical. *A. toondulya* was described only recently (O'Leary 2002) with the type collection coming from Toondulya Bluff on Kondoolka Station, immediately west of Hiltaba. O'Leary recognised some examples of putative hybrids with its close relative Flinders Wattle (*A. notabilis*), but included occurrences on Hiltaba Station within the species concept and recognised considerable variation in phyllode dimensions and shape.

Material identified as *Hibbertia* aff. *crispula* was collected twice in GRNP. The collections are intermediate between typical *H. crispula* from the Nullarbor Region and *H. virgata* from the northern Eyre Peninsula, but were determined as being closest to *H. crispula*.



Acacia aff. *euthycarpa*, wispy Gawler Ranges form, C. J. Brodie © Copyright, DEWNR SA



Table 6: Threatened species identified

Scientific name	Common name	Listing	Reserve	Locations	Abundance/Comments
<i>Acacia toondulya</i>	Toondulya Wattle	NPW Act—Rare	Hiltaba	Near feeder tank, S of Hiltaba HS, on eastern slope. Near feeder tank, S of Hiltaba HS, on western slope.	Very patchily distributed in small stands.
<i>Acacia iteaphylla</i>	Flinders Ranges Wattle	NPW Act—Rare	Hiltaba	Pretty Point. Mid south-facing slope of Eurilla Hill. Summit of Eurilla Hill. Ridge NW of Mt Hiltaba. Mount Friday, in gorge on S side.	Locally common in rocky areas where there is sufficient soil moisture.
<i>Glossostigma</i> sp. Long-stout-pedicelled (W.R. Barker 2481)	–	NPW Act—Vulnerable	Hiltaba	Mount Friday, towards top end of rocky gorge on S side.	Remains from long dried-out rock pool.
<i>Grevillea anethifolia</i>	Spiny Cream Spider-flower	NPW Act—Rare	Hiltaba	Upper eastern slope of Eurilla Hill.	More than 200 plants, mostly 20 to 60 cm tall, appear to be suckering.
			GRNP	Northern boundary track near junction of track to Mt Centre. Upper northern slope of Mt Centre.	Localised patch on small north facing escarpment.
<i>Hibbertia crispula</i> (see comment on previous page)	–	EPBC Act—Vulnerable NPW Act—Vulnerable	GRNP	Sand dune near Kododo Hill, south from camping area. Dune W of road between Kododo Hill and Scrubby Peak.	Locally common in rocky areas where there is sufficient soil moisture.
<i>Melaleuca armillaris</i> subsp. <i>akineta</i>	Needle-leaf Honey-myrtle	NPW Act—Rare	Hiltaba	Pretty Point, second ridge west of road. Lower NW slope of hill NW of Mt Hiltaba. Summit of Eurilla Hill. Footslope on side of gully on S side of range, S of North Wall. Mount Friday, towards top end of rocky gorge on S side. Ridgeline summit on hill NW of Mt Hiltaba.	Patchily distributed large shrubs or small trees, mostly in rocky gullies or crevices, and at the edges of rock slabs where run-off water accumulates.
			GRNP	Just below summit of Mt Centre on NW side. c. 100 m S of cairn on summit of Mt Centre. Mid NE slope of ridge, 2 km ENE Yandinga Well on W side of Peterby Yards-Yardea Road. Saddle on S side of Nukey Bluff.	Localised small stands and patches.
<i>Melaleuca leiocarpa</i>	Pungent Honey-myrtle	NPW Act—Rare	GRNP	Pine Lodge track.	Uncommon; with mallee on dune of pale orange-brown loamy sand.
<i>Santalum spicatum</i>	Sandalwood	NPW Act—Vulnerable	Hiltaba	Footslope on side of gully on S side of range, S of North Wall.	Single old shrub/small tree at this site. This was the only plant encountered by the botanical team, but two other sightings were reported, although not recorded, by other survey participants.





Berlese funnels are used to separate invertebrates from litter samples
© Copyright, Australian Government Department of the Environment

Exotic and Pest Species

The NRS is designed to conserve and protect Australia's rare and threatened ecosystems and provide refuge for species at risk. Invasive species can have a major impact on already vulnerable species and ecosystems, as well as economic, environmental and social impacts. The inclusion of exotic and pest species records as part of this report is designed to provide land managers with baseline information to assist with further pest management programs.

Vertebrate Fauna

Five feral mammal species were identified at Hiltaba. The most prominent was the Goat (*Capra hircus*), with all survey teams encountering small to large groups daily. There are still large numbers of these animals on the reserve in spite of significant removals that have occurred since Nature Foundation SA took over the reserve. In spite of the numbers of goats, there have been good seasons in recent years and the landscape and vegetation appeared to be in good condition. Native grazers (kangaroos and wombats) were also common and well nourished. Active measures are being taken by the reserve management to further reduce goat numbers.

Occasional sightings of live Cats (*Felis catus*) and Foxes (*Vulpes vulpes*) or their skeletal remains indicated presence of both species, although neither appeared to be numerous. However, there were no targeted searches (e.g. night-time spotlighting) to assess their numbers. House Mouse (*Mus musculus*) numbers were very low. This reflected similarly low numbers of native murids and is probably related to the failure of the spring growing season before the survey period, with a consequent lack of seeding grasses. A few stray Sheep (*Ovis aries*) remain at large on the property.

Invertebrate Fauna

The Honey Bee (*Apis mellifera*) is not listed as a pest species; however, it can act as a pest species in certain circumstances. Feral colonies can occupy nesting hollows that otherwise might be used by mammals or hollow-breeding birds such as parrots, lorikeets and cockatoos. Honey Bees may also compete with native bees for nectar and pollen, especially when these resources are scarce. Furthermore, they can be very persistent at water sources as they require water to thermoregulate their colonies. In order to control feral Honey Bees, access to water sources should be minimised.



One pest butterfly species was found at Hiltaba. The common and widespread Cabbage White Butterfly (*Pieris rapae*) is a threat to commercial agriculture, the caterpillars attacking cabbage and other mustard family crops (Brassicaceae).

Two true bug pest species were identified in low numbers: Rutherglen Bug (*Nysius vinitor*), found at both Hiltaba and GRNP is a pest of many crops across Australia, and Brown Bean Bug (*Melanacanthus scutellaris*), found at Hiltaba is a major pest of many legume crops.

Two introduced snail species were recorded during the survey: Vineyard Snail (*Cernuella virgata*) and White Italian Snail (*Theba pisana*). These species are found throughout the southern parts of Australia and have become pests in vine-growing areas. The two species were found at sites associated with human activity—in the gardens and environs of the Hiltaba homestead and at the Policemans Point walk at GRNP.



Eastern view from Pretty Point. The hills of the reserve form part of the sprawling Gawler Ranges, Simon Tierney © Copyright, South Australian Museum





Vascular Flora

The diversity and abundance of weeds recorded in the rocky hills was lower than expected, given the history of the areas surveyed. This may be because many weeds are annuals and the dry conditions have reduced their numbers. It may also be because these areas have poorer soils and are inaccessible to stock, which can help weeds to become established through disturbance and dispersal. Most of the weed species were found on the plains where soils and stock access are better. In many of these areas Ward's Weed (*Carrichtera annua*), and sometimes Saffron Thistle (*Carthamus lanatus*), occur in high densities. Ward's Weed is a long-established and widespread annual weed in South Australia. It has a major ecological impact on native species, but control is not currently feasible. Saffron Thistle is a common annual weed in semi-arid areas; in this survey it was observed mainly near tracks but it has the potential to spread further in open areas and rocky sites.

At Hiltaba, 28 introduced plant species were found; 13 were new records for the reserve. Only one weed is state-listed: Horehound (*Marrubium vulgare*), which is a declared pest plant under the South Australian *Natural Resources Management Act 2004*. No species are included in the current Weeds of National Significance (WoNS) listing.⁶ At GRNP, 16 introduced plant species were found, four of which are new records for the park. None are state-listed declared species, and none are included in the WoNS listing. Since some species were collected in both locations, the total number of introduced species identified was 33 (Table 7).



Senecio gawlerensis, affected by prolonged drought, Peter Lang
© Copyright, DEWNR SA

Notably absent in the area is Buffel Grass (*Cenchrus ciliaris*), a weed of high ecological impact that has expanded its range over much of arid and semi-arid South Australia in recent years. Currently there are few records of Buffel Grass from Eyre Peninsula, but it was recently collected along the Eyre Highway near Koongawa, around 100 km from Hiltaba. There is significant potential for Buffel Grass to invade the area, particularly in drainage lines and flood-out areas and in areas with high visitor traffic. Any outbreaks should be eradicated as a high priority.

⁶ <<http://www.weeds.org.au/WoNS/>>, accessed 2 December 2014.



Table 7: Weed species identified

Species	Common name	Reserve	Locations	Abundance/Comments
<i>Avena barbata</i>	Bearded Oats	Hiltaba	Mount Friday, in gorge, half way up S side. Top of cliff on S rim of ridge S of North Wall. Three sighting records (including near summit of Eurilla Hill and hill above Hiltaba homestead).	A widespread annual grass. Widely dispersed on the property and, surprisingly, found mainly on hills and ridges (as stunted plants). Often competes with native species in temperate areas but its impact here would be limited by the drier climate.
<i>Briza minor</i>	Lesser Quaking Grass	GRNP	Nukey Creek waterhole.	A widespread small annual grass. Only seen in small numbers, mostly dead.
<i>Bromus rubens</i>	Red Brome	Hiltaba	Mount Friday, in gorge, half way up S side.	A widespread small annual grass. Only seen in small numbers, mostly dead. However, can form dense areas with good rains.
<i>Bupleurum semicompositum</i>	Dwarf Hare's-ear	Hiltaba	Mount Friday, towards top end of rocky gorge on S side of mountain.	A widespread annual herb often seen on dry roadsides and well established throughout semi-arid parts of SA. The two occurrences recorded on this survey show its ability to establish in remote and relatively undisturbed areas. Only seen in low numbers and of little concern.
		GRNP	Nukey Creek waterhole.	
<i>Carrichtera annua</i>	Ward's Weed	Hiltaba	Track to Mungo Tank SE of Chiltadinna Well plus six sighting records.	A very widespread and abundant annual herb of pastoral areas in SA. Mostly dry and dead due to the dry season. Long established and prevalent in the plains country, particularly in areas impacted by stock grazing and other disturbance. Has a major ecological impact on native species, but control not currently feasible.
		GRNP	Seven sighting records.	
<i>Carthamus lanatus</i>	Saffron Thistle	Hiltaba	On track from Pretty Point to Mt Saint Mungo. Track to Mungo Tank. Old shearing shed yards area. Pretty Point, east of road. Mount Friday, in gorge, half way up S side. Mount Friday, in gorge, half way up S side. Just NW of Punkey Plain Dam. Hiltaba-Yardea road W of Barber Hill.	A common robust annual herb in semi-arid areas. Mainly observed near tracks but with the potential to spread further in open areas and rocky sites.
<i>Centaurea melitensis</i>	Maltese Thistle	Hiltaba	Saddle near ridge NW of Mt Hiltaba.	A widespread, readily dispersed, hardy annual herb. No dense infestations were encountered.
		GRNP	Saddle on S side of Nukey Bluff.	





Species	Common name	Reserve	Locations	Abundance/Comments
<i>Chenopodium murale</i>	Nettle-leaf Goosefoot	Hiltaba	Old shearing shed yards.	Large annual herb, widely distributed across SA in disturbed sites. Confined to protected and disturbed areas around buildings.
<i>Cucumis myriocarpus</i>	Prickly Paddy Melon	Hiltaba	Old shearing shed yards.	Trailing annual herb, widespread in arid and semi-arid SA. About 10 plants around sheep pens; not seen elsewhere.
<i>Dittrichia graveolens</i>	Stinkwort	Hiltaba	Track to North Wall on lower slope of range.	Almost shrubby annual herb. Usually found in high traffic areas on the sides of tracks. One localized occurrence recorded in each reserve; may spread if left unchecked.
		GRNP	Nukey Creek waterhole.	
<i>Gypsophila tubulosa</i>	Annual Chalkwort	Hiltaba	N end of Narlaby paddock on low hill on SW side of track.	A widespread small annual herb. Generally occurs in low densities. Only a few plants seen and of little concern.
<i>Hypochaeris glabra</i>	Smooth Cats-ear	Hiltaba	Mount Friday, towards top end of rocky gorge on S side. Ridge line summit on hill NW of Mt Hiltaba.	A widespread small annual herb. Generally occurs in low densities. Only a few plants seen and of little concern.
<i>Lysimachia arvensis</i>	Scarlet Pimpernel	Hiltaba	Mount Friday, in gorge, half way up S side.	A widespread small annual herb that prefers moister sites. Likely to be more prevalent in wetter seasons but only of minor significance.
		GRNP	Tributary of Nukey Creek.	
<i>Marrubium vulgare</i>	Horehound	Hiltaba	Track to Mungo Tank. Old shearing shed yards. Mount Friday, in gorge on S side. Track from Pretty Point to Mt St Mungo. Just NW of Punkey Plain Dam.	Declared Pest plant in SA under <i>Natural Resources Management Act 2004</i> . Small perennial shrub, widespread in semi-arid areas. Observed in widely scattered occurrences in low densities at Hiltaba. Only a few plants were present at the GRNP sites.
		GRNP	Yardea—Scrubby Peak Road, red sand dunes NW of Scrubby Peak. Nukey Creek waterhole.	
<i>Medicago minima</i>	Little Medic	Hiltaba	SE of Chiltadinna Well on track from Four Corners Bore. Two sighting records.	A very widespread and abundant annual herb in pastoral areas. Mostly dry and dead here due to the dry season. Long established and prevalent in the plains country, particularly in areas impacted by stock grazing and other disturbance.
<i>Neatostema apulum</i>	Hairy Sheepweed	Hiltaba	Track to Mungo Tank.	A small annual herb, well established in the Gawler Ranges. Only sparsely present.
		GRNP	Saddle on S side of Nukey Bluff.	



Species	Common name	Reserve	Locations	Abundance/Comments
<i>Nicotiana glauca</i>	Tree Tobacco	Hiltaba	Old shearing shed yards.	An invasive spindly tree-like shrub common throughout SA including semi-arid and arid areas, particularly in eastern regions. Normally associated with ephemeral creek and drainage lines and close to dams or watering holes. Only recorded at this location and could easily be removed to stop further spread.
<i>Pentameris airoides</i> subsp. <i>airoides</i>	False Hair-grass	Hiltaba	Mount Friday, towards top end of rocky gorge on S side. Three sighting records (from Eurilla Hill, and hill NW of Mt Hiltaba).	A widespread small annual grass, usually present in low densities and of little concern. Only scattered plants seen.
		GRNP	Nukey Creek waterhole Mid NE slope of ridge, 2 km ENE Yandinga Well.	
<i>Plantago coronopus</i> subsp. <i>commutata</i>	Bucks-horn Plantain	GRNP	Nukey Creek waterhole.	A common herb in the agricultural zone but outside its main range here. Only seen at this damp location and unlikely to be of concern in this arid climate.
<i>Polycarpon tetraphyllum</i>	Four-leaf Allseed	Hiltaba	Mount Friday, in gorge on S side.	A widespread small annual herb in temperate and semi-arid areas. Near the northern limit of its distribution in this area. Only encountered as a single occurrence of several small plants. May be more common in a wetter season, but suitable habitats are probably limited.
<i>Reichardia tingitana</i>	False Sowthistle	GRNP	Track from Paney Shearers Quarters to Paney HS.	A widespread annual herb in semi-arid areas of SA. Generally occurs in low densities in natural environments but can become common on roadsides due to extra run-off water, especially on sealed roads. Only a few plants seen and of little concern here.
<i>Rostraria cristata</i>	Annual Cat's Tail	Hiltaba	Track to Mungo Tank.	A widespread small annual grass of little concern. Only seen in small numbers, mostly dead.
<i>Salvia verbenaca</i> var. <i>vernalis</i>	Wild Sage	Hiltaba	Just NW of Punkey Plain Dam. Hiltaba-Yardea road, W of Barber Hill.	A widespread perennial herb. Observed in patches around Hiltaba; probably still spreading. Only scattered herbarium records GRNP and probably still spreading, but a lot more common than collections indicate.
		GRNP	Yardea-Scrubby Peak Road, red sand dunes NW of Scrubby Peak.	





Species	Common name	Reserve	Locations	Abundance/Comments
<i>Schismus barbatus</i>	Arabian Grass	Hiltaba	SE of Chiltadinna Well.	A widespread small annual grass, usually present in low densities and of little concern.
<i>Silene nocturna</i>	Mediterranean Catchfly	Hiltaba	SE of Chiltadinna Well. Summit of Eurilla Hill. Shearers quarters, at base of rainwater tank.	A widespread small annual herb of low impact. Only scattered plants seen.
<i>Sisymbrium erysimoides</i>	Smooth Mustard	Hiltaba	Mount Friday, in gorge on S side. W side of hill NW of Mt Hiltaba.	Widespread annual herb. Likely to be more common in wetter seasons but restricted in distribution, mainly in shaded sites such as under tree canopies.
<i>Sisymbrium irio</i>	London Rocket	Hiltaba	Old shearing shed yards.	Widespread annual herb. Only found around the old shearing shed yards.
<i>Sonchus oleraceus</i>	Common Sowthistle	GRNP	Saddle on S side of Nukey Bluff.	A very widespread, well established annual herb across most of SA. Usually in low densities and of no concern.
<i>Spergularia bocconeii</i>	Boccone's Sand-spurrey	GRNP	Nukey Creek waterhole.	A sparsely distributed annual or biennial herbaceous weed of sandy depressions and saline swamps. Seen only at this site within a specialized habitat. Only a few plants and of little concern.
<i>Trifolium arvense</i> var. <i>arvense</i>	Hare's-foot Clover	GRNP	Nukey Creek waterhole.	A common annual herb in the agricultural zone, but outside its main range here. Only seen at this location and unlikely to be of concern in this arid climate.
<i>Urospermum picroides</i>	False Hawkbit	Hiltaba	Mount Friday, in gorge, half way up S side. Base of rocky hill W of Mt Hiltaba.	Widespread, readily dispersed annual herb. In arid areas, it is often associated with mesic niches in rocky terrain. Occurs in low densities and is of little concern.
		GRNP	Saddle on S side of Nukey Bluff.	
<i>Vulpia myuros</i> f. <i>myuros</i>	Rat's Tail Fescue	Hiltaba	Pretty Point, ridge east of road, upper slopes. Ridge line summit on hill NW of Mt Hiltaba. Just SW of summit of Eurilla Hill.	A widespread and invasive small annual grass that may occur in high densities. Can have a significant ecological impact by competing with smaller native herbs and germinating seedlings. Well established but control not currently feasible.



Other Points of Interest

Vertebrate Fauna

Hiltaba's vertebrate fauna includes a considerable diversity of reptile species and moderate diversity of small mammals. This diversity is due to Hiltaba's geography, which places it at the intersection of the Gawler Ranges, Lake Eyre Basin and Great Victoria Desert. The diversity of the landforms in the area provides refuges, allowing arid zone species adapted to harsh, open desert landscapes to penetrate southwards. It is also a region where major ecological communities converge, with the result that species pairs that are typically found in different regions occur close together or overlap at Hiltaba.

Among the mammals, the best example of this is the co-occurrence at Hiltaba of the two small, widespread murids, Bolam's Mouse (*Pseudomys bolami*), a southern arid zone species, and Sandy Inland Mouse (*P. hermannsburgensis*), which normally replaces *P. bolami* in Central Australia. Among the reptiles, the most striking example is the occurrence at Hiltaba of three species of *Gehyra* geckos, each typical of a different ecological region: Tree Dtella (*G. variegata*) from eastern semi-arid habitats, Southern Rock Dtella (*G. lazelli*) from southern rocky landscapes, and Purplish Dtella (*G. purpurascens*) from Central Australian arid woodlands. Similarly, a pair is formed by the two stone geckos (*Diplodactylus*), with both Ranges Stone Gecko (*D. furcosus*) from the Gawler and Flinders Ranges and Desert Wood Gecko (*D. wiru*) from the Great Victoria Desert found at Hiltaba.



Inland Forest Bat (*Vespardelus baverstocki*), Nicholas Birks © Copyright, South Australian Museum

At Hiltaba, 16 species of native mammals and 36 species of reptiles were identified; seven of the mammal species and 12 of the reptile species were recorded for the first time. Most of these were expected, given that they had already been documented in nearby areas of the Gawler Ranges. In some cases, common species, notably the bats, had not been detected previously simply because there had been no surveys directed at locating them. However, one mammal species, the Chocolate Wattled Bat (*Chalinolobus morio*), was notable in that it is only the second Gawler Ranges locality in which it has been found. It confirms the occurrence of the species in an inland environment at the limit of its distribution.

Further survey work is likely to increase the already impressive list of reptiles because several relatively common species have yet to be detected in the area, and significant regions of the reserve, especially the north-east, are still under-surveyed. The list of small mammals is also likely to increase with additional bat species and at least one more native murid—Mitchell's Hopping-mouse (*Notomys mitchelli*)—that is a likely inhabitant of the sandy southern margins of Hiltaba.





Thorny Devil (*Moloch horridus*). The Thorny Devil is the only species in the genus *Moloch* © Copyright, Australian Government Department of the Environment

Invertebrate Fauna

Terrestrial invertebrates are generally poorly sampled in Australia, especially in arid and semi-arid regions. The Gawler Ranges are no exception, and little information is available on the invertebrate fauna of the region. This Bush Blitz survey was, therefore, a valuable contribution to our knowledge. The region has an excellent mix of habitat and vegetation types to support a range of invertebrate species, and the initial survey results indicate that the region is promising for further research.

Bees

Native bees were a diverse group, with 116 species recorded during the survey. The native bee biodiversity was higher than expected, with representatives of 19 genera from four of the five Australian bee families. Diversity may even be higher—because most species were only encountered in low numbers and collected during a short period (two weeks), the findings should be considered as a representative snapshot of the total bee biodiversity of the area.

One species in the family Apidae and 13 species in the family Colletidae have been recognised as putative new species. Identification of the species in the families Megachilidae and Halictidae is in progress. It is expected that further identifications and comparison with museum specimens may reveal several other undescribed taxa.



Beetles

The Buprestidae, commonly known as jewel beetles, are the eighth largest beetle family in the world, and more than 1,205 species are recognised in Australia.⁷ Existing knowledge of Buprestidae in the Gawler Ranges is scant, with only 21 species recorded previously in GRNP and none in Hiltaba Nature Reserve. The survey added five species for GRNP and nine species for Hiltaba. Although the survey focused on Buprestidae, 35 species from 11 beetle families were identified.

Diphucrania sp. Hiltaba is a new South Australian record and likely to be an undescribed taxon, as the single specimen captured does not match any of the described species of this genus previously recorded in South Australia. It is unlikely to be a described species as the genus has recently been revised. Further specimens are needed before it can be established with certainty as a new species.

⁷ Bellamy, C. L. 2002, Family Buprestidae Leach 1815, Australian Faunal Directory. Australian Biological Resources Study, Canberra <<http://www.environment.gov.au/biodiversity/abrs/online-resources/fauna/afd/taxa/BUPRESTIDAE>>, accessed 18 May 2015.

Melobasis sordida is treated as a synonym of *M. simplex* in the Australian Faunal Directory, but DNA barcodes and morphological evidence indicate that it is a distinct species. It is a common and widespread species, recorded elsewhere on Eyre Peninsula and much of southern South Australia where it is found in the foliage of a wide range of *Acacia* species.

Neospades aff. *rugiceps* is also a new South Australian record and possibly an undescribed taxon. A number of specimens were taken, all from the pinkish-purple flowers of *Radyera farragei*, a widespread arid zone plant. It is possible that this species, or at least these colour forms, are specifically associated with *Radyera*, and the pink colouration may assist with camouflage.

The specimens identified as *Castiarina pallidiventris* are intermediate between typical forms of *C. creta* and *C. pallidiventris* in colouration and patterning, but closer to *C. creta*. However, DNA barcode sequences indicate that the two species are synonymous, and the earlier name, *C. pallidiventris*, has priority.





True Bugs

True bugs are highly species-rich in Australia, with about 80% of species endemic. Centres of diversity include the wet tropics, south-east and south-west corners of the continent, and semi-arid regions in central Australia. This diversity is reflected in the survey results, which recorded 99 true bug species. The majority of these were plant bugs from the family Miridae. Most species were new records for the region, and 16 are putative new species.

Jumping Plantlice

Just over 360 species of jumping plantlice have been described for Australia, but many more undescribed species are represented in collections. Few species are recorded from South Australia, as much of the taxonomic work has concentrated on eastern Australia. Of the 47 plantlice species collected during the survey, 28 are putative new species.

One of the most surprising finds was the occurrence of *Acizzia solanicola* on native *Solanum petrophilum*. *Acizzia solanicola* was described only recently from eggplant in the Sydney region; it had not been established whether it was an introduced species of economic concern that had escaped detection or a native species that has transferred host preferences from native *Solanum* to commercial crops.⁸ This new record, together with the new species description of the closely related *A. credoensis* on the native host *S. lasiophyllum*, confirms the Australian origin of this psyllid.

⁸ Kent, D. S. & Taylor, G. S. 2010, 'Two new species of *Acizzia* Crawford (Hemiptera: Psyllidae) from the Solanaceae with a potential new economic pest of eggplant, *Solanum melongena*', *Australian Journal of Entomology*, **49**: 73–81.

Other notable discoveries include putative new species of plantlice on previously unrecorded hosts (e.g. *Eremophila*) and putative new species representing plantlice families for which there are still no described Australian native species (e.g. two species of *Anomalopsylla* from *Geijera* and one species of *Calophya* from an unknown plant host).

Spiders

Before the survey, no spiders had been recorded from Hiltaba. Comprehensive revisions of ground-dwelling spiders over recent years have uncovered a vast number of new taxa in a broad variety of spider families. This survey was no different, finding three entirely new genera and 21 putative new species of spiders.

Most of the specimens collected are spiders that hunt actively. Corinnids, hirsutiids, oxyopids, prodidomids, zodariids and zoriids are daylight



Anidiops sp. trapdoor spider, Nicholas Birks © Copyright, South Australian Museum



hunters, whereas mygalomorphs, gnaphosids, lamponids, most lycosids and miturgids are active at night and hide in burrows or under stones during the day.

Snails

Land snails form a significant component of the terrestrial invertebrate fauna, and are a key bioindicator group linked to the decomposition process in the environment. Land snails were collected from Hiltaba previously, but only *Cupedora rufofasciata* and *Sinumelon petum* were recorded. This survey represents the first detailed investigation of the area's terrestrial gastropods.

The majority of the native species identified belong to the families Pupillidae (*Pupoides adelaidae*, *Omegapilla australis*, *Gastrocopta margaretae*) and

Camaenidae (*Cupedora rufofasciata*, *Sinumelon petum*, *S. gawleri*). Along with the punctid, *Paralaoma stabilis*, and helicarionid, *Echonitor cyrtochila*, these species are commonly associated with semi-arid to arid landscapes in the south-east of South Australia.

Succinea australis (Succineidae) is a terrestrial species often associated with drainage lines and flood plains in semi-arid to arid environments in most of southern Australia.

The records for the camaenid *Sinumelon gawleri* represent a western extension of its range. Records of *Echonitor cyrtochila* are also a western extension of the species' range, but the full extent of this distribution is still poorly known compared with that of the camaenids.



A rock formation known as the Organ Pipes. The area is known for its spectacular rock formations, Marina Cheng © Copyright, University of New South Wales





Although no new land snail species were recorded in the survey, Hiltaba Nature Reserve is still a significant conservation reserve because all the local native land snail species occur there. This is in spite of the disturbed nature of much of the habitat on the reserve. The rocky hills, shrubland and woodland habitats are particularly important for the future survival of this land snail fauna.

Stygofauna

Aquifers in the area generally have a low yield and elevated salinity levels. No previous stygofauna sampling has been done on these reserves. However, wherever there is a permanent source of fresh water, groundwater fauna is usually found. A number of natural springs and soaks occur in the area, which made sampling worthwhile. In addition, several bores and wells had been constructed on Hiltaba Station as water points for cattle and sheep. Although these water points are now mainly decommissioned, they still provide opportunities to sample the groundwater.

Stygofauna was collected at Hiltaba and GRNP for the first time during this survey, and seven major invertebrate groups were found: Cyclopoida, Harpacticoida, Hydrachnidae, Microturbellaria, Oligochaeta, Ostracoda and Rotifera.

Flora

Vascular Flora

Overall, the survey recorded 212 vascular flora species at Hiltaba (43 for the first time) and 211 species at GRNP (14 for the first time). Bearing in mind the time of year, and the very dry conditions prior to the survey, it is expected that a greater range of species could be found after major rainfall.



Freshwater snails (*Isidorella hainesii*) buried in the moist mud of an otherwise dry dam, John Stanisic © Copyright, Biodiversity Assessment and Management Pty Ltd

Hiltaba Nature Reserve is significant in having extensive areas of plains that retain Bluebush (*Maireana sedifolia*) shrubland in good to excellent condition. This is in contrast to much of the plains country in GRNP, where the perennial shrub layer has often been lost completely or the Bluebush has been replaced by Blackbush (*M. pyramidata*), and substantial soil erosion has occurred.

Vegetation on the hills of both Hiltaba and GRNP is naturally more species rich, partly because of greater niche diversity. In addition, higher elevations have been largely inaccessible to stock (sheep), and the vegetation here is thus relatively intact. This situation, however, is unlikely to be maintained in the face of the high levels of goat browsing observed.

An unknown entity related to *Cryptandra tomentosa* was identified several years ago by Jürgen Kellermann, while preparing the revision of *Cryptandra*. Fresh collection of material during the



Rainbow over the chenopod plain, Jan Forrest © Copyright, South Australian Museum

Bush Blitz survey, and the opportunity to observe the taxon in the field, re-activated research on the species complex and it is hoped that a new taxon can be described in the near future. In the meantime, the phrase name *Cryptandra* sp. Hiltaba (Anon. NGPA-8100) has been coined and added to the Census of South Australian Plants (State Herbarium of South Australia 2013). The taxon is distributed throughout the Gawler Ranges and northern Eyre Peninsula, scattered on rocky hills. While no flowering specimens were collected, new fruiting material, and samples for molecular analysis, should aid in the investigation of the taxon. Research continues on the genus.

Acacia aff. *euthycarpa* has been known for a long time as a distinctive form of the highly variable *A. euthycarpa* complex. A more typical form of *A. euthycarpa* was collected on the summit of Mt Centre. However, the form highlighted here, which occurs on rocky slopes at a number of sites in the GRNP, has broad phyllodes and an extremely thin spindly and wispy habit. There are somewhat similar weeping forms from sand dunes

elsewhere on Eyre Peninsula, but the spindly habit seems to reach its extreme in the Gawler Ranges populations. Its taxonomic relationship with *Acacia euthycarpa* subsp. *oblanceolata* from Victoria also needs investigation.

The two Bush Blitz collections from GRNP identified as *Olearia floribunda* represent two extremes of what is currently treated as a single taxon. The collection from the summit of Mt Centre matches the four collections made on Hiltaba Station, all on rocky slopes and with dense woolly hairs and short, tightly clustered grey foliage. In contrast, the collection from the Pine Lodge track has longer green leaves that are only moderately hairy and exude a substantial amount of resinous material making the plant somewhat viscid, and the foliage is less tightly clustered along the stems. This form appears to be particularly common on central Eyre Peninsula. An examination of *O. floribunda* collections at the State Herbarium of South Australia indicates that some intergradation occurs between the two forms. The relationship between these forms, and with *O. brachyphylla*, warrants further investigation.





Cryptogams

Cryptogams are in general under-collected, and the species lists give only a limited representation of the range of cryptogam species likely to be found on the reserves; they are incomplete and in some cases tentative. The fact that several species, known to be common and widespread components of arid soil crusts, have appeared in this survey as new records demonstrates the incomplete sampling of previous collections. It is also probable that previous records exist in herbaria as unidentified or misidentified specimens.

The collections were made across a variety of substrates including soil, rock and wood, and largely demonstrate variations upon fairly characteristic suites of taxa that occur across the semi-arid regions of southern Australia. The collections were predominated by soil and rock crust taxa, many of which occur in highly mixed populations. Up to 10 or more taxa can sometimes be recognised growing together within areas of soil crust as small as a few square centimetres. Several cryptogam taxa occur frequently across the collections, accompanied by a changing group of less common taxa, presumably dependent on microclimatic and other microhabitat determinants. Many have the ability to survive in very dry conditions, and form soil crusts that prevent soil erosion and act as significant primary producers in some habitats.

The commonest moss across the collections is *Tortula atrovirens* (15 collections); the next most common, *Didymodon torquatus* (12).

Amongst the lichens, *Psora decipiens* (12 records) is the most frequent species, along with *Collema* spp. (9); both are very common components of soil crusts. The *Collema* records may comprise more than one species. More than 20 records were made of the genus *Xanthoparmelia*, the largest genus of Australian lichens. Many specimens are not readily identified to species level without considerable expertise and specialised chemical methods. Four *Xanthoparmelia* species were recorded with some certainty, but there are at least another four amongst the material seen.



The collection of mosses, lichens, and macrofungi for this Bush Blitz trip added an extra dimension to the survey, Erin Lake © Copyright, Australian Government Department of the Environment

A site close to the top of Mt Friday, Hiltaba Station, demonstrated a rather different suite of taxa from all other sites, these being more characteristic of wetter areas. Of the nine taxa recognised within this one collection, at least six were collected only from this locality. *Barbula subcalycina* has only been recognised in recent years, and thus many collections are inaccurately recorded in



herbarium collections—most are, however, from less arid regions. *Campylopus introflexus*, *Targionia hypophylla*, *Cladia muelleri* and *Cladia aggregata* are uncommon in arid regions, other than in such cases as this site, which consists of a relatively deep gorge, protected from the destructive western aspect and with some apparent water seepage.

It would be expected that a greater range of species could be found in this region after a major rainfall event. Certainly the number of bryophyte and fungal taxa from the two reserves would be greater if conditions had been more suitable.

Feral Goat Impacts

Browsing by goats is having a significant impact on many of the flora species, and many may already have declined as a result of browsing pressure.

Some species seem to be particularly palatable to goats, including *Acacia continua*, *Dodonaea baueri*, *Lepidosperma viscidum*, *Stenanthemum arens* and *Westringia rigida*. Two species, *Pomax umbellata* and *Senecio gawlerensis*, were seen only on rock faces out of reach from goats. *Correa backhouseana* var. *coriacea* was seen at only two locations as extremely small residual plants. *Lepidosperma viscidum* was found either dead or severely cropped. At some locations, shrubs that are not normally browsed, such as *Acacia beckleri* subsp. *beckleri* and *Melaleuca lanceolata*, had been severely affected by goats.

In addition to browsing, goats have also trampled and broken the lower branches of several species, such as the listed *Acacia iteaphylla* and a number of other shrubs in creek lines.



Pink Mulla Mulla (*Ptilotus nobilis* subsp. *nobilis*), a perennial herb found in inland Australia, Erin Lake © Copyright, Australian Government Department of the Environment

Goats are also affecting lichen species in the region, with their hard hooves destroying lichens in areas of heavy grazing. For example, two soil-inhabiting vagrant lichens of the genus *Xanthoparmelia* were found only on the drier areas of the reserve, far from watering holes and hence having lower goat numbers. In areas of heavy goat infestation, the vagrant species were absent.

This same pattern has been observed in other parts of South Australia, where vagrant lichens have disappeared under heavy grazing by domestic stock,⁹ but have recolonised areas after stock has been removed. This is part of an ongoing study at the State Herbarium of South Australia, and the Bush Blitz collections and the patterns observed will contribute to this study.

9 Rogers, R. W. 1972, 'Soil surface lichens in arid and subarid south-eastern Australia. III. The relationship between distribution and environment', *Australian Journal of Botany* 20: 301–316.





Appendix A: Species Lists

Nomenclature and taxonomic concepts used in this report are consistent with the Australian Faunal Directory, Australian Plant Name Index, Australian Plant Census, Checklist of the Lichens of Australia and its Island Territories, AusMoss, and the Catalogue of Australian Liverworts and Hornworts.

Current at January 2015



Fauna



Vertebrates

Mammals				
Family	Species	Common name	Hiltaba	GRNP
Bovidae	<i>Capra hircus</i> ^	Goat	X	
	<i>Ovis aries</i> ^	Sheep	X	
Burramyidae	<i>Cercartetus concinnus</i>	Western Pygmy-possum	X	
Canidae	<i>Vulpes vulpes</i> ^	Fox, Red Fox	X	
Dasyuridae	<i>Ningau yvonneae</i>	Southern Ningau	X	
	<i>Sminthopsis crassicaudata</i>	Fat-tailed Dunnart	■	
	<i>Sminthopsis dolichura</i>	Little Long-tailed Dunnart	X	
	<i>Sminthopsis macroura</i>	Stripe-faced Dunnart	X	
	<i>Sminthopsis murina</i>	Common Dunnart	■	
	<i>Sminthopsis ooldea</i>	Ooldea Dunnart	■	
Felidae	<i>Felis catus</i> ^	Cat	X	
Macropodidae	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	X	
	<i>Macropus robustus</i>	Common Wallaroo	X	
	<i>Macropus rufus</i>	Red Kangaroo	X	
	<i>Petrogale xanthopus xanthopus</i> ~	Yellow-footed Rock-wallaby	■	
Muridae	<i>Mus musculus</i> ^	House Mouse	X	
	<i>Pseudomys bolami</i>	Bolam's Mouse	X *	
	<i>Pseudomys hermannsburgensis</i>	Sandy Inland Mouse	X	
Tachyglossidae	<i>Tachyglossus aculeatus</i>	Short-beaked Echidna	■	
Vespertilionidae	<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	X *	
	<i>Chalinolobus morio</i>	Chocolate Wattled Bat	X *	
	<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat	X *	
	<i>Nyctophilus major</i>	Central Long-eared Bat	X *	
	<i>Vespadelus baverstocki</i>	Inland Forest Bat	X *	
	<i>Vespadelus regulus</i>	Southern Forest Bat	X *	
Vombatidae	<i>Lasiorninus latifrons</i>	Southern Hairy-nosed Wombat	X	

Key

X = Previously recorded on the reserve and found on this survey

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Birds				
Family	Species	Common name	Hiltaba	GRNP
Acanthizidae	<i>Acanthiza apicalis</i>	Inland Thornbill	■	
	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	■	
	<i>Acanthiza iredalei iredalei</i> ~	Slender-billed Thornbill	■	
	<i>Acanthiza uropygialis</i>	Chestnut-rumped Thornbill	■	
	<i>Aphelocephala leucopsis</i>	Southern Whiteface	■	
	<i>Smicronis brevirostris</i>	Weebill	■	
Accipitridae	<i>Accipiter fasciatus</i>	Brown Goshawk	■	
	<i>Aquila audax</i>	Wedge-tailed Eagle	■	
Aegothelidae	<i>Aegotheles cristatus</i>	Australian Owlet-nightjar	■	
Anatidae	<i>Anas gracilis</i>	Grey Teal	■	
	<i>Chenonetta jubata</i>	Australian Wood Duck	■	
Artamidae	<i>Artamus cinereus</i>	Black-faced Woodswallow	■	
	<i>Artamus cyanopterus</i>	Dusky Woodswallow	■	
	<i>Artamus minor</i>	Little Woodswallow	■	
	<i>Cracticus tibicen</i>	Australian Magpie	■	
	<i>Cracticus torquatus</i>	Grey Butcherbird	■	
	<i>Strepera versicolor</i>	Grey Currawong	■	
Cacatuidae	<i>Eolophus roseicapillus</i>	Galah	■	
	<i>Lophochroa leadbeateri</i> ~	Major Mitchell's Cockatoo	■	
Campephagidae	<i>Coracina maxima</i>	Ground Cuckoo-shrike	■	
	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	■	
	<i>Lalage sueurii</i>	White-winged Triller	■	
Caprimulgidae	<i>Eurostopodus argus</i>	Spotted Nightjar	■	
Casuariidae	<i>Dromaius novaehollandiae</i>	Emu	■	
Charadriidae	<i>Vanellus tricolor</i>	Banded Lapwing	■	
Climacteridae	<i>Climacteris affinis</i> ~	White-browed Treecreeper	■	
	<i>Climacteris rufa</i>	Rufous Treecreeper	■	
Columbidae	<i>Ocyphaps lophotes</i>	Crested Pigeon	■	
	<i>Phaps chalcoptera</i>	Common Bronzewing	■	
Corcoracidae	<i>Corcorax melanorhamphos</i>	White-winged Chough	■	
Corvidae	<i>Corvus bennetti</i>	Little Crow	■	
	<i>Corvus coronoides</i>	Australian Raven	■	
	<i>Corvus mellori</i>	Little Raven	■	
Cuculidae	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	■	
	<i>Cacomantis pallidus</i>	Pallid Cuckoo	■	
	<i>Chrysococcyx basalis</i>	Horsfield's Bronze-cuckoo	■	
Falconidae	<i>Falco berigora</i>	Brown Falcon	■	
	<i>Falco cenchroides</i>	Nankeen Kestrel	■	
	<i>Falco longipennis</i>	Australian Hobby	■	
	<i>Falco peregrinus</i> ~	Peregrine Falcon	■	
Hirundinidae	<i>Cheramoeca leucosterna</i>	White-backed Swallow	■	
	<i>Hirundo neoxena</i>	Welcome Swallow	■	
	<i>Petrochelidon ariel</i>	Fairy Martin	■	
	<i>Petrochelidon nigricans</i>	Tree Martin	■	



Birds				
Family	Species	Common name	Hiltaba	GRNP
Maluridae	<i>Amytornis merrotsyi</i>	Short-tailed Grasswren	■	
	<i>Malurus lamberti</i>	Variegated Fairy-wren	■	
	<i>Malurus leucopterus</i>	White-winged Fairy-wren	■	
	<i>Malurus splendens</i>	Splendid Fairy-wren	■	
Megaluridae	<i>Cincloramphus cruralis</i>	Brown Songlark	■	
Megapodiidae	<i>Leipoa ocellata</i> # ~	Malleefowl	■	
Meliphagidae	<i>Acanthagenys rufogularis</i>	Spiny-cheeked Honeyeater	■	
	<i>Anthochaera carunculata</i>	Red Wattlebird	■	
	<i>Epthianura albifrons</i>	White-fronted Chat	■	
	<i>Epthianura tricolor</i>	Crimson Chat	■	
	<i>Gavicalis virescens</i>	Singing Honeyeater	■	
	<i>Gliciphila melanops</i>	Tawny-crowned Honeyeater	■	
	<i>Manorina flavigula</i>	Yellow-throated Miner	■	
	<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater	■	
	<i>Nesoptilotis leucotis</i>	White-eared Honeyeater	■	
	<i>Ptilotula ornatus</i>	Yellow-plumed Honeyeater	■	
	<i>Ptilotula plumula</i>	Grey-fronted Honeyeater	■	
	<i>Purnella albifrons</i>	White-fronted Honeyeater	■	
Meropidae	<i>Merops ornatus</i>	Rainbow Bee-eater	■	
Monarchidae	<i>Grallina cyanoleuca</i> ~	Magpie-lark	■	
	<i>Myiagra inquieta</i> ~	Restless Flycatcher	■	
Motacillidae	<i>Anthus novaeseelandiae</i>	Australasian Pipit, Australian Pipit	■	
Nectariniidae	<i>Dicaeum hirundinaceum</i>	Mistletoebird	■	
Neosittidae	<i>Daphoenositta chrysoptera</i>	Varied Sittella	■	
Pachycephalidae	<i>Colluricincla harmonica</i>	Grey Shrike-thrush	■	
	<i>Oreoica gutturalis</i>	Crested Bellbird	■	
	<i>Pachycephala inornata</i> ~	Gilbert's Whistler	■	
	<i>Pachycephala rufiventris</i>	Rufous Whistler	■	
Pardalotidae	<i>Pardalotus striatus</i>	Striated Pardalote	■	
Petroicidae	<i>Eopsaltria griseogularis</i>	Western Yellow Robin	■	
	<i>Melanodryas cucullata</i>	Hooded Robin	■	
	<i>Microeca fascians</i>	Jacky Winter	■	
	<i>Petroica goodenovii</i>	Red-capped Robin	■	
Phalacrocoracidae	<i>Microcarbo melanoleucos</i>	Little Pied Cormorant	■	
Phasianidae	<i>Coturnix pectoralis</i>	Stubble Quail	■	
Podargidae	<i>Podargus strigoides</i>	Tawny Frogmouth	■	

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Birds				
Family	Species	Common name	Hiltaba	GRNP
Podicipedidae	<i>Poliocephalus poliocephalus</i>	Hoary-headed Grebe	■	
	<i>Tachybaptus novaehollandiae</i>	Australasian Grebe	■	
Pomatostomidae	<i>Pomatostomus superciliosus</i>	White-browed Babbler	■	
Psittacidae	<i>Barnardius zonarius</i>	Australian Ringneck	■	
	<i>Glossopsitta porphyrocephala</i>	Purple-crowned Lorikeet	■	
	<i>Melopsittacus undulatus</i>	Budgerigar	■	
	<i>Neophema splendida</i> ~	Scarlet-chested Parrot	■	
	<i>Neopsephotus bourkii</i>	Bourke's Parrot	■	
	<i>Northiella haematogaster</i>	Blue Bonnet, Bluebonnet	■	
	<i>Northiella haematogaster haematogaster</i>	Blue Bonnet, Bluebonnet	■	
	<i>Psephotus varius</i>	Mulga Parrot	■	
Rallidae	<i>Tribonyx ventralis</i>	Black-tailed Native-hen	■	
Rhipiduridae	<i>Rhipidura albiscapa</i>	Grey Fantail	■	
	<i>Rhipidura leucophrys</i>	Willie Wagtail	■	
Strigidae	<i>Ninox novaeseelandiae</i>	Southern Boobook	■	
Timaliidae	<i>Zosterops lateralis</i>	Silvereye	■	



Dwarf Bearded Dragon (*Pogona minor*), Simon Tierney © Copyright, South Australian Museum



Jan's Banded Snake (*Simoselaps bertholdi*), Nicholas Birks © Copyright, South Australian Museum

Reptiles				
Family	Species	Common name	Hiltaba	GRNP
Agamidae	<i>Ctenophorus cristatus</i>	Bicycle Lizard, Crested Dragon	X	
	<i>Ctenophorus fionni</i>	Peninsula Dragon	■	
	<i>Ctenophorus pictus</i>	Painted Dragon	■	
	<i>Moloch horridus</i>	Thorny Devil	X *	
	<i>Pogona minor</i>	Dwarf Bearded Dragon	X *	
	<i>Tympanocryptis lineata</i>	Lined Earless Dragon	X *	
Boidae	<i>Morelia spilota</i> ~	Carpet Python, Diamond Python	■	
Carphodactylidae	<i>Underwoodisaurus milii</i>	Barking Gecko, Thick-tailed Gecko	X *	



King Brown Snake, also known as Mulga Snake (*Pseudechis australis*), Nicholas Birks © Copyright, South Australian Museum

Reptiles				
Family	Species	Common name	Hiltaba	GRNP
Diplodactylidae	<i>Diplodactylus furcosus</i>	Ranges Stone Gecko	X	
	<i>Diplodactylus vittatus</i>	Eastern Stone Gecko, Wood Gecko	■	
	<i>Diplodactylus wiru</i>	Desert Wood Gecko	X *	
	<i>Lucasium damaeum</i>	Beaded Gecko	X	
	<i>Strophurus elderi</i>	Jewelled Gecko	■	
	<i>Strophurus intermedius</i>	Eastern Spiny-tailed Gecko, Southern Spiny-tailed Gecko	X	
Elapidae	<i>Brachyurophis semifasciatus</i>	Southern Shovel-nosed Snake	■	
	<i>Demansia reticulata</i>	Desert Whipsnake	X	
	<i>Parasuta nigriceps</i>	Mitchell's Short-tailed Snake	■	
	<i>Parasuta spectabilis</i>	Mallee Black-headed Snake	X *	
	<i>Pseudechis australis</i>	King Brown Snake, Mulga Snake	X *	
	<i>Pseudonaja mengdeni</i>	Gwardar, Western Brown Snake	■	
	<i>Pseudonaja modesta</i>	Ringed Brown Snake	■	
	<i>Simoselaps bertholdi</i>	Jan's Banded Snake	X *	

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Reptiles				
Family	Species	Common name	Hiltaba	GRNP
Gekkonidae	<i>Gehyra lazelli</i>	Southern Rock Dtella	X	
	<i>Gehyra purpurascens</i>	Purplish Dtella	X *	
	<i>Gehyra variegata</i>	Tree Dtella	X	
	<i>Heteronotia binoei</i>	Bynoe's Gecko	■	
Pygopodidae	<i>Delma australis</i>	Marble-faced Delma	X	
Pygopodidae	<i>Delma butleri</i>	Unbanded Delma	■	
	<i>Lialis burtonis</i>	Burton's Snake-lizard	X *	
	<i>Pygopus lepidopodus</i>	Common Scaly-foot	X *	
Scincidae	<i>Cryptoblepharus australis</i>	Inland Snake-eyed Skink	X	
	<i>Cryptoblepharus plagiocephalus</i>	Péron's Snake-eyed Skink	■	
	<i>Ctenotus atlas</i>	Southern Mallee Ctenotus	X	
	<i>Ctenotus orientalis</i>	Eastern Ctenotus	X	
	<i>Ctenotus pantherinus</i>	Leopard Ctenotus	X	
	<i>Ctenotus robustus</i>	Robust Ctenotus	X	
	<i>Ctenotus schomburgkii</i>	Barred Wedgesnout Ctenotus, Schomburgk's Ctenotus	X	
	<i>Ctenotus uber</i>	Spotted Ctenotus	■	
	<i>Cyclodomorphus melanops</i>	Spinifex Slender Blue-tongue	X	
	<i>Egernia stokesii</i>	Gidgee Skink, Stokes' Skink	■	
	<i>Egernia striolata</i>	Tree Skink	■	
	<i>Eremiascincus richardsonii</i>	Broad-banded Sand-swimmer	X	
	<i>Hemiergis millewae</i>	Triodia Earless Skink	X	
	<i>Lerista edwardsae</i>	Edwards' Slider	X	
	<i>Lerista labialis</i>	Southern Sandslider	X *	
	<i>Lerista muelleri</i>	Wood Mulch-slider	■	
	<i>Lerista terdigitata</i>	Robust Mulch Slider	X	
	<i>Lerista timida</i>	Timid Slider	X	
	<i>Menetia greyii</i>	Common Dwarf Skink, Grey's Menetia	X	
	<i>Morethia boulengeri</i>	Boulenger's Snake-eyed Skink, South-eastern Morethia Skink	X	
	<i>Morethia butleri</i>	Woodland Morethia Skink	X	
	<i>Tiliqua rugosa</i>	Bobtail, Boggi, Pinecone Lizard, Shingle-back, Sleepy Lizard, Stumpy-tail	■	
Varanidae	<i>Varanus gouldii</i>	Gould's Goanna	X	
	<i>Varanus tristis</i>	Black-headed Monitor	■	

Frogs and Toads				
Family	Species	Common name	Hiltaba	GRNP
Myobatrachidae	<i>Neobatrachus pictus</i>	Painted Frog	■	
	<i>Neobatrachus sudellae</i>	Sudell's Frog	■	



Invertebrates

Ants			
Family	Species	Hiltaba	GRNP
Formicidae	<i>Anochetus</i> sp.	X *	
	<i>Aphaenogaster</i> sp.	X *	
	<i>Calomyrmex</i> sp.	X *	
	<i>Camponotus arcuatus</i> nr	X *	
	<i>Camponotus armstrongi</i>	X *	
	<i>Camponotus cinereus amperei</i>	X *	
	<i>Camponotus claripes</i>	X *	
	<i>Camponotus consobrinus</i>	X *	
	<i>Camponotus cowlei</i>	X *	
	<i>Camponotus discors</i>	X *	
	<i>Camponotus ephippium</i>	X *	
	<i>Camponotus gouldianus</i>	X *	
	<i>Camponotus hartogi</i> nr	X *	
	<i>Camponotus loweryi</i>	X *	
	<i>Camponotus minimus</i>	X *	



Bull ants (*Myrmecia* sp.), Serena Lam © Copyright, University of New South Wales

Ants			
Family	Species	Hiltaba	GRNP
Formicidae	<i>Camponotus nigriceps</i>	X *	
	<i>Camponotus oetkeri</i>	X *	
	<i>Camponotus</i> sp. B	X *	
	<i>Camponotus</i> sp. C	X *	
	<i>Camponotus</i> sp. D	X *	
	<i>Camponotus</i> sp. 'hairy humpy'	X *	
	<i>Camponotus</i> sp. 'magpie'	X *	
	<i>Camponotus terebrans</i>	X *	
	<i>Camponotus tricoloratus</i>	X *	
	<i>Camponotus triodiae</i>	X *	
	<i>Camponotus tristis</i>	X *	
	<i>Doleromyrma</i> sp.	X *	
	<i>Iridomyrmex agilis</i>	X *	
	<i>Iridomyrmex bicknelli</i>	X *	
	<i>Iridomyrmex brunneus</i>	X *	
	<i>Iridomyrmex chasei</i>	X	
	<i>Iridomyrmex difficilis</i>	X *	
	<i>Iridomyrmex dromus</i>	X *	
	<i>Iridomyrmex lividus</i>	X *	
	<i>Iridomyrmex minor</i>	X *	
	<i>Iridomyrmex omalonotus</i>	X *	
	<i>Iridomyrmex purpureus</i>	X *	
	<i>Iridomyrmex splendens</i>	X *	
	<i>Iridomyrmex</i> spp.	X *	
	<i>Melophorus</i> sp. 'blackNtan'	X *	
	<i>Melophorus</i> spp.	X *	
	<i>Meranoplus</i> spp.	X *	
	<i>Monomorium rothsteini</i>	X *	
	<i>Monomorium</i> spp.	X *	
	<i>Myrmecia mandibularis</i>	X *	
	<i>Myrmecia picta</i>	X *	
	<i>Myrmecia urens</i> group	X *	
	<i>Notoncus</i> sp.	X *	
	<i>Ochetellus</i> sp.	X *	

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Ants			
Family	Species	Hiltaba	GRNP
Formicidae	<i>Odontomachus</i> sp.	X *	
	<i>Opisthopsis</i> sp.	X *	
	<i>Papyrius</i> sp.	X *	
	<i>Pheidole</i> sp.	X *	
	<i>Podomyrma</i> sp.	X *	
	<i>Polyrhachis</i> sp.	X *	
	<i>Ponerini</i> sp.	X *	
	<i>Rhytidoponera metallica</i>	X *	
	<i>Stigmacrus</i> sp.	X *	
	<i>Tapinoma</i> sp.	X *	
	<i>Tetramorium</i> sp.	X *	
	Unnamed gen. 01	X *	

Bees			
Family	Species	Hiltaba	GRNP
Apidae	<i>Amegilla chlorocyanea</i>	X *	
	<i>Apis mellifera</i> ^	X *	
	<i>Exoneura</i> (Brevineura) <i>ploratula</i> sp. HG03	X *	
	<i>Exoneura</i> (Brevineura) sp. HG01 black	X *	
	<i>Exoneura</i> (Brevineura) sp. HG02		X *
	<i>Exoneurella</i> n. sp.	○	
	<i>Exoneurella tridentata</i>	X *	X *
	<i>Thyreus waroonensis</i>	X *	X *
Colletidae	<i>Brachyhesma minya</i>		X *
	<i>Brachyhesma</i> n. sp. 01 (RLHG12)		○
	<i>Callohesma euxantha</i>	X *	
	<i>Callohesma flavopicta</i>	X *	
	<i>Callohesma lucida</i>	X *	
	<i>Callohesma</i> n. sp. HG02	○	
	<i>Callohesma</i> n. sp. HG03 cf. <i>flava</i>	○	
	<i>Callohesma</i> n. sp. HG08 cf. <i>nigripicta/aureopicta</i>	○	
	<i>Callohesma queenslandensis</i>		X *
	<i>Callohesma sinapipes</i>	X *	X *
	<i>Euryglossa millstreamensis</i>	X *	

Bees			
Family	Species	Hiltaba	GRNP
Colletidae	<i>Euryglossa</i> n. sp. HG07 cf. <i>nigrocaerulea</i>	○	○
	<i>Euryglossa</i> n. sp. HG18 cf. <i>skermani</i>	○	
	<i>Euryglossa salaris</i>	X *	X *
	<i>Euryglossa schomburgki</i>	X *	X *
	<i>Euryglossa</i> sp. HG09 = <i>glabra</i>	X *	
	<i>Euryglossinae</i> n. gen. n. sp. HG15	○	
	<i>Euryglossula fultoni</i>	X *	X *
	<i>Goniocolletes abdominalis</i>	X *	
	<i>Goniocolletes</i> n. sp. 01 (HG02) <i>wanni</i>	○	
	<i>Hylaeus dromedarius</i>	X *	
	<i>Hylaeus elegans</i>	X *	X *
	<i>Hylaeus honestus</i>	X *	
	<i>Hylaeus</i> (<i>Gnathoprosopis</i>) n. sp. HG11	○	
	<i>Hylaeus semirufus</i>	X *	
	<i>Hylaeus</i> (<i>Prosopisteron</i>) n. sp. HG05 = sp. 08?	○	
	<i>Hylaeus</i> (<i>Prosopisteron</i>) n. sp. HG10 cf. <i>chlorosomus</i>	○	
	<i>Hylaeus</i> (<i>Rhodohylaeus</i>) sp. HG02		X *
	<i>Hylaeus</i> (<i>Rhodohylaeus</i>) sp. HG03	X *	X *
	<i>Hylaeus</i> (<i>Rhodohylaeus</i>) sp. HG04	X *	X *
	<i>Hylaeus</i> (<i>Rhodohylaeus</i>) sp. HG09	X *	
	<i>Hylaeus</i> like sp. HG12	X *	
	<i>Hylaeus</i> like sp. HG13	X *	
	<i>Hylaeus</i> like sp. HG14	X *	
	<i>Hylaeus</i> like sp. HG15	X *	
	<i>Leioproctus</i> like sp. HG01	X *	
	<i>Leioproctus</i> like sp. HG03	X *	
	<i>Leioproctus</i> like sp. HG04	X *	X *
	<i>Leioproctus</i> like sp. HG05	X *	
	<i>Leioproctus</i> like sp. HG06	X *	
	<i>Pachyprosopis</i> (<i>Pachyprosopula</i>) <i>xanthodonta</i> HG22	X *	
	<i>Pachyprosopis</i> (<i>Parapachyprosopis</i>) n. sp. cf. <i>melanognathus</i>		○
	<i>Xanthesma</i> (<i>Chaetohesma</i>) n. sp. HG21 cf. <i>baringa</i>	○	
	<i>Xanthesma furcifera</i>	X *	X *



Bees			
Family	Species	Hiltaba	GRNP
Halictidae	<i>Homalictus (Homalictus) sp. HG02</i>	X *	
	<i>Homalictus ctenander</i>	X *	X *
	<i>Lasioglossum florale</i>	X *	X *
	<i>Lasioglossum mediopolitum</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG01</i>	X *	X *
	<i>Lasioglossum (Chilalictus) sp. HG02</i>		X *
	<i>Lasioglossum (Chilalictus) sp. HG03</i>		X *
	<i>Lasioglossum (Chilalictus) sp. HG04 red</i>		X *
	<i>Lasioglossum (Chilalictus) sp. HG05</i>	X *	X *
	<i>Lasioglossum (Chilalictus) sp. HG06</i>	X *	X *
	<i>Lasioglossum (Chilalictus) sp. HG07</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG08</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG09</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG10</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG12 lanarium like</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG13</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG14</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG15</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG16</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG17</i>		X *
	<i>Lasioglossum (Chilalictus) sp. HG18</i>		X *
	<i>Lasioglossum (Chilalictus) sp. HG19</i>		X *
	<i>Lasioglossum (Chilalictus) sp. HG20</i>		X *
	<i>Lasioglossum (Chilalictus) sp. HG21</i>	X *	X *
	<i>Lasioglossum (Chilalictus) sp. HG22</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG23</i>		X *
	<i>Lasioglossum (Chilalictus) sp. HG24</i>		X *
	<i>Lasioglossum (Chilalictus) sp. HG25</i>	X *	X *
	<i>Lasioglossum (Chilalictus) sp. HG26</i>		X *
	<i>Lasioglossum (Chilalictus) sp. HG27</i>		X *
	<i>Lasioglossum (Chilalictus) sp. HG28</i>		X *
	<i>Lasioglossum (Chilalictus) sp. HG29</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG30</i>	X *	

Bees			
Family	Species	Hiltaba	GRNP
Halictidae	<i>Lasioglossum (Chilalictus) sp. HG31</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG32</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG33</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG35</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG36</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG37</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG38</i>	X *	
	<i>Lasioglossum (Chilalictus) sp. HG39</i>	X *	
	<i>Lipotriches flavoviridis</i>	X *	X *
	<i>Lipotriches sp. HG01</i>	X *	X *
	<i>Lipotriches sp. HG02</i>	X *	
Megachilidae	<i>Lithurgus sp. HG01</i>	X *	
	<i>Megachile (Chalicodoma) like aurifrons</i>		X *
	<i>Megachile (Chalicodoma) like sp. HG01</i>	X *	
	<i>Megachile (Chalicodoma) like sp. HG02</i>	X *	X *
	<i>Megachile (Chalicodoma) like sp. HG03</i>	X *	X *
	<i>Megachile (Chalicodoma) like sp. HG04</i>	X *	
	<i>Megachile (Chalicodoma) like sp. HG05</i>	X *	X *
	<i>Megachile (Chalicodoma) like sp. HG06</i>	X *	X *
	<i>Megachile (Chalicodoma) like sp. HG07</i>	X *	
	<i>Megachile (Chalicodoma) like sp. HG08</i>	X *	
	<i>Megachile (Chalicodoma) like sp. HG09</i>	X *	
	<i>Megachile (Chalicodoma) like sp. HG10</i>	X *	X *
	<i>Megachile (Chalicodoma) like sp. HG11</i>		X *
	<i>Megachile (Chalicodoma) like sp. HG12</i>		X *

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Bees			
Family	Species	Hiltaba	GRNP
Megachilidae	<i>Megachile (Chalicodoma)</i> like sp. HG13		X *
	<i>Megachile (Chalicodoma)</i> like sp. HG14		X *
	<i>Megachile (Chalicodoma)</i> like sp. HG15	X *	X *
	<i>Megachile (Chalicodoma)</i> like sp. HG16		X *
	<i>Megachile (Chalicodoma)</i> like sp. HG17	X *	
	<i>Megachile (Chalicodoma)</i> like sp. HG18	X *	

Wasps			
Family	Species	Hiltaba	GRNP
Braconidae	<i>Phanerotoma behriae</i>	X *	
	<i>Phanerotoma n. sp. 01 Hiltaba</i>	○	
Mutillidae	Mutillidae sp.	X *	

Butterflies			
Family	Species	Hiltaba	GRNP
Lycaenidae	<i>Candalides acasta</i>		X *
	<i>Candalides cyprotus</i>		X *
	<i>Candalides hyacinthinus simplex</i>		X *
	<i>Nacaduba biocellata</i>	X *	
	<i>Ogyris amaryllis</i>	X *	
	<i>Theclinesstes albocinctus</i> (inland form)		X *
	<i>Theclinesstes miskini</i>	X *	X *
	<i>Theclinesstes serpentatus</i>	X *	
	<i>Zizina otis labradus</i>	X *	
Nymphalidae	<i>Vanessa kershawi</i>	X *	
Pieridae	<i>Eurema smilax</i>	X *	
	<i>Pieris rapae</i> ^	X *	

Moths			
Family	Species	Hiltaba	GRNP
Arctiidae	<i>Anestia ombrophanes</i>	X *	
	<i>Utetheisa pulchelloides</i>	X *	
Cossidae	<i>Archaeoses</i> sp. BB Hiltaba sp. 04	X *	
	<i>Endoxyla neuroxantha</i>	X *	
	<i>Endoxyla nubila</i>	X *	
	<i>Xyleutes</i> sp. BB Hiltaba sp. 05	X *	
Crambidae	<i>Metallarcha chrysitis</i>	X *	
	<i>Microchilo</i> sp. BB Hiltaba sp. 01	X *	
Geometridae	<i>Arhodia</i> sp. BB Hiltaba sp. 11	X *	
	<i>Dichromodes</i> sp. BB Hiltaba sp. 09	X *	
	<i>Dichromodes</i> sp. BB Hiltaba sp. 10	X *	
	<i>Dichromodes</i> sp. BB Hiltaba sp. 12	X *	
	<i>Hypobapta xenomorpha</i>	X *	
	<i>Idaea</i> sp. ANIC 03	X *	
	<i>Idaea</i> sp. BB Hiltaba sp. 06	X *	
	<i>Nearcha</i> sp. BB Hiltaba sp. 13	X *	
	<i>Rhuma thiobapta</i>	X *	
	<i>Scioglyptis canescaria</i> grp sp. BB Hiltaba sp. 16	X *	
Hypertrophidae	<i>Scopula lydia</i>	X *	
	<i>Eupselia beltera</i>	X *	
Lasiocampidae	<i>Hypertropha</i> sp. ANIC 24	X *	
	<i>Genduara subnotata</i>	X *	
Limacodidae	<i>Pernattia chlorophragma</i>	X *	
	<i>Doratifera quadriguttata</i>	X *	
Noctuidae	<i>Aedia leucomelas</i>	X *	
	<i>Agrotis infusa</i>	X *	
	<i>Agrotis munda</i>	X *	
	<i>Calathusa charactis</i>	X *	
	<i>Chlenomorpha sciogramma</i>	X *	
	<i>Chrysodeixis argentifera</i>	X *	
	<i>Comocrus behri</i>	X *	



Moths			
Family	Species	Hiltaba	GRNP
Noctuidae	<i>Diatenes igneipicta</i>	X *	
	<i>Ectopatria paurogramma</i>	X *	
	<i>Eublemma rivula</i> gp. sp. BB Hiltaba sp. 08	X *	
	<i>Eudesmeola lawsoni</i>	X *	
	<i>Helicoverpa punctigera</i>	X *	
	<i>Leucania diatrecta</i>	X *	
	<i>Lipogya exprimataria</i>	X *	
	Possibly never collected BB Hiltaba sp. 18	X *	
	<i>Praxis marmarinopa</i>	X *	
	<i>Proteuxoa</i> sp. BB Hiltaba sp. 07	X *	
	<i>Pseudozarba hemiplaca</i>	X *	
Nolidae	<i>Armactica conchidia</i>	X *	
Notodontidae	<i>Ochrogaster lunifer</i>	X *	
Oecophoridae	<i>Cryptophasa</i> sp. BB Hiltaba sp. 3	X *	
	<i>Eporycta hircopis</i>	X *	
	<i>Garrha</i> sp. ANIC 145	X *	
	Possibly never collected BB Hiltaba sp. 17	X *	
	<i>Xylorycta</i> sp. BB Hiltaba sp. 2	X *	
Pyralidae	<i>Araeopaschia</i> sp. BB Hiltaba sp. 14	X *	
	<i>Enchesphora</i> sp. BB Hiltaba sp. 15	X *	
	<i>Etiella behrii</i>	X *	
	<i>Illidgea</i> sp. ANIC 19	X *	
	<i>Salma mnesibrya</i>	X *	

Flies			
Family	Species	Hiltaba	GRNP
Asilidae	Asilidae sp.	X *	

Beetles			
Family	Species	Hiltaba	GRNP
Buprestidae	<i>Agrilus australasiae</i>		■
	<i>Agrilus kangaroo</i>		■
	<i>Anilara longicollis</i>	X *	X *
	<i>Anilara obscura</i>		X *
	Buprestidae sp.	X *	
	<i>Castiarina clancula</i>		■
	<i>Castiarina creta</i>		■
	<i>Castiarina decemmaculata</i>		■
	<i>Castiarina flavopicta</i>		■
	<i>Castiarina gibbicollis</i>		■
	<i>Castiarina ignea</i>		■
	<i>Castiarina kirbyi</i>		■
	<i>Castiarina nota</i>		■
	<i>Castiarina pallidiventrif</i>		X *
	<i>Castiarina parallela</i>		■
	<i>Castiarina parallelipennis</i>		■
	<i>Castiarina rubriventrif</i>		■
	<i>Castiarina vittata</i>		■
	<i>Chrysobothris</i> sp.	X *	
	<i>Diphucrania modesta</i>		■
	<i>Diphucrania rubicunda</i>		X *
	<i>Diphucrania</i> sp. Hiltaba	X *	
	<i>Melobasis aurocyanea</i>		■
	<i>Melobasis</i> cf. <i>obscura</i>		■
	<i>Melobasis gratiosissima</i> 'summer'	X *	
	<i>Melobasis nobilitata</i>		■
	<i>Melobasis sordida</i>	X *	
	<i>Merimna atrata</i>	X *	
	<i>Neocuris dichroa</i>	X *	
	<i>Neospades</i> aff. <i>rugiceps</i>	X *	
	<i>Stanwatkinsius lindi</i>		■
	<i>Temognatha duponti</i>		X *
	<i>Temognatha fusca</i>		■
	<i>Temognatha heros</i>		■

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Beetles			
Family	Species	Hiltaba	GRNP
Carabidae	<i>Anomotarus</i> sp. 01	X *	
	<i>Anomotarus</i> sp. 02	X *	
	<i>Arthropterus</i> sp.	X *	
	<i>Carabidae</i> sp. 01	X *	
	<i>Carabidae</i> sp. 05	X *	
	<i>Carabidae</i> sp. 06	X *	
	<i>Carenum</i> sp. 01	X *	
	<i>Carenum</i> sp. 02	X *	
	<i>Lebiinae</i> sp. 04	X *	
	<i>Lebiinae</i> sp. 07	X *	
	<i>Scopodes sigillatus</i>	X *	
Cerambycidae	Cerambycidae sp.	X *	
Cleridae	<i>Orthrius</i> sp. 04	X *	
	<i>Phlogistus</i> sp. 01	X *	
	<i>Phlogistus</i> sp. 02	X *	
Coccinellidae	Coccinellidae sp.	X *	
Curculionidae	Curculionidae sp.	X *	
Elateridae	Elateridae sp.	X *	
Meloidae	<i>Pulchrazonitis splendida</i>	X *	
Scarabaeidae	Scarabaeidae sp.	X *	
Tenebrionidae	Tenebrionidae sp.	X *	
Trogidae	Trogidae sp.	X *	

Net-winged Insects			
Family	Species	Hiltaba	GRNP
Ascalaphidae	Ascalaphidae sp.	X *	
Chrysopidae	Chrysopidae sp.	X *	
Mantispidae	Mantispidae sp.	X *	
Myrmeleontidae	Myrmeleontidae sp.	X *	

True Bugs			
Family	Species	Hiltaba	GRNP
Acanthosomatidae	<i>Amphaces minor</i>	X *	X *
	<i>Eupolemus maculicollis</i>		X *
Alydidae	<i>Melanacanthus scutellaris</i> ^	X *	
	<i>Melanacanthus</i> sp. 01 MSP088	X *	
	<i>Melanacanthus</i> sp. 02 poss. <i>marginoguttatus</i> MSP089	X *	
Coreidea	<i>Mictis profana</i>	X *	
Cydnidae	Cydnidae sp. 01 MSP011	X *	
	Cydnidae sp. 02 MSP012	X *	
	<i>Macroscytus</i> sp. MSP010	X *	



Giant carabid beetle, Nicholas Birks © Copyright, South Australia Museum



True Bugs			
Family	Species	Hilataba	GRNP
Geocoridae	<i>Germalus</i> sp. 01 MSP080	X *	X *
	<i>Germalus</i> sp. 02 MSP081	X *	X *
Lygaeidae	<i>Crompus opacus</i>		X *
	<i>Nysius vinitor</i> ^	X *	X
Miridae	<i>Ausejanus</i> sp. MSP047	X *	
	Austromirini "Bilbonotus" n. sp. MSP045	○	
	Austromirini "Tumidocoris" n. sp. MSP038	○	
	Austromiris n. sp. 01 MSP064		○
	Austromiris n. sp. 01 MSP065	○	
	Austromiris n. sp. 01 MSP066		○
	Austromiris n. sp. 01 MSP067	○	
	Austromiris n. sp. 01 MSP068		○
	Austromiris n. sp. 01 MSP069	○	
	<i>Campylomma</i> sp. MSP023	X *	X *
	<i>Coridromius chenopoderis</i>		X *
	<i>Creontiades</i> sp. MSP044		X *
	<i>Exocarpocoris tantulus</i>	X *	
	Kirkaldyella n. sp. MSP037		○
	<i>Lattinova jacki</i>	X *	
	Mirini "Dingomiris" n. sp. MSP046		○
	nr. <i>Campylomma</i> sp. MSP025	X *	X *
	Orthotylinae n. sp. 2 MSP036		○
	Orthotylinae n. sp. 3 MSP039		○
	Orthotylus n. sp. 01 MSP040		○

True Bugs			
Family	Species	Hilataba	GRNP
Miridae	Orthotylus n. sp. 01 MSP041		○
	Orthotylus n. sp. 01 MSP042	○	
	Orthotylus n. sp. 01 MSP043		○
	<i>Phylinae</i> sp. 01 MSP024	X *	
	<i>Phylinae</i> sp. 02 MSP026		X *
	<i>Phylinae</i> sp. 03 MSP027		X *
	<i>Phylinae</i> sp. 04 MSP028	X *	
	<i>Phylinae</i> sp. 05 MSP030	X *	
	<i>Phylinae</i> sp. 06 MSP029	X *	
	<i>Phylinae</i> sp. 07 MSP048	X *	X *
	<i>Phylinae</i> sp. 08 MSP049	X *	
	<i>Phylinae</i> sp. 09 MSP050		X *
	<i>Phylinae</i> sp. 10 MSP051	X *	
Pentatomidae	<i>Phylinae</i> sp. 11 MSP052		X *
	<i>Phylinae</i> sp. 12 MSP053	X *	
	<i>Phylinae</i> sp. 13 MSP054	X *	
	Pachygronthidae <i>Stenophyella macreta</i>	X *	
	<i>Agonoscelis rutila</i>	X *	X *
	<i>Alcaeus lignicolor</i>	■	
	<i>Amphidexius suspensus</i>	X *	
	<i>Aplerotus maculatus</i>	X *	
	<i>Boocoris bufiformis</i>	X *	
	<i>Cermatulus nasalis</i>		X
	<i>Cuspicona</i> sp. MSP071		X *
	<i>Eremophilacoris aridiculus</i>		X *
	<i>Everardia picta</i>	X *	
	<i>Kapunda trougtoni</i>	■	
	<i>Kitsoniicoris rubrocoriosa</i>	■	
	<i>Macrocarenoides scutellatus</i>	X *	
	<i>Neagenor spinosus</i>	X	
	<i>Niarius ooldeae</i>	■	
	<i>Ocirrhoe</i> sp. 01 MSP004	X *	
	<i>Ocirrhoe</i> sp. 02 MSP003		X *

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True Bugs			
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Pentatomidae	<i>Oechalia schellenbergii</i>	X	
	<i>Paramenestheus nercivus</i>	■	
	<i>Poecilometis apicalis</i>	■	
	<i>Poecilometis extraneus</i>		X *
	<i>Poecilometis fuscescens</i>	X *	X
	<i>Poecilometis vermiculatus</i>	X *	
	<i>Poecilotoma callosa</i>	X *	
	<i>Poecilotoma grandicornis</i>		X *
	<i>Pseudaelia rectimargo</i>	■	
	<i>Trachyops australis</i>	■	
Piesmatidae	<i>Mcateella esperancensis</i>	X *	X *
	<i>Mcateella interioris</i>	X *	
Reduviidae	<i>Aradellus fulvus</i>	■	
	<i>Australocleptes</i> sp. MSP 062	X *	
	Harpactorinae sp. 01 MSP058		X *
	Harpactorinae sp. 02 MSP059	X *	
	Harpactorinae sp. 03 MSP060	X *	
	Harpactorinae sp. 04 MSP031	X *	X *
	Harpactorinae sp. 05 MSP032		X *
	<i>Oncocephalus</i> sp. 01 MSP055	X *	
	<i>Oncocephalus</i> sp. 02 MSP056	X *	
	<i>Oncocephalus</i> sp. 03 MSP057	X *	
Rhopalidae	<i>Peirates</i> sp. 01 MSP061	X *	
	<i>Peirates</i> sp. 02 MSP063	X *	
	<i>Ptilocnemus pallidus</i>	■	
Rhopalidae	<i>Leptocoris</i> sp. poss. <i>mitellatus</i> MSP072	X *	X *
Rhyparochromidae	<i>Dieuches</i> sp. MSP078	X *	
	<i>Lethaeini</i> sp. 01 MSP075		X *
	<i>Lethaeini</i> sp. 02 MSP076	X *	
	<i>Myodochini</i> sp. MSP077		X *
	<i>Udeocoris</i> sp. MSP073	X *	



Remko Leijis using a weighted plankton net to sample the bores and wells of Hiltaba Nature Reserve, Jan Forrest © Copyright, South Australian Museum

True Bugs			
Family	Species	Hiltaba	GRNP
Scutelleridae	<i>Choerocoris paganus</i>	X *	
	<i>Choerocoris variegatus</i>	X *	
	<i>Coleotichus costatus</i>	X	
Thaumastocoridae	<i>Thaumastocoris petilus</i>	X *	X *
Tingidae	<i>Eritingis koebeli</i>		X *
	<i>Eritingis</i> n. sp. 01 MSP096	X *	X *
	<i>Eritingis</i> n. sp. 02 MSP097		X *
	<i>Malandiola semota</i>		X *
	<i>Nethersia maculosa</i> or near MSP095	X *	
	<i>Physatocheila objicis</i>		X *
Veliidae	<i>Urentius sarinae</i>	X *	
	<i>Microvelia</i> (<i>Austromicrovelia</i>) sp. MSP082		X *



Jumping Plantlice			
Family	Species	Hiltaba	GRNP
Calophyidae	Calophya n. sp. 01 Hiltaba	○	
Psyllidae	Acizzia n. sp. 01 Hiltaba	○	
	Acizzia n. sp. 02 Hiltaba	○	○
	Acizzia n. sp. 03 Hiltaba	○	
	Acizzia n. sp. 04 Hiltaba	○	
	Acizzia n. sp. 05 Hiltaba	○	
	Acizzia n. sp. 06 Hiltaba		○
	Acizzia n. sp. 07 Hiltaba	○	
	Acizzia n. sp. 08 Hiltaba	○	
	Acizzia n. sp. 09 Hiltaba	○	○
	Acizzia n. sp. 10 Hiltaba	○	○
	Acizzia n. sp. 11 Hiltaba	○	○
	Acizzia n. sp. 12 Hiltaba	○	
	Acizzia n. sp. 13 Hiltaba		○
	Acizzia n. sp. 14 Hiltaba	○	
	Acizzia n. sp. 15 Hiltaba	○	
	Acizzia n. sp. 16 Hiltaba	○	
	Acizzia n. sp. 17 Hiltaba	○	
	Acizzia n. sp. 18 Hiltaba	○	
	Acizzia n. sp. 19 Hiltaba	○	○
	<i>Acizzia solanicola</i>	X *	
	<i>Anoeconeossa</i> sp. 01 Hiltaba	X *	X *
	<i>Anoeconeossa</i> sp. 02 Hiltaba	X *	
	<i>Anoeconeossa</i> sp. 03 Hiltaba	X *	
	Anomalopsylla n. sp. 01 Hiltaba	○	
	Anomalopsylla n. sp. 02 Hiltaba	○	
	<i>Blastopsylla</i> sp. 01 Hiltaba	X *	X *
	<i>Blastopsylla</i> sp. 02 Hiltaba	X *	
	<i>Blastopsylla</i> sp. 03 Hiltaba	X *	
	<i>Creiis</i> sp. 01 Hiltaba	X *	
	<i>Creiis</i> sp. 02 Hiltaba	X *	
	<i>Creiis</i> sp. 03 Hiltaba	X *	
	<i>Creiis</i> sp. 04 Hiltaba	X *	
	<i>Creiis</i> sp. 05 Hiltaba	X *	

Jumping Plantlice			
Family	Species	Hiltaba	GRNP
Psyllidae	<i>Ctenarytaina</i> sp. 01 Hiltaba	X *	
	<i>Glycaspis</i> sp. 01 Hiltaba	X *	X *
	<i>Glycaspis</i> sp. 02 Hiltaba	X *	
	<i>Phyllolyma</i> sp. 01 Hiltaba	X *	
	<i>Platyobria</i> sp. 01 Hiltaba	X *	X *
	<i>Platyobria</i> sp. 02 Hiltaba	X *	
Triozidae	<i>Casuarinicola mucronalatus</i>	X *	
	Trioza n. sp. 01 Hiltaba	○	
	Trioza n. sp. 02 Hiltaba		○
	Trioza n. sp. 03 Hiltaba	○	
	Trioza n. sp. 04 Hiltaba		○
	Triozidae n. gen. 1 n. sp. 01 Hiltaba	○	
	Triozidae n. gen. 1 n. sp. 02 Hiltaba	○	

Thrips			
Family	Species	Hiltaba	GRNP
Aeolothripidae	Aeolothripidae sp.	X *	
Phlaeothripidae	Phlaeothripidae sp.	X *	
	Phlaeothripidae sp.		X *
	Phlaeothripinae sp.	X *	
	Phlaeothripinae sp.		X *
Thripidae	Thripinae sp.	X *	

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Cockroaches and Termites			
Family	Species	Hiltaba	GRNP
[Infraorder Isoptera]	Isoptera sp.	X *	
[Order Blattodea]	Blattodea sp.	X *	

Mantises			
Family	Species	Hiltaba	GRNP
[Order Mantodea]	Mantodea sp.	X *	

Grasshoppers and Crickets			
Family	Species	Hiltaba	GRNP
Acrididae	<i>Apotropis</i> sp.	X *	
	<i>Austracris</i> sp.	X *	
	<i>Bufoania</i> sp.	X *	
	<i>Chortoicetes</i> sp.	X *	
	<i>Goniaea</i> sp.	X *	
	<i>Macrolopholia</i> sp.	X *	
	<i>Macrotona</i> sp.	X *	
	<i>Qualetta</i> sp.	X *	X *
	<i>Rusurplia</i> sp.	X *	
	<i>Stropis</i> sp.	X *	
	<i>Typaya</i> sp.	X *	
	<i>Urnisa</i> sp.	X *	
Gryllacrididae	Gryllacrididae sp.	X *	

Earwigs			
Family	Species	Hiltaba	GRNP
[Order Dermaptera]	Dermaptera sp.		X *

Damselflies and Dragonflies			
Family	Species	Hiltaba	GRNP
Coenagrionidae	<i>Ischnura aurora</i>	X *	
Hemicorduliidae	<i>Hemicordulia tau</i>	X *	
Lestidae	<i>Austrolestes annulosus</i>	X *	
Libellulidae	<i>Orthetrum caledonicum</i>	X *	
	<i>Pantala flavescens</i>	X *	

Springtails			
Family	Species	Hiltaba	GRNP
Bourletiellidae	<i>Bourletiella</i> sp. 01	X *	
	<i>Bourletiella</i> sp. 02	X *	
	<i>Bourletiella</i> sp. 03	X *	X *
	<i>Corynephorina quadrimaculata</i>	X *	
	<i>Corynephorina</i> sp. 01	X *	
	<i>Corynephorina</i> sp. 02	X *	
Brachystomellidae	<i>Rastriopes</i> sp. 01	X *	
	<i>Brachystomella</i> sp. 01	X *	
	<i>Brachystomella</i> sp. 02	X *	
	<i>Setanodosa</i> sp. 01	X *	
Entomobryidae	<i>Setanodosa</i> sp. 02	X *	
	<i>Drepanura</i> cf. <i>cinquilineata</i>	X *	
	<i>Drepanura</i> sp. 01	X *	
	<i>Drepanura</i> sp. 02	X *	
	<i>Drepanura</i> sp. 03	X *	
	<i>Entomobrya</i> sp. 01	X *	
	<i>Lepidosira</i> sp. 01	X *	
	<i>Lepidosira</i> sp. 02	X *	
Hypogastruridae	<i>Hypogastrura</i> cf. <i>manubrialis</i>	X *	
	<i>Xenylla</i> sp. 01	X *	X *
	<i>Xenylla</i> sp. 02	X *	X *
	<i>Xenylla</i> sp. 03	X *	
Isotomidae	<i>Folsomia</i> sp.	X *	
	<i>Folsomides sexophthalma</i>	X *	X *
	<i>Folsomides</i> sp. 01	X *	X *
Katiannidae	<i>Katianna</i> sp. 01	X *	
	<i>Katianna</i> sp. 02	X *	
Sminthuridae	<i>Sphaeridia</i> sp. 01	X *	



Spiders			
Family	Species	Hiltaba	GRNP
Barychelidae	<i>Synothele meadhunteri</i>	X *	
Corinnidae	Corinnidae IF n. gen. n. sp. 04	○	
	Poecilipha Simon, 1896 n. sp. 15	○	
	<i>Supunna picta</i>	X *	
Dipluridae	Cethegus n. sp. 07	○	
Filistatidae	<i>Wandella stuartensis</i>	X *	
Gnaphosidae	Eilica n. sp. 02	○	
Hersiliidae	<i>Tamopsis facialis</i>	X *	
	<i>Tamopsis pseudocircumvidens</i>	X *	
Idiopidae	<i>Anidiops</i> sp.	X *	
	Blakistonia n. sp. 15	○	
Lamponidae	<i>Lampona cylindrata</i>	X *	
	<i>Lamponata daviesae</i>	X *	
	<i>Lamponina asperrima</i>	X *	
	<i>Notsodipus muckera</i>	X *	
Lycosidae	Lycosidae n. gen. (ariadnae group) n. sp. 17	○	
	Lycosidae n. gen. (australicola group) n. sp. 16	○	
	<i>Tasmanicosa leuckartii</i>	X *	
	<i>Tasmanicosa ramosa</i>	X *	
Miturgidae	Miturga n. sp. 21	○	
Nemesiidae	Aname n. sp. 08	○	
	Aname n. sp. 14	○	
	<i>Aname turrigera</i>	X *	
	Kwonkan n. sp. 03	○	
Oonopidae	Opopaea stevensi n. sp. SAMA NN28001 PBI_OON 23699	○	

Spiders			
Family	Species	Hiltaba	GRNP
Oxyopidae	Oxyopes cf. amoenus n. sp. 01	○	
	Oxyopes cf. variabilis n. sp. 06	○	
	Oxyopes n. sp. 13	○	
Prodidomidae	<i>Molycra quadricauda</i>	X *	
	<i>Myandra cambridgei</i>	X *	
Zodariidae	<i>Cavasteron crassicalcar</i>	X *	
	Cavasteron n. sp. 12	○	
	<i>Habronestes bradleyi</i>	X *	
	<i>Habronestes grahami</i>	X *	
	<i>Habronestes longiconductor</i>	X *	
	Habronestes n. sp. 18	○	
	Neostorena n. sp. 10	○	
	<i>Notasteron lawlessi</i>	X *	
Zoridae	<i>Pentasteron intermedium</i>	X *	
	Argoctenus n. sp. 05	○	
	Argoctenus n. sp. 20	○	
	Odo n. sp. 09	○	



Aname sp. wishbone spider, Nicholas Birks © Copyright, South Australian Museum

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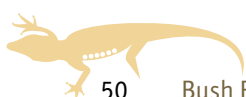
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Snails and Slugs			
Family	Species	Hiltaba	GRNP
Camaenidae	<i>Cupedora rufofasciata</i>	X	X
	<i>Sinumelon gawleri</i>	X *	
	<i>Sinumelon petum</i>	X	X
Helicarionidae	<i>Echonitor cyrtochila</i>	X *	X *
Helicidae	<i>Theba pisana</i> ^	X *	X *
Hygromiidae	<i>Ceruella virgata</i> ^	X *	
Planorbidae	<i>Isidorella newcombi</i>	X *	
Punctidae	<i>Paralaoma stabilis</i>	X *	X *
Pupillidae	<i>Gastrocopta margaretae</i>	X *	
	<i>Omegapilla australis</i>	X *	
	<i>Pupoides adelaidae</i>	X *	X *
Succineidae	<i>Succinea australis</i>	X *	



Sinumelon petum were widespread across the station's woodland and rocky habitats, John Stanisc © Copyright, Biodiversity Assessment and Management Pty Ltd

Bivalves			
Family	Species	Hiltaba	GRNP
Corbiculidae	<i>Corbicula australis</i>	X *	
Hyriidae	Hyriidae sp.	X *	

Stygofauna			
Family	Species	Hiltaba	GRNP
[Class Harpacticoida]	Harpacticoida sp.		X *
[Class Oligochaeta]	Oligochaeta sp.	X *	
[Class Ostracoda]	Ostracoda sp.		X *
[Class Turbellaria]	Microturbellaria sp.	X *	
[Order Cyclopoida]	Cyclopoida sp.		X *
[Phylum Rotifera]	Rotifera sp.	X *	
Hydrachnidae	Hydrachnidae sp.		X *



Flora



Mallee Fringe-Lily (*Thysanotus baueri*), Peter Lang © Copyright, DEWNR SA

Flowering Plants			
Family	Species	Hiltaba	GRNP
Aizoaceae	<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>	X	■
	<i>Mesembryanthemum crystallinum</i> ^	■	■
	<i>Mesembryanthemum nodiflorum</i> ^	■	■
	<i>Sarcozona praecox</i>	■	X
	<i>Tetragonia eremaea</i>	■	■
Amaranthaceae	<i>Amaranthus cuspidifolius</i>		■
	<i>Hemichroa diandra</i>		■
	<i>Ptilotus decipiens</i>	■	
	<i>Ptilotus gaudichaudii</i> subsp. <i>gaudichaudii</i>	■	
	<i>Ptilotus nobilis</i> subsp. <i>nobilis</i>	X	■
	<i>Ptilotus obovatus</i>	X	
	<i>Ptilotus seminudus</i>	X	X
	<i>Ptilotus sessilifolius</i>	X	X
	<i>Ptilotus spathulatus</i>	■	X

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Flowering Plants			
Family	Species	Hiltaba	GRNP
Apiaceae	<i>Apium annuum</i>	■	■
	<i>Apium prostratum</i> var. <i>filiforme</i>		■
	<i>Bupleurum semicompositum</i> ^	X	X
	<i>Conium maculatum</i> ^		■
	<i>Daucus glochidiatus</i>	X	X
Apocynaceae	<i>Alyxia buxifolia</i>	X	X
	<i>Rhyncharhena linearis</i>		■
	<i>Sarcostemma viminale</i> subsp. <i>australe</i>		■
Araceae	<i>Lemna disperma</i>	■	
Araliaceae	<i>Hydrocotyle callicarpa</i>	■	■
	<i>Hydrocotyle capillaris</i>		■
	<i>Hydrocotyle foveolata</i>	■	
	<i>Hydrocotyle medicaginoides</i>		■
	<i>Hydrocotyle pilifera</i> var. <i>glabrata</i>	■	■
	<i>Hydrocotyle rugulosa</i>		■
	<i>Hydrocotyle trachycarpa</i>		■
	<i>Trachymene ceratocarpa</i>	■	■
	<i>Trachymene cyanopetala</i>	■	■
	<i>Trachymene ornata</i>	■	■
	<i>Trachymene pilosa</i>		■
Asparagaceae	<i>Arthropodium minus</i>		■
	<i>Lomandra collina</i>	X	X
	<i>Lomandra effusa</i>	X *	X
	<i>Lomandra leucocephala</i> subsp. <i>robusta</i>		X
	<i>Thysanotus baueri</i>	X	X
	<i>Thysanotus exiliflorus</i>		■
	<i>Thysanotus patersonii</i>	X	■
Asphodelaceae	<i>Bulbine semibarbata</i>	■	X
Asteraceae	<i>Actinobole uliginosum</i>	■	■
	<i>Angianthus tomentosus</i>	X	X
	<i>Arctotheca calendula</i> ^		■
	<i>Asteridea athrixioides</i>		■
	<i>Blennospora drummondii</i>	■	■
	<i>Brachyscome ciliaris</i> var. <i>ciliaris</i>		■
	<i>Brachyscome lineariloba</i>	■	■
	<i>Brachyscome perpusilla</i>	■	■
	<i>Brachyscome trachycarpa</i>	■	■
	<i>Calotis cymbacantha</i>		■
	<i>Calotis hispidula</i>	■	X
	<i>Calotis multicaulis</i>	■	
	<i>Carthamus lanatus</i> ^	X	■



Flowering Plants			
Family	Species	Hiltaba	GRNP
Asteraceae	<i>Cassinia laevis</i>	X	■
	<i>Centaurea melitensis</i> ^	X	X
	<i>Ceratogyne obionoides</i> ~		■
	<i>Chrysocephalum apiculatum</i>	X	X
	<i>Chrysocephalum pterochaetum</i>	X *	
	<i>Chrysocephalum semipapposum</i>	X	X
	<i>Chthonocephalus pseudevax</i>	■	■
	<i>Cotula australis</i>	■	
	<i>Cratystylis conocephala</i>	X	■
	<i>Dittrichia graveolens</i> ^	X *	X *
	<i>Elachanthus pusillus</i>		■
	<i>Eriochlamys behrii</i>		■
	<i>Euchiton sphaericus</i>	X	■
	<i>Gratwickia monochaeta</i> ~		■
	<i>Helichrysum leucopsidium</i>	■	X
	<i>Hyalosperma demissum</i>	■	■
	<i>Hyalosperma glutinosum</i> subsp. <i>glutinosum</i>	■	■
	<i>Hyalosperma semisterile</i>	■	■
	<i>Hypochaeris glabra</i> ^	X	■
	<i>Hypochaeris radicata</i> ^		■
	<i>Isoetopsis graminifolia</i>	■	■
	<i>Leiocarpa semicalva</i> subsp. <i>semicalva</i>	■	X
	<i>Leiocarpa websteri</i>		■
	<i>Leontodon rhagadioloides</i> ^	■	■
	<i>Leptorhynchos scaber</i> ~		■
	<i>Leptorhynchos tetrachaetus</i>	■	
	<i>Leptorhynchos waitzia</i>	■	■
	<i>Microseris lanceolata</i>	■	■
	<i>Millotia macrocarpa</i>		■
	<i>Millotia muelleri</i>	■	■
	<i>Millotia myosotidifolia</i>	■	■
	<i>Millotia perpusilla</i>	■	■
	<i>Millotia tenuifolia</i> var. <i>tenuifolia</i>	■	■
	<i>Minuria cunninghamii</i>	X	
	<i>Minuria leptophylla</i>	■	■
	<i>Olearia calcarea</i>	X	X
	<i>Olearia calcarea</i> X <i>Olearia muelleri</i>		X *

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Flowering Plants			
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Asteraceae	<i>Olearia cf. floribunda</i>		X *
	<i>Olearia ciliata</i>		■
	<i>Olearia decurrens</i>	X	X
	<i>Olearia exiguifolia</i>		X *
	<i>Olearia floribunda</i>	X	
	<i>Olearia lepidophylla</i>		X
	<i>Olearia magniflora</i>		■
	<i>Olearia muelleri</i>	X	X
	<i>Olearia pimeleoides</i>	■	X
	<i>Ozothamnus decurrens</i>		■
	<i>Ozothamnus retusus</i>		■
	<i>Podolepis canescens</i>		■
	<i>Podolepis capillaris</i>	X	X
	<i>Podolepis jaceoides</i> ~	■	■
	<i>Podolepis tepperi</i>	■	■
	<i>Podotroche angustifolia</i>	■	X
	<i>Pogonolepis muelleriana</i>	■	■
	<i>Pycnosorus pleiocephalus</i>	■	■
	<i>Reichardia tingitana</i> ^		X
	<i>Rhodanthe corymbiflora</i>		■
	<i>Rhodanthe floribunda</i>		■
	<i>Rhodanthe laevis</i>		■
	<i>Rhodanthe moschata</i>		■
	<i>Rhodanthe oppositifolia</i> subsp. <i>oppositifolia</i> ~	■	■
	<i>Rhodanthe polygalifolia</i>	X	X
	<i>Rhodanthe pygmaea</i>	■	■
	<i>Rhodanthe stricta</i>	■	■
	<i>Rhodanthe stuartiana</i>	■	■
	<i>Senecio dolichocephalus</i>		■
	<i>Senecio gawlerensis</i>	X	■
	<i>Senecio glossanthus</i>	■	■
	<i>Senecio magnificus</i>		X
	<i>Senecio quadridentatus</i>		X
	<i>Senecio spanomerus</i>		■
	<i>Sigesbeckia australiensis</i>	X	■
	<i>Siloxerus multiflorus</i>	■	■
	<i>Sonchus oleraceus</i> ^	■	X
	<i>Trichanthodium skirrophorum</i>	■	■
	<i>Urospermum picroides</i> ^	X	X
	<i>Vittadinia australasica</i> var. <i>australasica</i>		X *
	<i>Vittadinia cervicalis</i> var. <i>cervicalis</i>		■
	<i>Vittadinia cuneata</i> var. <i>cuneata</i>		■



Flowering Plants			
Family	Species	Hiltaba	GRNP
Asteraceae	<i>Vittadinia dissecta</i> var. <i>hirta</i>		■
	<i>Vittadinia gracilis</i>	X	X
	<i>Vittadinia megacephala</i>		■
	<i>Waitzia acuminata</i> var. <i>acuminata</i>		■
	<i>Xerochrysum bracteatum</i>		X *
Boraginaceae	<i>Buglossoides arvensis</i> ^		■
	<i>Echium plantagineum</i> ^	■	■
	<i>Embadium uncinatum</i>	■	■
	<i>Halgania cyanea</i>	X	X
	<i>Heliotropium asperrimum</i>	■	X
	<i>Heliotropium europaeum</i>		■
	<i>Neatostema apulum</i> ^	X	X
	<i>Omphalolappula concava</i>	■	■
	<i>Plagiobothrys plurisepaleus</i>	■	■
Brassicaceae	<i>Alyssum linifolium</i> ^	■	■
	<i>Arabidella nasturtium</i>		■
	<i>Arabidella trisecta</i>	■	■
	<i>Brassica tournefortii</i> ^		■
	<i>Carrichtera annua</i> ^	X	X
	<i>Geococcus pusillus</i>		■
	<i>Harmsiodoxa brevipes</i> var. <i>brevipes</i>	■	
	<i>Lepidium oxytrichum</i>	■	
	<i>Lepidium papillosum</i>	■	
	<i>Lepidium rotundum</i>		■
	<i>Menkea australis</i>	■	■
	<i>Microlepidium pilosulum</i> ~		■
	<i>Sisymbrium erysimoides</i> ^	X	■
	<i>Sisymbrium irio</i> ^	X *	■
	<i>Sisymbrium orientale</i> ^		■
	<i>Stenopetalum lineare</i>	■	■
	<i>Stenopetalum sphaerocarpum</i>	■	■

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Acacia aff. *toondulya*, one of two trees from just south-east of feeder tank, Peter Lang © Copyright, DEWNR SA

Flowering Plants			
Family	Species	Hiltaba	GRNP
Campanulaceae	<i>Isotoma petraea</i>	X	X
	<i>Lobelia cleistogamoides</i> ~		■
	<i>Wahlenbergia communis</i>	■	■
	<i>Wahlenbergia gracilentia</i>	■	X
	<i>Wahlenbergia luteola</i>		■
	<i>Wahlenbergia preissii</i>		■
	<i>Wahlenbergia stricta</i> subsp. <i>stricta</i>	X	X
	<i>Wahlenbergia tumidifructa</i>	■	■
Caryophyllaceae	<i>Cerastium glomeratum</i> ^	■	
	<i>Gypsophila tubulosa</i> ^	X	
	<i>Herniaria cinerea</i> ^	■	■
	<i>Polycarpon tetraphyllum</i> ^	X *	■
	<i>Sagina apetala</i> ~		■
	<i>Sagina maritima</i>	■	
	<i>Scleranthus pungens</i>	X	X
	<i>Silene apetala</i> ^	■	■
	<i>Silene gallica</i> var. <i>gallica</i> ^	■	■
	<i>Silene nocturna</i> ^	X	■
	<i>Silene tridentata</i> ^		■
	<i>Spergularia bocconeii</i> ^		X *
	<i>Spergularia brevifolia</i>	■	
	<i>Spergularia diandra</i> ^	■	■
	<i>Spergularia marina</i>		■



Flowering Plants			
Family	Species	Hiltaba	GRNP
Casuarinaceae	<i>Allocasuarina helmsii</i>	■	■
	<i>Allocasuarina muelleriana</i> subsp. <i>muelleriana</i>		X
	<i>Allocasuarina verticillata</i>		X
	<i>Casuarina pauper</i>	X	X
Celastraceae	<i>Stackhousia muricata</i> subsp. <i>Perennial</i> (W.R.Barker 3641)	■	■
Centrolepidaceae	<i>Centrolepis polygyna</i>	■	■
	<i>Centrolepis strigosa</i> subsp. <i>strigosa</i>		■
Chenopodiaceae	<i>Atriplex acutibractea</i> subsp. <i>acutibractea</i>		X
	<i>Atriplex acutibractea</i> subsp. <i>karoniensis</i>		■
	<i>Atriplex eardleyae</i>		■
	<i>Atriplex stipitata</i>	X	X
	<i>Atriplex suberecta</i>	X *	
	<i>Atriplex vesicaria</i>	X	X
	<i>Chenopodium curvispicatum</i>	X	■
	<i>Chenopodium desertorum</i> subsp. <i>anidiophyllum</i>		■
	<i>Chenopodium desertorum</i> subsp. <i>desertorum</i>	X	X
	<i>Chenopodium desertorum</i> subsp. <i>microphyllum</i>		■
	<i>Chenopodium murale</i> ^	X *	■
	<i>Dissocarpus biflorus</i> var. <i>biflorus</i>	X *	
	<i>Dissocarpus paradoxus</i>	X	
	<i>Dysphania cristata</i>	X *	■
	<i>Dysphania melanocarpa</i>	■	
	<i>Einadia nutans</i> subsp. <i>nutans</i>	■	
	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	X	X
	<i>Eriochiton sclerolaenoides</i>	X	■
	<i>Maireana brevifolia</i>		X
	<i>Maireana enchylaenoides</i>		X
	<i>Maireana erioclada</i>	X	X
	<i>Maireana georgei</i>	■	■
	<i>Maireana lobiflora</i>		■
	<i>Maireana oppositifolia</i>	X *	■
	<i>Maireana pentatropis</i>	X	■
	<i>Maireana pyramidata</i>	X	■
	<i>Maireana radiata</i>	X	■
	<i>Maireana sedifolia</i>	X	■
	<i>Maireana trichoptera</i>	X	X
	<i>Maireana turbinata</i>	X	■

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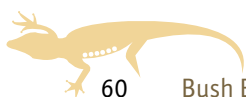


Flowering Plants			
Family	Species	Hiltaba	GRNP
Chenopodiaceae	<i>Osteocarpum salsuginosum</i>	X	
	<i>Rhagodia candolleana</i> subsp. <i>candolleana</i>		■
	<i>Rhagodia crassifolia</i>	X	■
	<i>Rhagodia parabolica</i>	X	X
	<i>Rhagodia preissii</i> subsp. <i>preissii</i>	X	X
	<i>Rhagodia spinescens</i>	X	■
	<i>Rhagodia ulicina</i>	X	■
	<i>Salsola australis</i>	X	■
	<i>Sclerolaena brevifolia</i>	X *	X
	<i>Sclerolaena diacantha</i>	X *	X
	<i>Sclerolaena obliquicuspis</i>	■	■
	<i>Sclerolaena parviflora</i>	X	■
	<i>Sclerolaena patenticuspis</i>	X	X
	<i>Sclerolaena uniflora</i>	■	■
	<i>Sclerolaena uniflora</i> hybrid		■
	<i>Tecticornia disarticulata</i>	X *	
	<i>Tecticornia halocnemoides</i> subsp. <i>halocnemoides</i>	X	
	<i>Tecticornia indica</i> subsp. <i>leiostachya</i>		■
	<i>Tecticornia lylei</i>	■	
	<i>Tecticornia pruinosa</i>	X *	
Colchicaceae	<i>Wurmbea australis</i>	■	■
	<i>Wurmbea decumbens</i> ~		■
	<i>Wurmbea dioica</i> subsp. <i>brevifolia</i>	■	■
Convolvulaceae	<i>Convolvulus angustissimus</i> subsp. <i>angustissimus</i>		■
	<i>Convolvulus angustissimus</i> subsp. <i>peninsularum</i>		■
	<i>Convolvulus remotus</i>	X	X
	<i>Ipomoea cairica</i> ^		■
	<i>Wilsonia humilis</i>		■
Crassulaceae	<i>Crassula colligata</i> subsp. <i>lamprosperma</i>	■	■
	<i>Crassula colorata</i> var. <i>acuminata</i>	■	■
	<i>Crassula colorata</i> var. <i>colorata</i>		■
	<i>Crassula extrorsa</i>		■
	<i>Crassula natans</i> var. <i>minus</i> ^		■
	<i>Crassula peduncularis</i> ~	■	
	<i>Crassula tetramera</i>	■	■
Cucurbitaceae	<i>Citrullus lanatus</i> ^		■
	<i>Cucumis myriocarpus</i> ^	X *	■
Cupressaceae	<i>Callitris glaucophylla</i>		■
	<i>Callitris gracilis</i>	X *	■
	<i>Callitris verrucosa</i>		X



Flowering Plants			
Family	Species	Hiltaba	GRNP
Cyperaceae	<i>Cyperus alterniflorus</i>	■	■
	<i>Cyperus gymnocaulos</i>	■	X
	<i>Cyperus rigidellus</i>	■	
	<i>Gahnia lanigera</i>	X *	X
	<i>Isolepis congrua</i>		■
	<i>Isolepis marginata</i> ^	■	
	<i>Isolepis platycarpa</i>	■	■
	<i>Lepidosperma viscidum</i>	X	X
	<i>Schoenus nanus</i>	■	■
	<i>Schoenus sculptus</i> ~		■
	<i>Schoenus subaphyllus</i>		X
Dilleniaceae	<i>Hibbertia</i> aff. <i>crispula</i> # ~		X
	<i>Hibbertia devitata</i>		■
	<i>Hibbertia virgata</i>		X
Droseraceae	<i>Drosera glanduligera</i>		■
	<i>Drosera macrantha</i> subsp. <i>planchonii</i>	■	■
	<i>Drosera peltata</i>		■
Ericaceae	<i>Astroloma conostephioides</i>		■
	<i>Astroloma humifusum</i>	X	X
	<i>Leucopogon cordifolius</i>		X
Euphorbiaceae	<i>Adriana quadripartita</i>		X
	<i>Beyeria lechenaultii</i>	X	X
	<i>Euphorbia drummondii</i>	X	■
	<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	X	X
Fabaceae	<i>Acacia acanthoclada</i> subsp. <i>acanthoclada</i>	■	
	<i>Acacia</i> aff. <i>euthycarpa</i>		X
	<i>Acacia</i> aff. <i>toondulya</i> ~	X	
	<i>Acacia ancistrophylla</i> var. <i>lissophylla</i>	X	■
	<i>Acacia aneura</i>	X *	
	<i>Acacia beckleri</i> subsp. <i>beckleri</i>	X	X
	<i>Acacia burkittii</i>	X *	
	<i>Acacia continua</i>	X	X
	<i>Acacia euthycarpa</i>	X	
	<i>Acacia halliana</i>	■	■
	<i>Acacia havilandiorum</i>	■	
	<i>Acacia iteaphylla</i> ~	X	■
	<i>Acacia ligulata</i>	X	X

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Fabaceae	<i>Acacia merrallii</i>		X
	<i>Acacia microcarpa</i>		X
	<i>Acacia notabilis</i>	X	X
	<i>Acacia nyssophylla</i>	X	X
	<i>Acacia oswaldii</i>	X	X
	<i>Acacia papyrocarpa</i>	X	■
	<i>Acacia rigens</i>	X	X
	<i>Acacia rupicola</i>		■
	<i>Acacia sclerophylla</i> var. <i>sclerophylla</i>		X
	<i>Acacia spinescens</i>		X
	<i>Acacia tarculensis</i>	X	■
	<i>Acacia tetragonophylla</i>	X *	■
	<i>Aotus subspinescens</i>	■	X
	<i>Bossiaea walkeri</i>		X
	<i>Daviesia benthamii</i> subsp. <i>acanthoclona</i>		■
	<i>Daviesia ulicifolia</i> subsp. <i>aridicola</i>		X
	<i>Eutaxia microphylla</i>	X	X
	<i>Glycine rubiginosa</i>	■	■
	<i>Goodia medicaginea</i>	■	■
	<i>Indigofera australis</i> subsp. <i>hesperia</i>	■	■
	<i>Indigofera helmsii</i>	X *	■
	<i>Kennedia prostrata</i>	X *	■
	<i>Lotus cruentus</i>		■
	<i>Medicago minima</i> ^	X	■
	<i>Medicago polymorpha</i> ^		■
	<i>Medicago truncatula</i> ^		■
	<i>Senna artemisioides</i> subsp. <i>filifolia</i>	■	■
	<i>Senna artemisioides</i> subsp. <i>X artemisioides</i>	X	■
	<i>Senna artemisioides</i> subsp. <i>X coriacea</i>	■	X
	<i>Senna artemisioides</i> subsp. <i>X petiolaris</i>	X	X
	<i>Senna cardiosperma</i> subsp. <i>gawlerensis</i>	X	■
	<i>Senna pleurocarpa</i> var. <i>pleurocarpa</i>	■	X
	<i>Swainsona acuticarinata</i>		■
	<i>Swainsona disjuncta</i>	■	
	<i>Swainsona formosa</i>	■	
	<i>Swainsona microphylla</i>		■
	<i>Templetonia egena</i>	X	X
	<i>Trifolium arvense</i> var. <i>arvense</i> ^		X



Flowering Plants			
Family	Species	Hiltaba	GRNP
Frankeniaceae	<i>Frankenia cordata</i>		■
	<i>Frankenia pauciflora</i> var. <i>fruticulosa</i>		■
	<i>Frankenia pauciflora</i> var. <i>gunnii</i>		■
	<i>Frankenia serpyllifolia</i>		■
	<i>Frankenia</i> sp.	X	
Gentianaceae	<i>Schenkia australis</i>	X	X
Geraniaceae	<i>Erodium aureum</i> ^	■	
	<i>Erodium carolinianum</i>	■	■
	<i>Erodium cicutarium</i> ^	■	■
	<i>Erodium crinitum</i>	■	■
	<i>Erodium cygnorum</i>	■	■
	<i>Erodium janszii</i>		■
	<i>Geranium retrorsum</i>	■	■
	<i>Geranium solanderi</i> var. <i>solanderi</i>	■	■
	<i>Pelargonium littorale</i>		■



Pearl Bluebush (*Maireana sedifolia*) regenerating after fire, Peter Lang © Copyright, DEWNR SA

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Flowering Plants			
Family	Species	Hiltaba	GRNP
Goodeniaceae	<i>Dampiera lanceolata</i> var. <i>lanceolata</i>		■
	<i>Dampiera rosmarinifolia</i>	■	X
	<i>Goodenia calcarata</i>	■	
	<i>Goodenia glabra</i>	■	■
	<i>Goodenia havilandii</i>	X	X
	<i>Goodenia pinnatifida</i>		■
	<i>Goodenia pusilliflora</i>	■	■
	<i>Goodenia quasilibera</i>		■
	<i>Goodenia robusta</i>		■
	<i>Goodenia varia</i>		■
	<i>Goodenia willisiana</i>	■	■
	<i>Scaevola depauperata</i>		■
	<i>Scaevola humilis</i>	■	X
	<i>Scaevola spinescens</i>		■
	<i>Velleia arguta</i>	■	■
	<i>Velleia cynopotamica</i> ~		■
Gyrostemonaceae	<i>Gyrostemon ramulosus</i>		X
Haloragaceae	<i>Glischrocaryon angustifolium</i>		■
	<i>Glischrocaryon flavescens</i>	X	X
	<i>Gonocarpus elatus</i>	X	X
	<i>Haloragis gossei</i>	■	X *
	<i>Myriophyllum verrucosum</i>	■	
Hemerocallidaceae	<i>Dianella revoluta</i> var. <i>divaricata</i>		X
	<i>Dianella revoluta</i> var. <i>revoluta</i>	X	X
	<i>Tricoryne tenella</i>		X
Hydrocharitaceae	<i>Ottelia ovalifolia</i> subsp. <i>ovalifolia</i> ~	■	
Hypoxidaceae	<i>Hypoxis glabella</i> var. <i>glabella</i>	■	■
Iridaceae	<i>Moraea setifolia</i> ^		■
Juncaceae	<i>Juncus aridicola</i>		X *
	<i>Juncus bufonius</i>	■	X
Juncaginaceae	<i>Triglochin isingiana</i>	■	■
	<i>Triglochin longicarpa</i>	■	
	<i>Triglochin mucronata</i>		■
	<i>Triglochin nana</i>		■
	<i>Triglochin trichophora</i>	■	
Lamiaceae	<i>Dicrastylis verticillata</i>		X
	<i>Marrubium vulgare</i> ^	X	X
	<i>Prostanthera ammophila</i>		■
	<i>Prostanthera florifera</i>	X	■
	<i>Prostanthera serpyllifolia</i> subsp. <i>microphylla</i>	■	■
	<i>Prostanthera striatiflora</i>	X	X
	<i>Salvia verbenaca</i> var. <i>verbenaca</i> ^		■



Flowering Plants			
Family	Species	Hiltaba	GRNP
Lamiaceae	<i>Salvia verbenaca</i> var. <i>vernalis</i> ^	X *	X *
	<i>Teucrium corymbosum</i>	X	X
	<i>Teucrium racemosum</i>		■
	<i>Teucrium sessiliflorum</i>		X
	<i>Westringia rigida</i>	X *	X
Lauraceae	<i>Cassytha flindersii</i>	■	
	<i>Cassytha melantha</i>	■	X
	<i>Cassytha peninsularis</i>	X	■
	<i>Cassytha pubescens</i>		■
Linaceae	<i>Linum marginale</i>		■
Loganiaceae	<i>Logania nuda</i>		X
	<i>Logania ovata</i>		■
	<i>Phyllangium sulcatum</i> ~		■
Loranthaceae	<i>Amyema melaleuca</i>		X
	<i>Amyema miquelii</i>	X	■
	<i>Amyema miraculosa</i> subsp. <i>boormanii</i>		■
	<i>Amyema preissii</i>	■	
	<i>Amyema quandang</i> var. <i>quandang</i>	X	■
	<i>Lysiana exocarpi</i> subsp. <i>exocarpi</i>	■	■
	<i>Lysiana murrayi</i>	■	
Malvaceae	<i>Abutilon leucopetalum</i>	■	
	<i>Abutilon otocarpum</i>	■	
	<i>Alyogyne hakeifolia</i>	■	■
	<i>Alyogyne huegelii</i>		■
	<i>Androcalva tatei</i>		■
	<i>Lasiopetalum behrii</i>		■
	<i>Lawrencia glomerata</i>		X *
	<i>Lawrencia squamata</i>		X
	<i>Malva parviflora</i> ^		■
	<i>Radyera farragei</i>	X *	
	<i>Sida calyxhymenia</i>	■	■
	<i>Sida intricata</i>	X *	■
	<i>Sida petrophila</i>		■
	<i>Sida phaeotricha</i>	■	■
	<i>Sida spodochroma</i>	■	

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Family	Species	Hiltaba	GRNP
Myrtaceae	<i>Babingtonia behrii</i>	X *	X
	<i>Baeckea crassifolia</i>		■
	<i>Calytrix involucrata</i>	X	X
	<i>Calytrix tetragona</i>		X
	<i>Darwinia salina</i>		■
	<i>Eucalyptus albopurpurea</i>		■
	<i>Eucalyptus brachycalyx</i>		X
	<i>Eucalyptus brachycalyx</i> - <i>Eucalyptus concinna</i>	X *	
	<i>Eucalyptus calcareana</i>	■	■
	<i>Eucalyptus ceratocorys</i>		■
	<i>Eucalyptus concinna</i>	X *	■
	<i>Eucalyptus dumosa</i>	X	X
	<i>Eucalyptus gracilis</i>	X	X
	<i>Eucalyptus gypsophila</i>		X *
	<i>Eucalyptus incrassata</i>		X
	<i>Eucalyptus lansdowneana</i>		■
	<i>Eucalyptus leptophylla</i>		■
	<i>Eucalyptus odorata</i>		■
	<i>Eucalyptus oleosa</i>	X	X
	<i>Eucalyptus oleosa</i> subsp. <i>?ampliata</i>	X	
	<i>Eucalyptus phenax</i> subsp. <i>phenax</i>	X	X
	<i>Eucalyptus phenax</i> subsp. <i>phenax</i> X <i>Eucalyptus ?calcareana</i>	X	
	<i>Eucalyptus porosa</i>	X	X
	<i>Eucalyptus socialis</i> - <i>Eucalyptus yumbarrana</i>	X *	X *
	<i>Eucalyptus socialis</i> subsp. <i>eucentrica</i>		■
	<i>Eucalyptus socialis</i> subsp. <i>socialis</i>	X	X
	<i>Eucalyptus socialis</i> subsp. <i>victoriensis</i>		■
	<i>Eucalyptus socialis</i> subsp. <i>viridans</i>	X	■
	<i>Eucalyptus trivalva</i>		■
	<i>Eucalyptus yumbarrana</i>		X
	<i>Homoranthus wilhelmii</i>	X	X
	<i>Leptospermum coriaceum</i>	■	X
	<i>Melaleuca armillaris</i> subsp. <i>akineta</i> ~	X	X
	<i>Melaleuca eleuterostachya</i>		X
	<i>Melaleuca glomerata</i>	X	
	<i>Melaleuca halmaturorum</i>		■
	<i>Melaleuca lanceolata</i>	X	X
	<i>Melaleuca leiocarpa</i> ~		X
	<i>Melaleuca oxyphylla</i> ~		■
	<i>Melaleuca pauperiflora</i> subsp. <i>mutica</i>	■	■
	<i>Melaleuca uncinata</i>	X	X
Ophioglossaceae	<i>Ophioglossum lusitanicum</i>	■	■



Flowering Plants			
Family	Species	Hiltaba	GRNP
Orchidaceae	<i>Acianthus pusillus</i>		■
	<i>Caladenia aurulenta</i>		■
	<i>Caladenia bicalliata</i>		■
	<i>Caladenia capillata</i>	■	■
	<i>Caladenia cardiochila</i>	■	■
	<i>Caladenia interanea</i>	■	■
	<i>Caladenia septuosa</i>	■	■
	<i>Caladenia stricta</i>		■
	<i>Caladenia tensa</i> #	■	■
	<i>Caladenia toxochila</i>	■	■
	<i>Microtis arenaria</i>		■
	<i>Microtis eremaea</i> ~	■	
	<i>Pheladenia deformis</i>		■
	<i>Prasophyllum occidentale</i>	■	■
	<i>Pterostylis excelsa</i>	■	■
	<i>Pterostylis mutica</i>		■
	<i>Pterostylis nana</i>	■	■
	<i>Pterostylis ovata</i>	■	■
	<i>Pterostylis pusilla</i>		■
	<i>Pterostylis sanguinea</i>		■
	<i>Pterostylis xerophila</i> # ~	■	■
	<i>Thelymitra alcockiae</i>	■	■
	<i>Thelymitra antennifera</i>		■
	<i>Thelymitra luteocilium</i>		■
Oxalidaceae	<i>Oxalis perennans</i>	X	■
Papaveraceae	<i>Papaver hybridum</i> ^	■	■
Phrymaceae	<i>Glossostigma cleistanthum</i>	■	
	<i>Glossostigma drummondii</i>	■	
	<i>Glossostigma</i> sp. Long-stout-pedicelled (W.R.Barker 2481) ~	X *	
Phyllanthaceae	<i>Poranthera microphylla</i>		X
Pittosporaceae	<i>Billardiera cymosa</i>		■
	<i>Bursaria spinosa</i> subsp. <i>spinosa</i>	X	■
	<i>Pittosporum angustifolium</i>	X	X
Plantaginaceae	<i>Plantago coronopus</i> subsp. <i>commutata</i> ^		X *
	<i>Plantago drummondii</i>	■	■
	<i>Plantago</i> sp. B (R.Bates 44765)	X	■
Plumbaginaceae	<i>Limonium lobatum</i> ^		■

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	○ = Putative new species	~ = NPW Act listed
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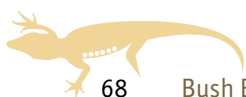
Flowering Plants			
Family	Species	Hiltaba	GRNP
Poaceae	<i>Alopecurus geniculatus</i> ^		■
	<i>Amphipogon caricinus</i> var. <i>caricinus</i>	X *	
	<i>Aristida contorta</i>	X	X
	<i>Austrostipa acrociliata</i>		X
	<i>Austrostipa drummondii</i>	X *	■
	<i>Austrostipa elegantissima</i>	■	X
	<i>Austrostipa eremophila</i>	■	■
	<i>Austrostipa exilis</i>	X *	
	<i>Austrostipa flavescens</i>		■
	<i>Austrostipa hemipogon</i>		X
	<i>Austrostipa nitida</i>	X	X
	<i>Austrostipa nodosa</i>	■	X
	<i>Austrostipa pilata</i> ~		■
	<i>Austrostipa platychaeta</i>	X	X
	<i>Austrostipa puberula</i>	X *	■
	<i>Austrostipa scabra</i> subsp. <i>falcata</i>	■	■
	<i>Austrostipa scabra</i> subsp. <i>scabra</i>	■	■
	<i>Austrostipa trichophylla</i>	X *	■
	<i>Avellinia michelii</i> ^		■
	<i>Avena barbata</i> ^	X	■
	<i>Avena fatua</i> ^	■	
	<i>Briza minor</i> ^		X
	<i>Bromus madritensis</i> ^	■	■
	<i>Bromus rubens</i> ^	X	■
	<i>Cymbopogon oblectus</i>	X	X
	<i>Digitaria brownii</i>	X *	
	<i>Eragrostis dielsii</i>	■	
	<i>Hordeum glaucum</i> ^	■	■
	<i>Hordeum leporinum</i> ^	■	■
	<i>Lachnagrostis filiformis</i>	X	X
	<i>Lamarckia aurea</i> ^		■
	<i>Neurachne alopecuroides</i>		■
	<i>Neurachne munroi</i>	■	
	<i>Paspalidium constrictum</i>	■	
	<i>Pentameris airoides</i> subsp. <i>airoides</i> ^	X	X
	<i>Poa annua</i> ^	■	
	<i>Rostraria cristata</i> ^	X *	■
	<i>Rostraria pumila</i> ^	X	■
	<i>Rytidosperma caespitosum</i>	■	X
	<i>Rytidosperma setaceum</i>	X *	■
	<i>Schismus barbatus</i> ^	X	■
	<i>Themeda triandra</i>		■
	<i>Triodia irritans</i>	X	X



Flowering Plants			
Family	Species	Hiltaba	GRNP
Poaceae	<i>Triodia lanata</i>		X
	<i>Triodia scariosa</i>	■	■
	<i>Tripogon loliiformis</i>	X	■
	<i>Vulpia muralis</i> ^	■	■
	<i>Vulpia myuros</i> f. <i>myuros</i> ^	X	■
Polygalaceae	<i>Comesperma scoparium</i>		X
	<i>Comesperma viscidulum</i>		■
	<i>Comesperma volubile</i>		■
Polygonaceae	<i>Muehlenbeckia adpressa</i>	■	X
	<i>Rumex brownii</i>	■	■
Portulacaceae	<i>Calandrinia calyptata</i>	■	■
	<i>Calandrinia disperma</i>		■
	<i>Calandrinia eremaea</i>		■
	<i>Calandrinia granulifera</i>		■
Potamogetonaceae	<i>Lepilaena australis</i>	■	■
Primulaceae	<i>Lysimachia arvensis</i> ^	X	X
Proteaceae	<i>Grevillea anethifolia</i> ~	X	X
	<i>Grevillea aspera</i>		X
	<i>Grevillea huegelii</i>	X	■
	<i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>		■
	<i>Grevillea parallelinervis</i>	X	X
	<i>Grevillea pterosperma</i>		■
	<i>Hakea cycloptera</i>		X
	<i>Hakea francisiana</i>	■	X
	<i>Hakea leucoptera</i> subsp. <i>leucoptera</i>	X	■
	<i>Hakea mitchellii</i>		X
	<i>Hakea vittata</i>		■
Ranunculaceae	<i>Clematis microphylla</i>		■
	<i>Ranunculus hamatosetosus</i>	■	■
	<i>Ranunculus sessiliflorus</i> var. <i>pilulifer</i> ~	■	
	<i>Ranunculus sessiliflorus</i> var. <i>sessiliflorus</i>		■
Rhamnaceae	<i>Cryptandra myriantha</i>		■
	<i>Cryptandra</i> sp. Hiltaba (Anon. NPGA-8100)	X	■
	<i>Pomaderris paniculosa</i> subsp. <i>paniculosa</i>		■
	<i>Spyridium stenophyllum</i> subsp. <i>renovatum</i>	X	
	<i>Stenanthemum arens</i>	X	
	<i>Stenanthemum leucophractum</i>		X
	<i>Stenanthemum notiale</i> subsp. <i>notiale</i>		■

Key

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Flowering Plants			
Family	Species	Hiltaba	GRNP
Rubiaceae	<i>Galium australe</i>		■
	<i>Galium leptogonium</i>	■	■
	<i>Galium microlobum</i>	■	■
	<i>Galium murale</i> ^		■
	<i>Galium spurium</i> ^		■
	<i>Opercularia turpis</i>		■
	<i>Opercularia varia</i>		■
	<i>Pomax umbellata</i>	X	X
Rutaceae	<i>Boronia coerulescens</i> subsp. <i>coerulescens</i>	■	X
	<i>Correa backhouseana</i> var. <i>coriacea</i>	X	X
	<i>Geijera linearifolia</i>	X	X
	<i>Microcybe multiflora</i> subsp. <i>multiflora</i>		■
	<i>Phebalium bullatum</i>	■	X
	<i>Philotheca linearis</i>	X	■
Santalaceae	<i>Exocarpos aphyllus</i>	X	X
	<i>Exocarpos sparteus</i>		X
	<i>Leptomeria preissiana</i> ~		■
	<i>Santalum acuminatum</i>	X	■
	<i>Santalum murrayanum</i>		■
	<i>Santalum spicatum</i> ~	X	■



Stenanthemum arens, a species recently described in 2007, Peter Lang © Copyright, DEWNR SA



Flowering Plants			
Family	Species	Hiltaba	GRNP
Sapindaceae	<i>Alectryon oleifolius</i> subsp. <i>canescens</i>	X	X
	<i>Dodonaea baueri</i>	X	X
	<i>Dodonaea bursariifolia</i>		X
	<i>Dodonaea hexandra</i>		■
	<i>Dodonaea intricata</i>	X	X
	<i>Dodonaea lobulata</i>	X	■
	<i>Dodonaea stenozyga</i>	■	■
	<i>Dodonaea tepperi</i>		■
	<i>Dodonaea viscosa</i> subsp. <i>angustissima</i>	X	X
Scrophulariaceae	<i>Eremophila alternifolia</i>	X	X
	<i>Eremophila behriana</i>		■
	<i>Eremophila crassifolia</i>		X
	<i>Eremophila deserti</i>		X
	<i>Eremophila glabra</i> subsp. <i>glabra</i>	X	X
	<i>Eremophila latrobei</i> subsp. <i>glabra</i>	■	



Bush Hibiscus (*Radyera farragei*). Some invertebrates have evolved close relationships with their host plants, for example the beetle *Neospades* aff. *rugiceps* was only found on *Radyera farragei*, Peter Lang © Copyright, DEWNR SA

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Flowering Plants			
Family	Species	Hiltaba	GRNP
Scrophulariaceae	<i>Eremophila longifolia</i>		X
	<i>Eremophila maculata</i> subsp. <i>maculata</i>		■
	<i>Eremophila oppositifolia</i> subsp. <i>oppositifolia</i>	X	
	<i>Eremophila scoparia</i>	X	X
	<i>Eremophila serrulata</i>	X	■
	<i>Eremophila subfloccosa</i> subsp. <i>lanata</i>		■
	<i>Eremophila weldii</i>		■
	<i>Limosella australis</i>		■
	<i>Limosella curdieana</i>	■	
	<i>Limosella curdieana</i> var. Long-pedicelled (W.R.Barker 3577)	■	■
	<i>Myoporum montanum</i>		■
	<i>Myoporum platycarpum</i> subsp. <i>platycarpum</i>	X	X
	<i>Zaluzianskya divaricata</i> ^		■
Solanaceae	<i>Anthocercis anisantha</i> subsp. <i>collina</i>	X	X
	<i>Cyphanthera myosotidea</i>		■
	<i>Duboisia hopwoodii</i>	■	X
	<i>Grammosolen truncatus</i>		X
	<i>Lycium australe</i>	X	X
	<i>Lycium ferocissimum</i> ^		■
	<i>Nicotiana glauca</i> ^	X *	■
	<i>Nicotiana goodspeedii</i>		■
	<i>Nicotiana maritima</i>	■	■
	<i>Nicotiana occidentalis</i> subsp. <i>obliqua</i>		X
	<i>Nicotiana velutina</i>		■
	<i>Solanum coactiliferum</i>		X
	<i>Solanum nigrum</i> ^	■	■
	<i>Solanum petrophilum</i>	X	X
	<i>Solanum simile</i>	■	■
	<i>Solanum sturtianum</i>	■	■
Stylidiaceae	<i>Levenhookia dubia</i>		■
Thymelaeaceae	<i>Pimelea curviflora</i> var. <i>gracilis</i>		■
	<i>Pimelea imbricata</i> var. <i>petraea</i>	■	■
	<i>Pimelea micrantha</i>	X	X
	<i>Pimelea microcephala</i> subsp. <i>microcephala</i>	X *	X
	<i>Pimelea octophylla</i>		■
	<i>Pimelea petrophila</i>		X
	<i>Pimelea simplex</i> subsp. <i>continua</i>		■
	<i>Pimelea simplex</i> subsp. <i>simplex</i>	■	■
	<i>Pimelea trichostachya</i>		X
Urticaceae	<i>Parietaria cardiostegia</i>	■	■
	<i>Parietaria debilis</i>		■
Verbenaceae	<i>Verbena supina</i> var. <i>erecta</i> ^	■	



Flowering Plants			
Family	Species	Hiltaba	GRNP
Violaceae	<i>Hybanthus floribundus</i> subsp. <i>floribundus</i>	■	X
	<i>Hybanthus monopetalus</i>	■	X
Zygophyllaceae	<i>Nitraria billardieri</i>		■
	<i>Zygophyllum ammophilum</i>		■
	<i>Zygophyllum angustifolium</i>	■	■
	<i>Zygophyllum apiculatum</i>	X	X
	<i>Zygophyllum aurantiacum</i> subsp. <i>aurantiacum</i>	X *	X
	<i>Zygophyllum aurantiacum</i> subsp. <i>simplicifolium</i>		X
	<i>Zygophyllum crenatum</i>	■	■
	<i>Zygophyllum eremaeum</i>	■	■
	<i>Zygophyllum eremaeum</i> (NC)		■
	<i>Zygophyllum glaucum</i>		■
	<i>Zygophyllum iodocarpum</i>	■	■
	<i>Zygophyllum ovatum</i>		■
	<i>Zygophyllum simile</i>		■

Ferns			
Family	Species	Hiltaba	GRNP
Aspleniaceae	<i>Pleurosorus rutifolius</i>	X	■
	<i>Pleurosorus subglandulosus</i>	X	■
Pteridaceae	<i>Anogramma leptophylla</i> ~	■	■
	<i>Cheilanthes austrotenuifolia</i>		■
	<i>Cheilanthes distans</i>	■	■
	<i>Cheilanthes lasiophylla</i>		X
	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		X



Woolly Cloak Fern (*Cheilanthes lasiophylla*), Peter Lang © Copyright, DEWNR SA

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Liverworts			
Family	Species	Hiltaba	GRNP
Cephaloziellaceae	<i>Cephaloziella exiliflora</i>	X *	
Fossombroniaceae	<i>Fossombronia</i> sp.	X *	
Targioniaceae	<i>Targionia hypophylla</i>	X *	

Mosses			
Family	Species	Hiltaba	GRNP
Bryaceae	<i>Gemmabryum austrosabulosum</i>	X *	
	<i>Gemmabryum</i> sp.	X *	X *
	<i>Rosulabryum campylotheicum</i>	X	
Fissidentaceae	<i>Fissidens megalotis</i>	X *	
Funariaceae	<i>Funaria hygrometrica</i>	X *	
	<i>Goniomitrium acuminatum</i> subsp. <i>enerve</i>	X *	X *
Gigaspermaceae	<i>Gigaspermum repens</i>	X *	X *
Grimmiaceae	<i>Grimmia laevigata</i>	X *	
	<i>Grimmia pulvinata</i> var. <i>africana</i>	X *	
Leucobryaceae	<i>Campylopus introflexus</i>	X *	
Pottiaceae	? <i>Tortula</i> sp.	X *	
	<i>Aloina bifrons</i>	X *	
	<i>Barbula subcalycina</i>	X *	
	<i>Crossidium davidai</i>	X *	
	<i>Crossidium geheebii</i>	X *	X *
	<i>Didymodon torquatus</i>	X *	X *
	<i>Pseudocrossidium crinitum</i>	X	
	<i>Pseudocrossidium hornschurchianum</i>	X *	
	<i>Pterygoneurum ovatum</i>	X *	
	<i>Stonea oleaginosa</i>	X *	
	<i>Syntrichia antarctica</i>	X *	X *
	<i>Syntrichia papillosa</i>	X *	
	<i>Tortula atrovirens</i>	X *	X *
	<i>Triquetrella papillata</i>	X *	

Lichens			
Family	Species	Hiltaba	GRNP
Acarosporaceae	<i>Acarospora citrina</i>	X *	X *
Candelariaceae	<i>Candelaria concolor</i>	X *	
Cladoniaceae	<i>Cladia aggregata</i>	X *	
	<i>Cladia muelleri</i>	X *	
Collemaaceae	<i>Collema</i> spp.	X *	X *



Lichens			
Family	Species	Hiltaba	GRNP
Graphidaceae	<i>Diploschistes</i> sp.	X *	X *
Heppiaceae	? <i>Heppia</i> sp.	X *	
Lecanoraceae	? <i>Lecanora</i> sp.	X *	
Lecideaceae	? <i>Lecidea</i> sp.	X *	X *
Parmeliaceae	<i>Flavoparmelia rutidota</i>	X	
	<i>Flavoparmelia</i> spp.	X	
	<i>Parmeliaceae</i> spp.	X *	
	<i>Usnea</i> sp.	X *	
	<i>Xanthoparmelia</i> ? <i>versicolor</i>	X *	
	<i>Xanthoparmelia convoluta</i>	X	
	<i>Xanthoparmelia reptans</i>	X *	
	<i>Xanthoparmelia semiviridis</i>	X	X *
	<i>Xanthoparmelia</i> spp.	X *	
Physciaceae	? <i>Physcia</i> sp.	X *	
Psoraceae	<i>Psora crystallifera</i>	X *	
	<i>Psora decipiens</i>	X	X *
Teloschistaceae	<i>Caloplaca</i> sp.	X *	
	<i>Fulgensia</i> sp.	X *	
	<i>Teloschistes chrysophthalmus</i>	X *	
	<i>Teloschistes spinosus</i>	X	
	<i>Xanthoria</i> sp.	X *	
Verrucariaceae	? <i>Endocarpon</i> sp.	X *	

Fungi			
Family	Species	Hiltaba	GRNP
Coriolaceae	<i>Pycnoporus sanguineus</i>	X *	
Geastraceae	<i>Geastrum</i> aff. <i>javanicum</i>	X *	
	<i>Geastrum clelandii</i>		X *
	<i>Geastrum floriforme</i>	X *	
Lycoperdaceae	<i>Lycoperdon glabrescens</i>	X *	
Tulostomataceae	<i>Tulostoma albicans</i>	X *	
	<i>Tulostoma macalpinianum</i>		X *
	<i>Tulostoma operculatum</i>		X *

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Appendix B: Threatened Species

Nomenclature and taxonomic concepts used in this report are consistent with the Australian Faunal Directory, Australian Plant Name Index, Australian Plant Census, Checklist of the Lichens of Australia and its Island Territories, AusMoss, and the Catalogue of Australian Liverworts and Hornworts.

Current at January 2015



Fauna

Vertebrates

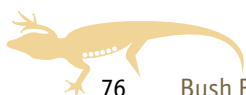
Mammals					
Family	Species	Common Name	Status	Hiltaba	GRNP
Macropodidae	<i>Petrogale xanthopus xanthopus</i>	Yellow-footed Rock-wallaby	NPW Act—Vulnerable	■	

Birds					
Family	Species	Common Name	Status	Hiltaba	GRNP
Acanthizidae	<i>Acanthiza iredalei iredalei</i>	Slender-billed Thornbill	NPW Act—Rare	■	
Cacatuidae	<i>Lophochroa leadbeateri</i>	Major Mitchell's Cockatoo	NPW Act—Rare	■	
Climacteridae	<i>Climacteris affinis</i>	White-browed Treecreeper	NPW Act—Rare	■	
Falconidae	<i>Falco peregrinus</i>	Peregrine Falcon	NPW Act—Rare	■	
Megapodiidae	<i>Leipoa ocellata</i>	Malleefowl	EPBC Act—Vulnerable NPW Act—Vulnerable	■	
Monarchidae	<i>Grallina cyanoleuca</i>	Magpie-lark	NPW Act—Endangered	■	
	<i>Myiagra inquieta</i>	Restless Flycatcher	NPW Act—Rare	■	
Pachycephalidae	<i>Pachycephala inornata</i>	Gilbert's Whistler	NPW Act—Rare	■	
Psittacidae	<i>Neophema splendida</i>	Scarlet-chested Parrot	NPW Act—Rare	■	

Reptiles					
Family	Species	Common Name	Status	Hiltaba	GRNP
Boidae	<i>Morelia spilota</i>	Carpet Python, Diamond Python	NPW Act—Rare	■	

Key

- EPBC = Refers to the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
- NPW = Refers to the *National Parks and Wildlife Act 1972* (South Australia)
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Isolated Sandalwood (*Santalum spicatum*), Peter Lang © Copyright, DEWNR SA



Flowering Plants					
Family	Species	Common Name	Status	Hiltaba	GRNP
Asteraceae	<i>Ceratogyne obionoides</i>	Wingwort	NPW Act—Rare		■
	<i>Gratwickia monochaeta</i>	–	NPW Act—Rare		■
	<i>Leptorhynchos scaber</i>	Annual Buttons	NPW Act—Rare		■
	<i>Podolepis jaceoides</i>	Showy Copper-wire Daisy	NPW Act—Rare	■	■
	<i>Rhodanthe oppositifolia</i> subsp. <i>oppositifolia</i>	Twin-leaf Everlasting	NPW Act—Vulnerable	■	■
Brassicaceae	<i>Microlepidium pilosulum</i>	Hairy Shepherd's Purse	NPW Act—Rare		■
Campanulaceae	<i>Lobelia cleistogamoides</i>	–	NPW Act—Rare		■
Caryophyllaceae	<i>Sagina apetala</i>	Common Pearlwort, Annual Pearlwort			■
Colchicaceae	<i>Wurmbea decumbens</i>	Trailing Nancy	NPW Act—Rare		■
Crassulaceae	<i>Crassula peduncularis</i>	Purple Crassula	NPW Act—Rare	■	
Cyperaceae	<i>Schoenus sculptus</i>	Gimlet Bog-rush	NPW Act—Rare		■
Dilleniaceae	<i>Hibbertia</i> aff. <i>crispula</i>	–	EPBC—Vulnerable; NPW Act—Vulnerable		X



Flowering Plants					
Family	Species	Common Name	Status	Hiltaba	GRNP
Fabaceae	<i>Acacia aff. toondulya</i>	Toondulya Wattle	NPW Act—Rare	X	
	<i>Acacia iteaphylla</i>	Flinders Ranges Wattle	NPW Act—Rare	X	■
Goodeniaceae	<i>Velleia cynopotamica</i>	–	NPW Act—Rare		■
Hydrocharitaceae	<i>Ottelia ovalifolia</i> subsp. <i>ovalifolia</i>	Swamp Lily	NPW Act—Rare	■	
Loganiaceae	<i>Phyllangium sulcatum</i>	Rock Mitrewort	NPW Act—Vulnerable		■
Myrtaceae	<i>Melaleuca armillaris</i> subsp. <i>akineta</i>	Needle-leaf Honey-myrtle	NPW Act—Rare	X	X
	<i>Melaleuca leiocarpa</i>	Pungent Honey-myrtle	NPW Act—Rare		X
	<i>Melaleuca oxyphylla</i>	Pointed-leaf Honey-myrtle	NPW Act—Rare		■
Orchidaceae	<i>Caladenia tensa</i>	–	EPBC—Endangered	■	■
	<i>Microtis eremaea</i>	Slender Mignonette Orchid	NPW Act—Endangered	■	
	<i>Pterostylis xerophila</i>	Desert Greenhood	EPBC—Vulnerable; NPW Act—Vulnerable	■	■
Phrymaceae	<i>Glossostigma</i> sp. Long-stout-pedicelled (W.R.Barker 2481)	–	NPW Act—Vulnerable	X *	
Poaceae	<i>Austrostipa pilata</i>	Prickly Spear-grass	NPW Act—Vulnerable		■
Proteaceae	<i>Grevillea anethifolia</i>	Spiny Cream Spider-flower	NPW Act—Rare	X	X
Ranunculaceae	<i>Ranunculus sessiliflorus</i> var. <i>pilulifer</i>	Annual Buttercup	NPW Act—Vulnerable	■	
Santalaceae	<i>Leptomeria preissiana</i>	–	NPW Act—Endangered		■
	<i>Santalum spicatum</i>	Sandalwood	NPW Act—Vulnerable	X	■

Ferns					
Family	Species	Common Name	Status	Hiltaba	GRNP
Pteridaceae	<i>Anogramma leptophylla</i>	Annual Fern	NPW Act—Rare	■	■

Key

EPBC = Refers to the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)

NPW = Refers to the *National Parks and Wildlife Act 1972* (South Australia)

X = Previously recorded on the reserve and found on this survey

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Appendix C: Exotic and Pest Species

Nomenclature and taxonomic concepts used in this report are consistent with the Australian Faunal Directory, Australian Plant Name Index, Australian Plant Census, Checklist of the Lichens of Australia and its Island Territories, AusMoss, and the Catalogue of Australian Liverworts and Hornworts.

Current at January 2015



Fauna

Vertebrates

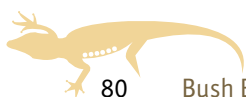
Mammals				
Family	Species	Common Name	Hiltaba	GRNP
Bovidae	<i>Capra hircus</i>	Goat	X	
	<i>Ovis aries</i>	Sheep	X	
Canidae	<i>Vulpes vulpes</i>	Fox, Red Fox	X	
Felidae	<i>Felis catus</i>	Cat	X	
Muridae	<i>Mus musculus</i>	House Mouse	X	



Goats (*Capra hircus*) are a major pest animal in the area, threatening many native flora species, Marina Cheng © Copyright, University of New South Wales

Key

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Invertebrates

Bees				
Family	Species	Common Name	Hiltaba	GRNP
Apidae	<i>Apis mellifera</i>	Honey Bee	X *	

Butterflies				
Family	Species	Common Name	Hiltaba	GRNP
Pieridae	<i>Pieris rapae</i>	Cabbage White Butterfly	X *	

True Bugs				
Family	Species	Common Name	Hiltaba	GRNP
Alydidae	<i>Melanacanthus scutellaris</i>	Brown Bean Bug, Podsucking Bug	X *	
Lygaeidae	<i>Nysius vinitor</i>	Rutherglen Bug	X *	X

Snails and Slugs				
Family	Species	Common Name	Hiltaba	GRNP
Helicidae	<i>Theba pisana</i>	White Italian Snail	X *	X *
Hygromiidae	<i>Cernuella virgata</i>	Vineyard Snail	X *	



Flora

Flowering Plants				
Family	Species	Common Name	Hiltaba	GRNP
Aizoaceae	<i>Mesembryanthemum crystallinum</i>	Common Ice Plant	■	■
	<i>Mesembryanthemum nodiflorum</i>	Small Ice Plant	■	■
Apiaceae	<i>Bupleurum semicompositum</i>	Dwarf Hare's-ear	X	X
	<i>Conium maculatum</i>	Carrot Fern, Hemlock		■
Asteraceae	<i>Arctotheca calendula</i>	Capeweed	■	
	<i>Carthamus lanatus</i>	Saffron Thistle	X	■
	<i>Centaurea melitensis</i>	Maltese Cockspur, Cockspur Thistle	X	X
	<i>Dittrichia graveolens</i>	Stinkwort	X *	X *
	<i>Hypochaeris glabra</i>	Smooth Cats-ear	X	■
	<i>Hypochaeris radicata</i>	Flat-weed, Cats-ear		■
	<i>Leontodon rhagadioloides</i>	Cretan Weed	■	■
	<i>Reichardia tingitana</i>	"Reichardia, False Sowthistle "		X
	<i>Sonchus oleraceus</i>	Common Sowthistle	■	X
	<i>Urospermum picroides</i>	False Hawkbit	X	X
Boraginaceae	<i>Buglossoides arvensis</i>	Sheepweed, Corn Gromwell		■
	<i>Echium plantagineum</i>	Paterson's Curse, Salvation Jane	■	■
	<i>Neotostema apulum</i>	Hairy Sheepweed, Blackweed	X	X
Brassicaceae	<i>Alyssum linifolium</i>	Flax-leaf Alyssum	■	■
	<i>Brassica tournefortii</i>	Mediterranean Turnip		■
	<i>Carrichtera annua</i>	Ward's Weed	X	X
	<i>Sisymbrium erysimoides</i>	Smooth Mustard	X	■
	<i>Sisymbrium irio</i>	London Rocket	X *	■ ■
	<i>Sisymbrium orientale</i>	Indian Hedge Mustard	■	
Caryophyllaceae	<i>Cerastium glomeratum</i>	Broad-leaved Mouse-ear chickweed, Sticky Mouse-ear Chickweed	■	
	<i>Gypsophila tubulosa</i>	Annual Chalkwort	X	
	<i>Herniaria cinerea</i>	Hairy Rupturewort	■	■
	<i>Polycarpon tetraphyllum</i>	Four-leaf Allseed	X *	■
	<i>Silene apetala</i>	Mallee Catchfly	■	■
	<i>Silene gallica</i> var. <i>gallica</i>	French Catchfly	■	■
	<i>Silene nocturna</i>	Mediterranean Catchfly	X	■

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Flowering Plants				
Family	Species	Common Name	Hiltaba	GRNP
Caryophyllaceae	<i>Silene tridentata</i>	Spanish Catchfly		■
	<i>Spergularia bocconeii</i>	Boccone's Sand-spurrey		X *
	<i>Spergularia diandra</i>	Lesser (or Small) Sand-spurrey	■	■
Chenopodiaceae	<i>Chenopodium murale</i>	Nettle-leaf Goosefoot	X *	■
Convolvulaceae	<i>Ipomoea cairica</i>	Mile a Minute, Coast Morning Glory		■
Crassulaceae	<i>Crassula natans</i> var. <i>minus</i>	–		■
Cucurbitaceae	<i>Citrullus lanatus</i>	Pie Melon, Camel Melon, Wild Melon, Bitter Melon		■
	<i>Cucumis myriocarpus</i>	Prickly Paddy Melon	X *	■
Cyperaceae	<i>Isolepis marginata</i>	Coarse Club-rush	■	
Fabaceae	<i>Medicago minima</i>	Little Medic	X	■
	<i>Medicago polymorpha</i>	Burr Medic		■
	<i>Medicago truncatula</i>	Barrel Medic		■
	<i>Trifolium arvense</i> var. <i>arvense</i>	Hare's-foot Clover		X
Geraniaceae	<i>Erodium aureum</i>	–	■	
	<i>Erodium cicutarium</i>	Common Heron's-bill, Common Storksbill, Common Crowfoot	■	■
Iridaceae	<i>Moraea setifolia</i>	Thread Iris		■
Lamiaceae	<i>Marrubium vulgare</i>	Horehound, White Horehound	X	X
	<i>Salvia verbenaca</i> var. <i>verbenaca</i>	Wild Sage		■
	<i>Salvia verbenaca</i> var. <i>vernalis</i>	Wild Sage	X *	X *
Malvaceae	<i>Malva parviflora</i>	Small-flowered Mallow		■
Papaveraceae	<i>Papaver hybridum</i>	Rough Poppy	■	■
Plantaginaceae	<i>Plantago coronopus</i> subsp. <i>commutata</i>	Buck's-horn Plantain		X *
Plumbaginaceae	<i>Limonium lobatum</i>	Winged Sea Lavender		■
Poaceae	<i>Alopecurus geniculatus</i>	Knee-jointed Foxtail, Marsh Foxtail		■
	<i>Avellinia michelii</i>	–		■
	<i>Avena barbata</i>	Bearded Oats	X	■
	<i>Avena fatua</i>	Wild Oats	■	
	<i>Briza minor</i>	Lesser Quaking Grass, Shivery Grass		X
	<i>Bromus madritensis</i>	Lesser Brome, Madrid Brome	■	■
	<i>Bromus rubens</i>	Red Brome	X	■
	<i>Hordeum glaucum</i>	Northern Barley Grass	■	■
	<i>Hordeum leporinum</i>	Wall Barley, Common Foxtail, Barley Grass	■	■
	<i>Lamarckia aurea</i>	Feathery Barley Grass, Goldentop		■
	<i>Pentameris airoides</i> subsp. <i>airoides</i>	False Hair-grass	X	X
	<i>Poa annua</i>	Winter Grass, Annual Meadow Grass, Goose Grass, Annual Poa	■	
	<i>Rostraria cristata</i>	Annual Cat's Tail	X *	■
	<i>Rostraria pumila</i>	Tiny Bristle Tail, Roughtail	X	■
	<i>Schismus barbatus</i>	Arabian Grass	X	■
	<i>Vulpia muralis</i>	Wall Fescue	■	■
	<i>Vulpia myuros</i> f. <i>myuros</i>	Rat's Tail Fescue	X	■



Flowering Plants				
Family	Species	Common Name	Hiltaba	GRNP
Primulaceae	<i>Lysimachia arvensis</i>	Scarlet Pimpernel	X	X
Rubiaceae	<i>Galium murale</i>	Small Goosegrass, Small Bedstraw		■
	<i>Galium spurium</i>	False Cleavers		■
Scrophulariaceae	<i>Zaluzianskya divaricata</i>	Spreading Night Phlox		■
Solanaceae	<i>Lycium ferocissimum</i>	African Boxthorn		■
	<i>Nicotiana glauca</i>	Tree Tobacco	X *	■
	<i>Solanum nigrum</i>	Black Nightshade, Black Berry Nightshade	■	■
Verbenaceae	<i>Verbena supina</i> var. <i>erecta</i>	Trailing Verbena	■	

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Glossary



C

Cryptogam

A plant that reproduces by spores, without flowers or seeds. Includes bryophytes (hornworts, liverworts, mosses), lichens, fungi, slime moulds and algae.

E

Ecological communities

Unique and naturally occurring groups of plants and animals. Their presence can be determined by factors such as soil type, position in the landscape, climate and water availability.

M

Macrofungi

Fungi that produce large fruiting bodies, i.e. those visible to the naked eye and generally one centimetre or more in width or height.

Mesic

Species adapted to habitats with a moderate or well-balanced supply of moisture.

P

Putative new species

A species that has been recognised by an expert as never having been named or described in the scientific literature. Note that specimens may already be in museum or herbarium collections.

R

Range extension

Increase in the known distribution or area of occurrence of a species.

S

Stygofauna

Animals that live in underground water, including crustaceans, worms, snails, insects, other invertebrate groups, and in Australia a blind fish and a newt.

T

Taxon (plural taxa)

A member of any particular taxonomic group (e.g. a species, genus, family).

Taxonomy

The categorisation and naming of species.

The science of identifying and naming species, as well as grouping them based on their relatedness.

U

Undescribed taxon

A taxon (usually a species) that has not yet been formally described or named.

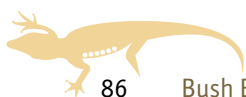
V

Vagrant lichen

Lichens that are either not attached to a substrate or can become unattached, yet continue to survive.



Common Wallaroo (*Macropus robustus*), Nicholas Birks © Copyright, South Australian Museum



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FRONT COVER Blue-Banded Bee (*Amegilla chlorocyanea*). Native bees were particularly well represented in the invertebrate specimens collected by the survey, with 115 species found, Nicholas Birks © Copyright, South Australian Museum

