



Little Desert, Victoria 2019: Bush Blitz expedition report



Australian Government
Department of Agriculture,
Water and the Environment

BHP

earthwatch
AUSTRALIA



Australian Government
Parks Australia

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Contributors

Bush Blitz is coordinated by Parks Australia, which is part of the Australian Government Department of Agriculture, Water and the Environment. The program is a partnership between the Australian Government, BHP and Earthwatch Australia.

Research agencies involved in this Bush Blitz were Museums Victoria, Royal Botanic Gardens Victoria, the University of New South Wales and Queensland Museum.

Photo credits

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Front cover images: (from top left, clockwise) an undescribed wolf spider genus (family Lycosidae), Joseph Schubert © Museums Victoria; Hooded Caladenia (*Caladenia cucullata*), Heath Warwick © Museums Victoria; a moth (*Thudaca haplonota*), Heath Warwick © Museums Victoria; a teacher assisting with pitfall trapping © Copyright, Earthwatch.

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Summary

From 21 October to 1 November 2019, Bush Blitz led an expedition to Little Desert National Park in the Wimmera region of western Victoria.

Surveys and collections filled knowledge gaps, provided important material for future genetic and taxonomic studies, and extended the known ranges of species.

At least 905 species were recorded during the Bush Blitz and 17 of those may be completely new to science (2 bees, 1 moth, 8 true bugs, 6 spiders). Many unnamed or informal invertebrate taxa were collected. These may assist scientists to revise, compare and describe species in the future.

Three threatened vertebrates and 27 threatened vascular plant species were recorded. See the Threatened Species section for more detail.

Nineteen introduced and pest animal species were recorded, along with 41 introduced plant species.

Highlights of the expedition include:

- collecting 5 specimens (representing both sexes) of *Euryglossa pammicta*, a native bee species that had not been seen or collected anywhere since 1969
- recording 5 moth species that are new records for Victoria, including one Erebidæ species that may be new to science
- a higher than expected abundance and diversity of peacock spiders (*Maratus* sp.)
- notable range extensions for 6 plant and fungal species, including a common smut-fungus (*Tilletia ehrhartae*) previously known in Victoria from only 3 collections
- a high diversity of small moss species in soil crusts at Lake Hindmarsh Lake Reserve and Birdcage Nature Conservation Reserve
- identifying areas of high conservation value outside Little Desert National Park, in particular a block of vegetation continuous with Foresters Spring Bushland Reserve and the north-west portion of Tallageira Nature Conservation Reserve which contained high plant diversity and localised species.

Introduction

About Bush Blitz

The Bush Blitz program documents plants and animals in selected properties across Australia to support the discovery of new species, complement and complete existing collections, and provide information to support land management and conservation.

Bush Blitz is an initiative of the Australian Government, through Parks Australia, in partnership with BHP and Earthwatch Australia. 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.

An estimated 580,000–680,000 species are found in Australia (Chapman 2009), but three-quarters of this biodiversity is yet to be identified. Around 45% of continental Australia and over 90% of our marine area have never been comprehensively surveyed by scientists. Increasing our understanding of Australia's biodiversity is critical for conservation, biosecurity, agriculture, human and animal health and many other activities.

Since the Bush Blitz program began in 2010, more than 1,700 species have been discovered during Bush Blitz expeditions across Australia.

In addition to species discovery, Bush Blitz objectives include raising public awareness of biodiversity, and improving environmental, social and educational outcomes for local and Indigenous communities. While some of these objectives are met during expeditions – through Bush Blitz TeachLive, teacher workshops and community days – they are out of scope for this report.

About this report

This report summarises the initial scientific findings of an expedition to Little Desert National Park in Victoria. Information in this report has been extracted from the [scientific reports](#) provided by expedition members. Locational data for all flora and fauna records are provided to reserve managers and are publicly available through the [Atlas of Living Australia](#) (ALA).

Little Desert Bush Blitz

Bush Blitz led an expedition to Little Desert National Park, in the Wimmera region of western Victoria, from 21 October to 1 November 2019.

The Traditional Owners of the region are the Wotjobaluk, Jaadwa, Jadawadjali, Wergaia and Jupagulk (WJJWJ or collectively Wotjobaluk) Peoples, who maintain a strong connection to country.

Little Desert National Park was first gazetted in 1968 to preserve the 'eastern block' of the desert. The 'central' and 'western' blocks were added in 1988. The park now covers approximately 132,647 hectares and extends from the Wimmera River in the east to the South Australian border in the west. The park is currently managed by Parks Victoria under a cooperative agreement with the Wotjobaluk Peoples, represented by the Barengi Gadjin Land Council Aboriginal Corporation.

The park forms a large remnant of native vegetation – an ‘island’ in a largely cleared landscape. This makes it a refuge for flora and fauna and a snapshot of the regional biodiversity before European settlement. With Neds Corner Station, Murray-Sunset National Park, Big Desert Wilderness Park and Grampians National Park, Little Desert National Park forms an important network protecting the wide biodiversity of western Victoria.

The park consists mainly of deep sandy soils with very low fertility, interspersed with small pockets of clay soils. There are occasional rocky, sandstone outcrops and buckshot rises. It's called a ‘desert’ because of the sand dunes and relatively low rainfall, however it supports a diverse vegetation ranging from woodlands of Yellow Gum (*Eucalyptus leucoxylon*), River Red Gum (*Eucalyptus camaldulensis*) and Black Box (*Eucalyptus largiflorens*) through open woodlands of Desert Stringybark (*Eucalyptus arenacea*) to expansive Desert Banksia (*Banksia ornata*) and Sheoak heathlands. Significant vegetation and habitats include Malleefowl habitats, Yellow Gum woodlands in the western block and the Wimmera Heritage River corridor (Victorian Government, 1996).

The Western Desert region of Victoria is a unique environment, with a number of herpetofauna found nowhere else in the state, and extremely high reptile diversity for Victoria. The herpetologists aimed to add tissue samples and recent voucher specimens to Museums Victoria's collection, and to investigate the impact of a recent change in fire management policy on populations.

Previous surveys extensively studied the vertebrate fauna of the park, however very little is known about the invertebrates. A number of small-scale surveys, conducted by Museums Victoria staff and affiliated researchers, have focused on terrestrial invertebrates over the years. Past large-scale survey efforts have concentrated on the Mallee region north of Little Desert National Park during the 1970s, and the Grampians region to the south-east in a 2012 Bioscan, rather than Little Desert National Park itself. It was expected that terrestrial invertebrates would be abundant and diverse throughout the park.

Prior to the expedition, a search on the ALA revealed only 10 records of bees for the park, including 5 records for the European Honeybee (*Apis mellifera*).

There was also relatively little information on the moths of the park. The moth team used existing records to produce a list of 234 species for the park. During the expedition, they hoped to extend the species list and identify species of particular interest.

The Bush Blitz expedition was the third survey of the park for true bugs (Heteroptera) by a member of the Cassis Laboratory, after Prof. Cassis conducted sampling in 1995 and 2002.

Odonata (dragonflies and damselflies) were not known to have been sampled in the park prior to this expedition however, as little permanent freshwater other than the Wimmera River exists in the park, a high diversity of these insects was not expected.

There are very few records of molluscs from the region in state collections, so one aim for the mollusc team was to reveal whether this is due to the lack of survey effort or that the environment simply harbours low diversity and/or densities, due either to ecological constraints or biogeographic history.

Little Desert National Park has a moderate diversity of plant species, compared with other reserves in Victoria, and has been well collected from and reasonably thoroughly surveyed for flora in the past. Some plant and fungi species distributions in this region are largely based on old records with imprecise location and habitat details, and this expedition aimed to better document their distribution.

The park is important for protecting large tracts of mallee, heathland and woodland on deep sand. Several smaller reserves exist around the park that protect similar vegetation.

Reserves to the north of the park represent small islands of remnant vegetation in a sea of agricultural land in the Wimmera region. This area has largely been cleared due to its more fertile soils, so vegetation is quite different to that of the nearby park. These small remnants are therefore of high conservation value, and, compared with the park, are generally poorly surveyed and under collected.

Reserves south of the park occur in an area of relatively higher rainfall, and often consist of large ephemeral swamps, both fresh and saline. This vegetation is also quite distinct from the park. These areas are often quite inaccessible and are also relatively under collected.

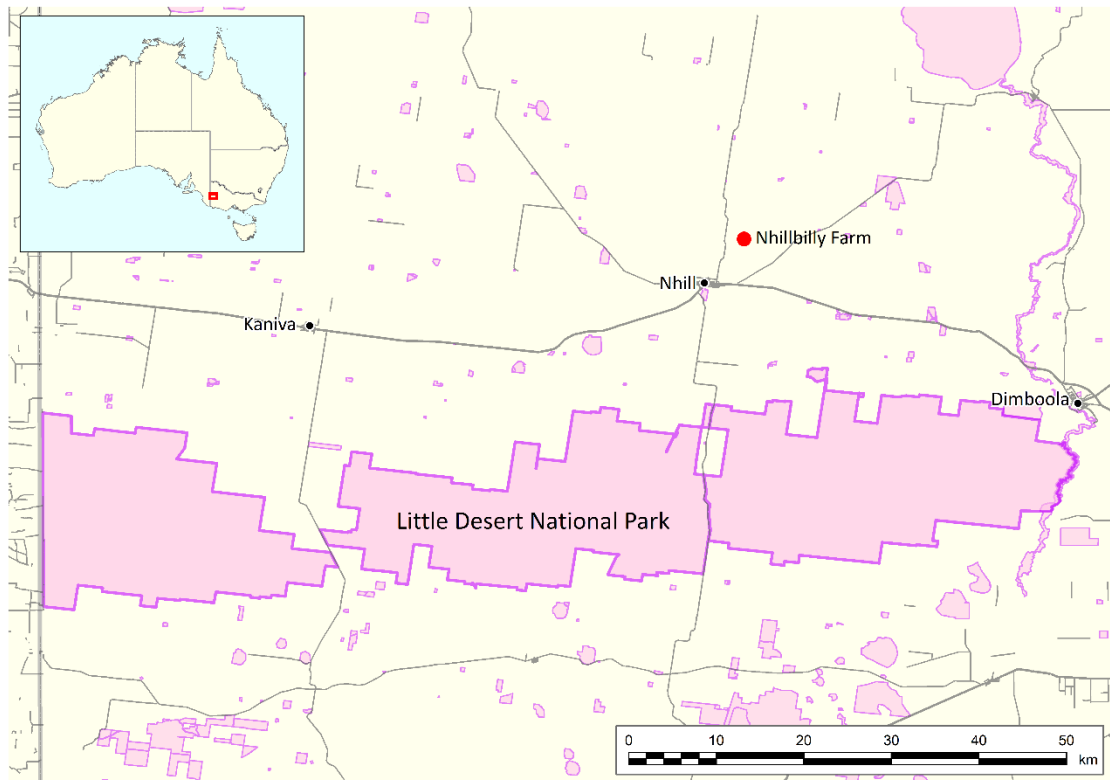
Based on the extensive history of botanical collection in this region and the degradation of the vegetation surrounding the park, it was considered unlikely that any new native plant records for Victoria would be made. There was a greater likelihood of new fungi species being discovered in the region, because fungi are far less thoroughly collected, however the dry conditions around the time of the expedition were not favourable for fungal discoveries. It was expected that range extensions might be recorded for some plants, especially introduced species.

Study area

In addition to Little Desert National Park, some expedition members, particularly the botanists, visited protected areas to the north and south of the park. Specimens were also collected opportunistically, including at Nhillbilly Farm which was base camp for the duration of the expedition.

Map 1 shows the location of Little Desert National Park and Nhillbilly Farm. Protected areas are indicated with pink shading but not all were visited. The towns of Kaniva, Nhill and Dimboola are also shown.

Map 1 Locations visited, 21 October to 1 November 2019



Note: For a map of collection sites see [Appendix B](#).

Expedition team

Logistics

Bush Blitz provided the logistical coordination and overall leadership for the expedition. The Bush Blitz team consisted of Kate Garrock, Jo Harding, Haylee Weaver and Helen Cross.

Scientific

Museums Victoria (MV) and the Royal Botanic Gardens Victoria (RBGV) were the host institutions for this Bush Blitz, providing the core group of personnel and accessioning the specimens into their collections. Experts from Wimmera Catchment Management Authority (Wimmera CMA), Wildlife Profiles Pty Ltd, the University of New South Wales (UNSW) and Queensland Museum (QM) also conducted field and laboratory work and are included in Table 1.

Bush Blitz TeachLive

Five teachers from around Australia participated in Bush Blitz TeachLive, a collaborative program between the Bush Blitz partners and the Australian Science Teachers Association. Working alongside scientists, the teachers reinvigorated their love for science, generated new ideas and learned new skills to take back to their schools. Teachers taught 'live' to their classrooms via the TeachLive website and video conferencing sessions. Sandra McCullough and Maria Garcia Rojas from Earthwatch Australia coordinated the TeachLive activities. TeachLive participants were Jeff Scott (WA), Lynne Nadebaum (VIC), Michael Duffy (TAS), Todd Rogers (QLD) and Catarina Murphy (QLD).

Photography

Heath Warwick and Ben Healley, from Museums Victoria, were the scientific photographers.

Figure 1 Some members of the expedition team at the Nhill community day



Photograph: Heath Warwick © Copyright, Museums Victoria.

Methods

Taxonomic groups studied and personnel

A number of taxonomic groups were selected as targets for study. Table 1 lists the groups surveyed and the personnel who undertook the fieldwork, made identifications and reported on the findings.

Table 1 Taxonomic groups surveyed and personnel

Group	Common name	Personnel and affiliation
Mammalia	Mammals	Ben Holmes (Wimmera CMA)
Reptilia and Amphibia	Reptiles and amphibians	Joanna Sumner (MV) Peter Robertson (Wildlife Profiles Pty Ltd) Ricky-Lee Erickson (MV) Maik Fiedel (MV) Till Ramm (MV) Sam Botting (MV)
Apoidea	Native Australian bees	Ken Walker (MV)
Lepidoptera	Moths	Cathy Powers (MV) Peter Marriott (MV) Nish Mohamed Nizar (MV)
General invertebrates	General invertebrates	Simon Hinkley (MV) Claire Keely (MV)
Heteroptera	True bugs	Arlee McMahan (UNSW)
Odonata	Dragonflies and damselflies	Richard Marchant (MV)
Mollusca	Terrestrial and freshwater snails	Adnan Moussalli (MV) Melanie Mackenzie (MV) Chris Rowley (MV)
Arachnida	Spiders	Barbara Baehr (QM) Joseph Schubert (MV)
Vascular flora and cryptogams	Flowering plants, liverworts, mosses and fungi	Andre Messina (RBGV) Val Stajsic (RBGV) Daniel Ohlsen (RBGV)

Parks Victoria staff Laurie Norman and Gavin Read assisted scientists with site selection and specimen collection. Di Bray (MV) coordinated the Museums Victoria staff in the field.

Other personnel, including but not limited to Gerry Cassis (UNSW), Marilyn Hewish (MV) and Ted Edwards (CSIRO), assisted with making identifications and reporting. These personnel and their roles are mentioned in the scientific reports.

Site selection and collection methods

All scientists surveyed 2 standard survey sites selected by Bush Blitz. Each standard survey site was centred on a point (permanently marked), but the actual area surveyed varied between taxa. Standard methodologies were used to sample these sites.

The use of standard survey sites provides a unique opportunity to examine broad-spectrum biodiversity. Among other benefits, it allows land managers to use these sites for ongoing monitoring and generates a national dataset that can be used to underpin conservation and land management decisions.

Apart from standard survey sites, site selection and collection methods were left to the discretion of the individual scientist. When selecting sites, scientists prioritised areas that were under-surveyed and had high potential for new or significant discoveries. They also considered the suitability of the site based on access, collection technique, habitat type and time available. Site locations were recorded using global positioning systems. Specific details about site selection and collection methods can be found in the scientific reports.

Figure 2 Barbara Baehr and Helen Cross collecting spiders



Photograph: Heath Warwick © Copyright, Museums Victoria.

Identification and curation

The specimens taken were identified using the holdings of museums and herbaria and available literature (references are provided in the scientific reports).

Fauna specimens were deposited with Museums Victoria, with duplicates of Heteroptera specimens deposited in the UNSW entomology collection. Flora specimens were deposited at the National Herbarium of Victoria.

Results

Summary of records

Preliminary results indicate that at least 905 species were recorded during the expedition, including approximately 17 putative new species – these await formal identification. Three threatened animal species, 27 threatened plant species, 19 introduced and pest animal species and 41 weed species were also recorded.

Table 2 provides a summary of the flora and fauna records made on the expedition.

Table 2 Summary of flora and fauna records

Group	Common name	Total species recorded	Putative new species	Threatened species	Introduced and pest species
Mammalia	Mammals	3	0	0	0
Aves	Birds	1	0	1	0
Reptilia	Reptiles	18	0	2	0
Amphibia	Frogs	2	0	0	0
Hymenoptera	Ants	33	0	0	0
	Bees	24	2	0	1
	Wasps	2	0	0	0
Lepidoptera	Moths	188	1	0	9
Trichoptera	Caddisflies	2	0	0	0
Diptera	Flies	1	0	0	0
Coleoptera	Beetles	52	0	0	0
Heteroptera	True bugs	62	8	0	2
Auchenorrhyncha	Planthoppers and froghoppers	3	0	0	0
Neuroptera	Lacewings	2	0	0	0
Psocoptera	Booklice	1	0	0	0
Dermaptera	Earwigs	2	0	0	1
Orthoptera	Grasshoppers, crickets, katydids	3	0	0	0
Blattodea	Cockroaches	4	0	0	0
Odonata	Dragonflies and damselflies	7	0	0	0
Mantodea	Mantids	2	0	0	0
Thysanoptera	Thrips	1	0	0	0
Zygentoma	Silverfish	1	0	0	0
Collembola	Springtails	2	0	0	0
Myriapoda	Centipedes and millipedes	4	0	0	1
Arachnida	Spiders	132	6	0	0
	Scorpions	3	0	0	0
	Pseudoscorpions	1	0	0	0
	Mites	1	0	0	1

Group	Common name	Total species recorded	Putative new species	Threatened species	Introduced and pest species
Isopoda	Woodlice	1	0	0	1
Gastropoda	Snails and slugs	11	0	0	3
Vascular flora	Flowering plants	313	0	27	41
Bryophytes	Liverworts	2	0	0	0
	Mosses	16	0	0	0
Fungi	Fungi	5	0	0	0
Total		905	17	30	60

Note: Threatened species include those listed as threatened under the Commonwealth EPBC Act or an equivalent listing under the Flora and Fauna Guarantee Act 1988 (Victoria). Introduced and pest species may include species that are native to Australia.

Species lists

Lists of all species recorded during the expedition ([Appendix A](#)) were compiled using data from participating institutions.

Some specimens were only able to be identified to family or genus level. This is partly because identification of specimens is very time-consuming, with detailed microscopic examination needed in many cases. Some groups are also ‘orphans’ – currently no experts are working on them or are available to work on them and the taxonomic literature is out of date. Species-level identification is therefore not possible for these groups.

Unidentified Bush Blitz specimens are held in institutional collections where they are available for future study. Collections hold many such specimens, among them species not yet described (that is, unnamed species) as well as described species that have not yet been identified. For example, the Australian National Insect Collection holds tens of thousands of unidentified specimens. Specimens often wait decades before the resources become available for their study. A key component of Bush Blitz is the funding of taxonomic work on specimens collected during Bush Blitz expeditions.

Nomenclature and taxonomic concepts used in this report are consistent with the Australian Faunal Directory (AFD), Australian Plant Name Index and Australian Plant Census, AusMoss, and the Catalogue of Australian Liverworts and Hornworts.

Discussion

Putative new species

Here we use the term 'putative new species' to mean an unnamed species that, as far as can be ascertained, was identified as a new species as a direct result of this Bush Blitz. A putative new species is confirmed as a new species once it is named and its description is published.

Approximately 17 putative new species were discovered during the expedition. Further research may reveal additional new species in the material collected. Many invertebrate specimens have not yet been identified to species and taxonomic work on these specimens will continue for many years.

Bees

There were 2 species of *Lasioglossum* collected that are thought to be new to science. *Lasioglossum (Chilalictus)* sp. nov. is in a subgenus represented by 3 species that have lateral hair tufts on the first metasomal (abdominal) segment. This new species has such lateral hair tufts but is not one of those 3 known species. *Lasioglossum (Ctenonomia)* sp. nov. is in a subgenus that has not been revised, however the mesoscutal (thorax) sculpture pattern is different from that found in the described species.

Moths

There are probably a number of moth species new to science among the 40 unidentified taxa collected. One unidentified species, from the Erebidæ family, is certainly a new record for Victoria and, if it cannot be matched to a specimen found interstate, it may be new to science.

True bugs

Australian Heteroptera (true bugs) comprise approximately 2,500 described species (AFD). Bush Blitz Phase 1 surveys revealed 1,391 Heteropteran species, 391 of which are new to science. In their report to the ABRS on Bush Blitz Phase 1, Prof. Cassis and Prof. Laffan indicated the species taxonomic accumulation curve of Australian Heteroptera is not levelling and predicated there are approximately 6,500 species in total.

Of the 62 species of true bugs collected during the expedition, 8 are recognised as putatively new to science – 6 Miridae, 1 Tingidae and 1 Rhyparochromidae. Four of these new species are only represented by a single specimen.

Figure 3 New species of true bug discovered on the expedition



Austromiris sp_BBLDORTHO001_msp.013 *Myrtlemiris* sp_BBLDMYRT002_msp.048

Photograph: © Copyright, University of New South Wales

Spiders

At least 6 species of spider were collected that were previously unknown to science. The 2 new miturgid species are likely sister species to one currently being described by Robert Raven. Salticidae gen. nov. sp. nov. cf. *Saitis* sp. is a relative of *Saitis virgatus*, which itself is likely misplaced, and both species may require a new genus. There were also 2 new euophryine species, belonging to an undescribed genus of about 5 striped species which is widespread in Australia. The new peacock spider, *Maratus inaquosus*, was subsequently described by Joseph Schubert in 2020. Further investigation into the unidentified material will likely produce several more new species.

Threatened species

Approximately 92% of Australian plants, 87% of mammals, 93% of reptiles and 45% of birds are endemic (Chapman 2009). Changes to the landscape resulting from human activity have put many of these unique species at risk. Over the last 200 years, many species have gone extinct; many others are considered to be threatened – that is, at risk of extinction.

In this report, the term ‘threatened species’ refers to species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (EPBC Act) or the *Flora and Fauna Guarantee Act 1988* (Victoria) (FFG Act).

At the time of the expedition Victoria had multiple lists of threatened species, however, recent amendments to the FFG Act have established a single comprehensive list of threatened flora and fauna species. This has resulted in a change to the conservation status of several species since the scientific reports were submitted. The conservation status given in this report is based on the new single [FFG Act Threatened List](#) (October 2021).

During the expedition, 30 threatened species were recorded – all 30 are listed under the FFG Act and 3 are also listed under the EPBC Act – Malleefowl (*Leipoa ocellata*), Hairy-pod Wattle (*Acacia glandulicarpa*) and Colourful Spider-orchid (*Caladenia colorata*).

Fauna

The vertebrate team recorded 2 threatened reptile species during the expedition – Lined Worm-Lizard (*Aprasia striolata*) and Heath Monitor (*Varanus rosenbergi*). Five individuals of Lined Worm-Lizard (*Aprasia striolata*) were found in the pit trapping lines – one in the park and 4 on Urimbirra Cooperative land directly to the north of the park. These slender burrowing lizards are found in a variety of dry and sandy soils. The Victorian Western Desert region is at the eastern extent of their distribution. Much of the burrowing lizard's habitat has been cleared for farming or tree plantation.

In addition, the botanical team identified Malleefowl (*Leipoa ocellata*) and several inactive Malleefowl nests in the high quality remnant mallee and woodland of Foresters Spring Bushland Reserve and the adjoining unreserved block of vegetation.

Very few invertebrates are listed as threatened because there is limited information on their status and distribution, factors on which listings could be based.

Table 3 Threatened fauna

Family	Species	Common name	Status
Megapodiidae	<i>Leipoa ocellata</i>	Malleefowl	Vulnerable (EPBC Act & FFG Act)
Pygopodidae	<i>Aprasia striolata</i>	Lined Worm-lizard, Striped Worm-lizard	Endangered (FFG Act)
Varanidae	<i>Varanus rosenbergi</i>	Heath Monitor, Rosenberg's Goanna	Critically Endangered (FFG Act)

Plants

There were 27 threatened plant species recorded during the expedition.

Two large populations of *Levenhookia pusilla* were observed near Mount Moffat in Little Desert National Park. This species had been recorded only twice before in Victoria, over 20 years ago, with both occasions being near Mount Moffat. Populations appeared in burnt vegetation patches and have responded positively to the frequency and severity of fire that has occurred in this area.

Table 4 Threatened vascular plants

Family	Species	Status	Comments
Asteraceae	<i>Brachyscome readeri</i>	Endangered (FFG Act)	Tallageira Nature Conservation Reserve; common at the site, hundreds of plants
Asteraceae	<i>Centipeda crateriformis</i> subsp. <i>compacta</i>	Endangered (FFG Act)	Morea State Forest and Tallageira Nature Conservation Reserve; common
Asteraceae	<i>Senecio hispidissimus</i>	Endangered (FFG Act)	Tallageira Nature Conservation Reserve; common
Asteraceae	<i>Vittadinia cuneata</i> var. <i>morrisii</i>	Endangered (FFG Act)	Miram; scattered
Asteraceae	<i>Vittadinia megacephala</i>	Endangered (FFG Act)	Mitre Lake Nature Conservation Reserve; very rare, only scattered plants
Chenopodiaceae	<i>Tecticornia syncarpa</i>	Endangered (FFG Act)	Lake Wyn Wyn, southern end; common at the site, hundreds of plants
Ericaceae	<i>Leucopogon virgatus</i> var. <i>brevifolius</i>	Endangered (FFG Act)	Little Desert NP, central block; uncommon

Family	Species	Status	Comments
Fabaceae	<i>Acacia glandulicarpa</i>	Vulnerable (EPBC Act) & Endangered (FFG Act)	Foresters Spring Bushland Reserve; scattered plants in reserve
Fabaceae	<i>Acacia simmonsiana</i>	Endangered (FFG Act)	Foresters Spring Bushland Reserve; about 20 plants
Fabaceae	<i>Daviesia pectinata</i>	Critically Endangered (FFG Act)	Kiata South Rd, on southern edge of Kiata Lowan Sanctuary; locally common, hundreds of plants in area
Fabaceae	<i>Phyllota remota</i>	Endangered (FFG Act)	Foresters Spring Bushland Reserve; 1 plant seen, but area not searched
Goodeniaceae	<i>Goodenia benthamiana</i>	Endangered (FFG Act)	Kiata South Rd, on southern edge of Kiata Lowan Sanctuary; scattered plants
Malvaceae	<i>Thomasia petalocalyx</i>	Endangered (FFG Act)	Morea Bushland Reserve; common at site
Myrtaceae	<i>Eucalyptus wimmerensis</i> subsp. <i>grata</i>	Critically Endangered (FFG Act)	Lawloit 150 Bushland Reserve; co-dominant
Myrtaceae	<i>Melaleuca halmaturorum</i>	Endangered (FFG Act)	Lake Wyn Wyn Wildlife Reserve; dominant, forming a woodland
Orchidaceae	<i>Caladenia colorata</i>	Endangered (EPBC Act) & Critically Endangered (FFG Act)	Tallageira Nature Conservation Reserve; occasional
Orchidaceae	<i>Prasophyllum</i> sp. aff. <i>occidentale</i> C	Endangered (FFG Act)	Miram Piram 138 Bushland Reserve; very rare, 6 plants
Orchidaceae	<i>Prasophyllum spadiceum</i>	Critically Endangered (FFG Act)	Tallageira Nature Conservation Reserve; widely scattered in the area
Rubiaceae	<i>Asperula wimmerana</i>	Endangered (FFG Act)	Birdcage Nature Conservation Reserve; forming extensive cover over several square metres
Rutaceae	<i>Boronia filifolia</i>	Endangered (FFG Act)	Little Desert NP; only 1 plant seen
Rutaceae	<i>Phebalium stenophyllum</i>	Endangered (FFG Act)	Miram South Rd; scattered plants
Rutaceae	<i>Zieria veronicea</i> subsp. <i>veronicea</i>	Endangered (FFG Act)	Little Desert NP; common at 2 sites
Santalaceae	<i>Choretrum glomeratum</i> var. <i>chrysanthum</i>	Endangered (FFG Act)	Foresters Spring Bushland Reserve; 1 plant
Santalaceae	<i>Choretrum glomeratum</i> var. <i>glomeratum</i>	Endangered (FFG Act)	Kiata South Rd, on southern edge of Kiata Lowan Sanctuary; 1 plant seen
Scrophulariaceae	<i>Eremophila gibbifolia</i>	Vulnerable (FFG Act)	10 m north of Kiata South Road; 1 plant seen
Solanaceae	<i>Nicotiana suaveolens</i>	Endangered (FFG Act)	Lake Hindmarsh; restricted to narrow sand dune, ~50 plants seen
Stylidiaceae	<i>Levenhookia pusilla</i>	Critically Endangered (FFG Act)	Little Desert NP, 2 sites; locally common following ecological burn

Introduced and pest species

Conservation reserves help to 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 introduced 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.

Figure 4 European Honey Bees drinking at Broughtons Waterhole



Photograph: Ben Healley © Copyright, Museums Victoria.

Invertebrates

The European Honey Bee (*Apis mellifera*) was observed at all study sites, mostly in low numbers on flowers, except where a feral hive was found in the base of eucalypt tree at Broughtons Waterhole. The European Honey Bee was introduced to Australia for honey production by early European settlers in about 1822. Managed hives are kept commercially for honey production, but feral bees have become an increasing threat and are now found throughout Australia. They are generally aggressive, have a tendency to swarm and pose a future health risk to managed hives. Feral European Honey Bees may outcompete native fauna for floral resources or tree hollows for nesting and may disrupt natural pollination processes. However, there is insufficient research on interactions between European Honey Bees and Australian biota to fully describe their impacts. Eradication is not feasible on a broad scale, but swarm traps or baiting could be used at localised sites frequently visited by the public.

The larvae of some native moth species may feed on crops, pastures or plantations, generally related to their native hosts. Most of the species listed in Table 5 generally frequent open country and all but one was observed at Nhillbilly Farm. Noctuids are strong fliers and some species are mobile, for example, migratory Bogong Moths (*Agrotis infusa*). The adults may visit or invade nearby woodlands for nectar or in migration events. Apple Looper (*Phrissogonus laticostata*) inhabits woodlands and forests.

The European Earwig (*Forficula auricularia*) was probably introduced to Australia from Europe prior to the 1900s. It is now an invasive pest found widely throughout southern Australia. The species eats a variety of broadacre and horticultural crops, however there are no known natural enemies that can effectively control it in Australia. The impact of the European Earwig on Australia's fauna has not yet been studied, however the earwig has been implicated in the decline of several threatened and endangered invertebrate species in America. Soil tillage

(mechanical agitation of soil, such as digging, stirring or overturning) may help control numbers. One specimen was collected during the survey period, from Nhillbilly Farm via direct searching.

The Portuguese Millipede (*Ommatoiulus moreletii*) is native to south-western Europe and was accidentally introduced to Australia in 1953. It has become a common pest found in South Australia, Victoria, Tasmania, ACT, New South Wales and Western Australia. The millipede's distribution in Australia is increasing and the species is expected to continue to spread much further. The species is generally found in grassland, woodland and suburban gardens and invades houses in large numbers in autumn and spring. The Portuguese Millipede is most problematic to emerging crop seedlings, however biological control agents have been trialled with limited success. The species was observed at almost all study sites throughout the survey period.

Porcellionides pruinosus is a cosmopolitan woodlouse (or slater), introduced from Europe and now widespread throughout warmer parts of the world. While terrestrial isopods are often mistaken for insects, it is in fact a crustacean. Two specimens were collected during the survey period, from Nhillbilly Farm and Horseshoe Bend via direct searching.

During the expedition, 3 introduced snail species were recorded – 2 terrestrial and 1 freshwater. While the 2 terrestrial species, *Microxeromagna lowei* and *Cernuella virgata*, were not recorded in the park, it is highly likely they are established at sites along the eastern boundary, particularly in riparian habitat along Wimmera River. Additional surveys would be needed to confirm this. *M. lowei* was only recorded in riparian habitat at Jeparit, and *C. virgata* at Nhillbilly Farm and Loch Iel (Pink Lake) Lake Reserve, both at very high abundance. Both species are regarded as serious agricultural pests, especially for grain crops. The freshwater snail, *Physa acuta* is well established in most Victorian waterways, as is the case in the Wimmera River. The species is highly invasive, tolerates a wide spectrum of environmental conditions and is typically found at very high densities. This species competitively suppresses the growth rate of native species.

Table 5 lists the introduced and pest invertebrate species recorded during the expedition.

Table 5 Introduced and pest invertebrate species

Group	Family	Species	Common name	Comments
Bees	Apidae	<i>Apis mellifera</i>	European Honey Bee	Recorded at most sites; mostly low numbers
Crustacea	Philosciidae	<i>Porcellionides pruinosus</i>	na	Collected from 2 sites
Earwigs	Forficulidae	<i>Forficula auricularia</i>	European Earwig	1 specimen collected
Millipedes	Julidae	<i>Ommatoiulus moreletii</i>	Portuguese Millipede	Seen at most sites
Mites	Erythraeidae	<i>Rainbowia</i> sp.	na	na
Moths	Geometridae	<i>Phrissogonus laticostata</i>	Apple Looper	Common; minor pest
	Noctuidae	<i>Agrotis infusa</i>	Bogong Moth	Moderately common; of major economic importance
	Noctuidae	<i>Agrotis munda</i>	Brown Cutworm	Moderately common; minor pest

Group	Family	Species	Common name	Comments
	Noctuidae	<i>Agrotis porphyricollis</i>	na	Common; minor pest
	Noctuidae	<i>Chrysodeixis argentifera</i>	Tobacco Looper	Moderately common; minor pest
	Noctuidae	<i>Helicoverpa punctigera</i>	Native budworm	Common; of major economic importance
	Noctuidae	<i>Mythimna (Pseudaletia) convecta</i>	na	Moderately common; of major economic importance
	Plutellidae	<i>Plutella xylostella</i>	Cabbage Moth	Uncommon; of major economic importance
	Pyalidae	<i>Etiella behrii</i>	Etiella Web Moth	Common; minor pest
Snails and slugs	Hygromiidae	<i>Cernuella virgata</i>	Vineyard Snail	Nhillbilly Farm, Loch Iel; very high abundance
	Hygromiidae	<i>Microxeromagna lowei</i>	Citrus Snail	Jeparit; very high abundance
	Physidae	<i>Physa acuta</i>	Acute Bladder Snail	Little Desert NP, eastern boundary, Wimmera River; very high abundance
True bugs	Lygaeidae	<i>Nysius vinitor</i>	Rutherglen Bug	Nhillbilly Farm; high hundreds to thousands; observed at light sheet, higher abundance on warmer nights
	Miridae	<i>Creontiades dilutus</i>	Green Mirid	Nhillbilly Farm; <100, low abundance at light sheet

na Not available.

Vascular plants

During the expedition, 41 introduced plant species were recorded. Several of these occurred in low numbers and could potentially be eradicated before they become too common. The botanical report includes additional detail on these species and recommendations for land managers.

Table 6 lists 3 species that are declared weeds in Victoria.

African Boneseed (*Chrysanthemoides monilifera* subsp. *monilifera*) is a serious environmental weed in parts of Victoria and a Weed of National Significance. At the time of the expedition, it was an infrequent weed in Birdcage Nature Conservation Reserve and Lake Hindmarsh Lake Reserve. In other parts of Victoria, this species has become highly invasive to the extent that it has become the dominant species within the vegetation and has displaced many native species. This species has the potential to form similarly extensive populations at the sites where it was recorded.

Horehound (*Marrubium vulgare*) is a widespread and troublesome weed in Victoria, particularly on alkaline soils and degraded or overgrazed pasture, sometimes colonizing bare, eroded ground.

African Lovegrass (*Eragrostis curvula*) was formerly known from a few scattered localities in Victoria but the species has become an abundant weed along roadsides in many areas. It is particularly troublesome in pasture, due to its ability to form a dense cover to the exclusion of other more desirable cropping or grazing species.

Table 6 Gazetted weeds

Family	Species	Common name	Location and comments
Asteraceae	<i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>	African Boneseed	Scattered plants at Birdcage Nature Conservation Reserve and 10 plants at Lake Hindmarsh
Lamiaceae	<i>Marrubium vulgare</i>	Horehound	Birdcage Nature Conservation Reserve; 1 plant, but area not searched
Poaceae	<i>Eragrostis curvula</i>	African Lovegrass	Birdcage Nature Conservation Reserve; common along road and abundant in paddock on east side of road

An additional 38 introduced plant species are listed in Table 7.

In Tallageira Nature Conservation Reserve, the botanical team were particularly concerned about an invasion of Orange Wattle (*Acacia saligna*) near an area with high plant diversity, notably 11 orchid species, including threatened species. *Acacia* species have the potential to produce thickets and outcompete many smaller species that contribute much of the diversity in the reserve, including orchids.

Acacia trineura is not listed here because it is indigenous to the region, however, it appears to have been originally planted at Lake Hindmarsh. This species self-seeds and suckers extensively and is now well established at the site, where millions of plants were observed.

Table 7 Non-gazetted weeds

Family	Species	Common name	Location and comments
Aizoaceae	<i>Mesembryanthemum nodiflorum</i>	Small Ice-plant	Lake Hindmarsh; common, thousands of plants; previously uncollected in the Wimmera
Asteraceae	<i>Centaurea melitensis</i>	Malta Thistle	Birdcage Nature Conservation Reserve; rare at site
Asteraceae	<i>Cotula coronopifolia</i>	Water-buttons	Near Jeparit (at mouth of river inlet) and at a dry billabong in Little Desert NP; common at both sites
Asteraceae	<i>Scorzonera laciniata</i> var. <i>calcitrapifolia</i>	na	Mitre Lake Nature Conservation Reserve; scattered plants
Boraginaceae	<i>Amsinckia calycina</i>	Hairy Fiddle-neck	Nhillbilly Farm; localised, ~20 plants
Boraginaceae	<i>Buglossoides arvensis</i>	Sheepweed	Birdcage Nature Conservation Reserve; ~20 plants
Caryophyllaceae	<i>Petrorhagia dubia</i>	Hairy Pink	West Wail Nature Conservation Reserve and Tallageira Nature Conservation Reserve; common at both sites
Crassulaceae	<i>Crassula natans</i> var. <i>minor</i>	Floating Pigmyweed	Mallee Dam Bushland Reserve; common at the site
Cyperaceae	<i>Isolepis hystrix</i>	Awned Club-rush	Lawloit 150 Bushland Reserve; hundreds of plants
Fabaceae	<i>Acacia iteaphylla</i>	Flinders Range Wattle	Goroke; hundreds of plants of various age classes, spread over several hundred metres, on both sides of the road; appear to have been originally planted, now naturalised; a serious environmental weed at the site
Fabaceae	<i>Acacia saligna</i>	Orange Wattle	Tallageira Nature Conservation Reserve; common; a very serious environmental weed in the reserve; poses a threat to habitat of

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Family	Species	Common name	Location and comments
			several threatened orchids including <i>Prasophyllum spadiceum</i>
Fabaceae	<i>Medicago minima</i>	Little Medic	Lake Hindmarsh; very common at site
Fabaceae	<i>Medicago polymorpha</i>	Burr Medic	Lake Hindmarsh; 2 plants, but area not searched
Fabaceae	<i>Medicago truncatula</i>	Barrel Medic	Lake Hindmarsh; common at site
Fabaceae	<i>Trifolium glomeratum</i>	Clustered Clover	Birdcage Nature Conservation Reserve; common at site
Fabaceae	<i>Trifolium hirtum</i>	Hairy Clover	Lake Hindmarsh; common at site
Fabaceae	<i>Trifolium scabrum</i>	Rough Clover	Miram; common at site
Gentianaceae	<i>Cicendia filiformis</i>	Slender Cicendia	Tallageira Nature Conservation Reserve; rare at site
Juncaceae	<i>Juncus capitatus</i>	na	Mallee Dam Bushland Reserve; only a few plants seen
Orchidaceae	<i>Disa bracteata</i>	na	Tallageira Nature Conservation Reserve, common at site; Morea State Forest, scattered plants
Orobanchaceae	<i>Parentucellia latifolia</i> ^a	na	Mallee Dam Bushland Reserve; scattered
Plantaginaceae	<i>Plantago bellardii</i>	Silky Plantain	Morea State Park and Goroke; common at both sites
Plumbaginaceae	<i>Limonium lobatum</i>	Winged Sea-lavender	Lake Hindmarsh; several patches up to 10 m x 10 m across
Poaceae	<i>Avellinia festucoides</i>	na	Mallee Dam Bushland Reserve; scattered plants
Poaceae	<i>Brachypodium distachyon</i>	False Brome	Lake Hindmarsh; common at site
Poaceae	<i>Briza maxima</i>	Large Quaking Grass	Tallageira Nature Conservation Reserve; common
Poaceae	<i>Briza minor</i>	Lesser Quaking Grass	Mallee Dam Bushland Reserve; scattered in the channels
Poaceae	<i>Ehrharta calycina</i>	Perennial Veldt-grass	Lake Hindmarsh Lake Reserve; observed at almost all sites and often the most abundant species; probably the most common weed species in the Wimmera
Poaceae	<i>Hordeum marinum</i>	na	Lake Hindmarsh; common at site
Poaceae	<i>Lagurus ovatus</i>	Hares-tail Grass	Tallageira Nature Conservation Reserve and Morea State Forest; common in some areas at both sites
Poaceae	<i>Lolium rigidum</i>	Wimmera Rye-grass	Horsham area, Wimmera River; common at site
Poaceae	<i>Parapholis incurva</i>	Coast Barb-grass	Lake Hindmarsh; abundant at site
Poaceae	<i>Pentameris airoides</i> subsp. <i>airoides</i>	na	Lawloit 150 Bushland Reserve; scattered
Poaceae	<i>Phalaris paradoxa</i>	Paradoxical Canary-grass	Wail State Forest; vast stands over lake bed
Poaceae	<i>Rostraria cristata</i>	Annual Cat's-tail	Lake Hindmarsh; scattered at site
Poaceae	<i>Tribolium acutiflorum</i>	na	Jeparit area, Wimmera River; locally common but restricted to saline areas

Family	Species	Common name	Location and comments
Ranunculaceae	<i>Adonis microcarpa</i>	Pheasants-eye Adonis	Lake Hindmarsh; 6 plants at one site and ~50 plants at a second; in Victoria previously known from 5 collections
Solanaceae	<i>Nicotiana glauca</i>	Tree Tobacco	Wimmera River; scattered along a billabong

a *Bellardia latifolia* in [VICFLORA](#). **na** Not available.

Range extensions

The known ranges of many species were extended, including new records for Victoria. The most notable range extensions are listed in Table 8.

The collection of 5 specimens of *Euryglossa pammicta* was significant, as this native bee had not been seen or collected since 1969, and there are only 12 known records for this species.

It is likely that 16 of the moth species recorded during the expedition had not been previously recorded in Little Desert National Park or its surrounds. Most of these records represent extensions of known ranges within Victoria, but 5 species appear to be new for Victoria. Of the species new for the state, *Pedois amaurophanes* and *Machaeritis aegrella* were recorded at all 3 sites surveyed within the park. They are therefore probably in widespread, established populations in the region. *Euphiltra angustior* was found only in agricultural land at Nhillbilly Farm. It was not detected in the denser, indigenous vegetation within the park.

Although there were no new state records in the flora collected, there were notable range extensions for 6 species. The grass *Anthosachne kingiana* subsp. *multiflora* was collected around 200 km from its closest previous collection. The moss *Bryobartramia novae-valesiae* is seldom collected and was around 120 km from its closest previous collection and the moss *Tayloria octoblepharum* was around 100 km from its closest previous collection and was in a much drier environment than is usually observed for this species.

Table 8 Range extensions

Group	Family	Species	Comments
Bees	Colletidae	<i>Euryglossa pammicta</i>	First record since 1969; known from NW Victoria
Moths	Crambidae	<i>Scoparia meyrickii</i>	350 km range extension from subalpine areas east of Melbourne
	Crambidae	<i>Tipanaea patulella</i>	200 km range extension from central Victoria; closest record Scarsdale
	Depressariidae	<i>Pedois amaurophanes</i>	New record for Victoria; known from NSW, closest record SW of Sydney 820 km
	Erebidae	<i>Arrade leucocosmalis</i>	80 km range extension from Grampians and central Victoria
	Erebidae	<i>Erebidae</i> sp.	New record for Victoria; needs further investigation and may be a new species
	Erebidae	<i>Halone servilis</i>	80 km range extension; previously known from Melbourne area to Grampians
	Gelechiidae	<i>Ardozyga desmatra</i>	Infill in range, Brisbane Ranges, Vic. (140 km) to Mt Gambier, SA (130 km)

Group	Family	Species	Comments
	Hypertrophidae	<i>Eupselia axiepaena</i>	230 km range extension from central Victoria; closest record Eppalock
	Oecophoridae	<i>Catadoceta xanthostephana</i>	320 km range extension; previously known east of Otway Ranges
	Oecophoridae	<i>Cryptophasa tetrazona</i>	New record for Victoria; known from Qld, NSW, ACT, SA, WA; closest record Lyrup, SA 250 km
	Oecophoridae	<i>Euchaetis incarnatella</i>	600 km range extension from Mallacoota in far-eastern Victoria
	Oecophoridae	<i>Euphiltra angustior</i>	New record for Victoria; recorded at Nhillbilly Farm; known from NSW, Qld; closest record Tinonee, NSW
	Oecophoridae	<i>Machaeritis aegrella</i>	New record for Victoria; known from NSW, ACT; closest record Namadgi National Park, ACT (600 km)
	Oecophoridae	<i>Tanyzancla marionella</i>	Infill in range from Wilsons Promontory (510 km) to Vivonne Bay, SA (350 km)
	Oecophoridae	<i>Wingia psittacodes</i>	650 km range extension from Mallacoota in far-eastern Victoria
	Tortricidae	<i>Thrinophora lignigerana</i>	250 km range extension; known from central and eastern Victoria; closest record Campaspe
Spiders	Salticidae	<i>Maratus robinsoni</i>	New record for Victoria; previously known from eastern NSW
	Salticidae	<i>Maratus vultus</i>	New record for Victoria; previously known from southwestern Australia
Vascular plants	Aizoaceae	<i>Mesembryanthemum nodiflorum</i>	Lake Hindmarsh; ~100 km from nearest collection; previously uncollected in the Wimmera
	Chenopodiaceae	<i>Maireana appressa</i>	Lake Hindmarsh; ~100 km from nearest collection; 1 plant only; not seen elsewhere; previously unrecorded in the Wimmera
	Poaceae	<i>Anthosachne kingiana</i> subsp. <i>multiflora</i>	About 7.1 km WSW (by road) from Horsham; ~200 km from nearest collection; scattered and rather uncommon
	Bryobartramiaceae	<i>Bryobartramia novae-valesiae</i>	Lake Hindmarsh Lake Reserve; ~120 km from nearest collection; a small and rarely collected moss species of soil crusts mostly in north west Victoria; most collections are old (only one other collection in Victoria in the last 20 years); closest collection was near Wycheproof in 1918
	Splachnaceae	<i>Tayloria octoblepharum</i>	Lawloit 150 Bushland Reserve; ~100 km from nearest collection; previously unrecorded in Victoria north west of the Grampians; an unusually dry environment for this species
	Tilletiaceae	<i>Tilletia ehrhartae</i>	Tallageira Nature Conservation Reserve, Lake Hindmarsh and Birdcage Nature Conservation Reserve; a common smut-fungus; previously known in Victoria from 3 collections

Other significant findings

Although drought and suboptimal conditions during the expedition impacted the diversity and abundance of many groups, a number of other significant findings were made. The expedition

provided an opportunity for scientists to collect data and obtain images, specimens and tissue samples important for future taxonomic research and even other fields of research. For example, a number of jewel beetle (Buprestidae) specimens were collected for Associate Professor Devi Stuart-Fox (University of Melbourne), for studies on animal colour and behaviour.

Vertebrates

The high diversity of reptile species caught in a short time frame indicates the extraordinary diversity of this region, however only a few individuals were recorded for many of the species recorded. Only a single individual was caught for 5 skink species (*Lampropholis delicata*, *Morethia obscura*, *Ctenotus orientalis*, *Cryptoblepharus pannosus*, and *Lerista bougainvillii*) and for the agamid lizards, one *Amphibolurus muricatus* was recorded and 2 *Amphibolurus norrisi*. The skink *Morethia obscura* was by far the most common species, with 56 individuals caught.

The majority of common reptile and frog species were found in both the recently burned and the long unburned sites sampled within Little Desert National Park and the Urimbirra Cooperative land. This bodes well for the reestablishment of species following fires, however, more detailed sampling and analysis of the genetic diversity of species following fires will better detail the responses of the herpetofauna to fires in this region.

The Dark-flecked Garden Sunskink (*Lampropholis delicata*) is a common widespread species down the eastern seaboard of Australia and is usually found in warm temperature areas. However, the individual collected during the expedition is part of a discrete, genetically distinct population found in western Victoria and South Australia.

Bees

There was a significantly lower bee diversity and lower number of specimens collected than expected. This may be due to the sustained drought, but may also be due to the surrounding areas being primarily grain-based agriculture. As grain-based plants are wind rather than bee pollinated, large areas of land surrounding the park are not suitable for high diversity and numbers of native bees.

Despite an abundance of flowering eucalypts, which are considered to be a major food resource for native bees, no native bees were attracted to these flowers. Usually, flowering eucalypts attract a wide variety of native bees, especially the very common Colletidae – Euryglossinae bees. Only 2 samples of Euryglossinae bees were collected on non-eucalypt flowers. There were even few European Honey Bees at these flowers. The almost complete absence of bees on the flowering eucalypts suggests that these flowers were not producing nectar. The best bee collection was made on a stand of flowering Chocolate Lily (*Arthropodium strictum*). Although these lilies do not produce nectar, bees were visiting them in abundance.

Moths

While the expedition extended the moth species list for the park, diversity was lower than expected – 185 species were recorded during the expedition, compared to 234 recorded in the park during surveys undertaken in 2015. Lower diversity was also found at Broughtons Waterhole (a standard survey site), which was surveyed in both years – 71 species were recorded compared to 84 species during the 2015 surveys. Peter Marriott, who was present on both occasions, noted there were generally fewer individual moths on the light sheets during the Bush Blitz expedition. It is possible that dry conditions affected moth populations, but further

work is needed to assess the effect of drought on moth populations. The Bush Blitz standard survey sites established during the expedition can be used to monitor changes in moth populations caused by wetter and drier seasons, drought and warming trends in climate.

Another significant finding was the high diversity of the Geometridae genus *Dichromodes* – 17 species. *Dichromodes* species were also well represented in the previous 2015 surveys, with 20 species in total. In both years there was an association with stands of *Melaleuca uncinata*. The park would be an appropriate place for a detailed study of the genus *Dichromodes*, as at least 12 undescribed dry-country species have been recorded.

As expected, the range of species recorded from the park included several species known from dry-country reserves in north-western Victoria. The overlap in species almost certainly derives from the dry climate, poor soils and the predominantly mallee vegetation they share. Some species also occur in the Grampians National Park, in areas lacking mallee vegetation. Further surveys at Neds Corner Station, the Murray-Sunset National Park, the Big Desert National Park and the Grampians National Park would clarify the interconnecting roles these reserves play in protecting the moth fauna of western Victoria as a whole, and would show the gradation in populations from north to south.

Spiders

Before the expedition, it was expected that the diversity of spiders in the tribe Euophryini, in particular the genus *Maratus*, would be low due to the dry habitat in the park and the low abundance of previous records from the area. However, the time of year and conditions were favourable to *Maratus* species, which were found in high abundance and diversity despite the dry, mallee habitat.

Figure 5 Peacock spider, *Maratus tasmanicus*



Photograph: Joseph Schubert © Copyright, Museums Victoria.

Terrestrial and freshwater molluscs

Overall, there is a low diversity of molluscs within the park. Only 2 species of native punctids were found during the expedition. While additional survey effort would likely find the Southern Ambersnail (*Succinea australis*) along drain-lines and in riparian habitat, all 3 species are common and widely distributed across Victoria. Of the 23 sites surveyed, either live snails or post-mortem shells were found only at 8 sites. Such low diversity and abundance cannot be attributed to the semi-arid climate as notably higher diversity has been recorded in other regions with a comparable climate. The most likely explanation is the lack of topographic relief, together with the region being geologically relatively young.

In contrast, the rocky outcrops centred on Mount Arapiles represent an important long term refugium for the broader region, harbouring either relictual populations or local endemics. For example, an undescribed charopid *Scelidoropa* was recorded at Mount Arapiles-Toooan State Park. The few records held for this taxa are from sites at, or in close proximity to, Mount Arapiles, with the most recent collected in 1975. Closely related *Scelidoropa* species are generally found in relatively wetter forests in southern parts of Victoria. Hence, this undescribed species represents both a geographic and environmental outlier, most likely relictual. It is believed this species can survive in the semi-arid environment because of the favourable microclimate afforded by the rocky outcrops. It seems this species is highly restricted to the Mount Arapiles region and the southern facing rocky slopes at Mount Arapiles represent a critical habitat. Damage to vegetation was observed at both sites surveyed, primarily due to rock climbing activity.

Flora

Soil crusts in the Lake Hindmarsh Lake Reserve and Birdcage Nature Conservation Reserve were diverse in small moss species. At the site where the rarely collected *Bryobartramia* was collected, at least 10 species of moss were regularly present in small portions of the soil crust.

Areas of high conservation value, containing high plant diversity and localised species, were identified outside of Little Desert National Park. This included a block of vegetation continuous with Foresters Spring Bushland Reserve and the north-west portion of Tallageira Nature Conservation Reserve. The botanical report recommends protection and management actions to maintain the high conservation value of these sites.

Appendix A: Species lists

Table A1 List of fauna species recorded

Group	Family	Species	Common name
Mammals	Burramyidae	<i>Cercartetus concinnus</i>	Western Pygmy-possum
	Dasyuridae	<i>Sminthopsis crassicaudata</i>	Fat-tailed Dunnart
	Muridae	<i>Pseudomys apodemoides</i>	Silky Mouse
Birds	Megapodiidae	<i>Leipoa ocellata</i> ^{c d}	Malleefowl
Reptiles	Agamidae	<i>Amphibolurus muricatus</i>	Jacky Lizard
	Agamidae	<i>Amphibolurus norrisi</i>	Mallee Tree Dragon
	Agamidae	<i>Ctenophorus pictus</i>	Painted Dragon
	Agamidae	<i>Pogona barbata</i>	Bearded Dragon
	Diplodactylidae	<i>Diplodactylus vittatus</i>	Eastern Stone Gecko
	Elapidae	<i>Parasuta nigriceps</i>	Mitchell's Short-tailed Snake
	Elapidae	<i>Pseudonaja textilis</i>	Common Brown Snake, Eastern Brown Snake
	Gekkonidae	<i>Christinus marmoratus</i>	Marbled Gecko
	Pygopodidae	<i>Aprasia striolata</i> ^d	Lined Worm-lizard, Striped Worm-lizard
	Pygopodidae	<i>Pygopus lepidopodus</i>	Common Scaly-foot
	Scincidae	<i>Cryptoblepharus pannosus</i>	Ragged Snake-eyed Skink
	Scincidae	<i>Ctenotus orientalis</i>	Eastern Ctenotus, Eastern Striped Skink
	Scincidae	<i>Ctenotus spaldingi</i>	Spalding's Ctenotus
	Scincidae	<i>Lampropholis delicata</i>	Dark-flecked Garden Sunskink
	Scincidae	<i>Lerista bougainvillii</i>	South-Eastern Slider
	Scincidae	<i>Morethia obscura</i>	Shrubland Morethia Skink
	Scincidae	<i>Tiliqua rugosa</i>	Shingle-back
	Varanidae	<i>Varanus rosenbergi</i> ^d	Heath Monitor, Rosenberg's Goanna
Frogs	Limnodynastidae	<i>Limnodynastes dumerilii</i>	Eastern Banjo Frog
	Limnodynastidae	<i>Neobatrachus sudellae</i>	Sudell's Frog
Ants	Formicidae	<i>Anonychomyrma</i> sp.	na
	Formicidae	<i>Camponotus</i> BBLD sp.1	na
	Formicidae	<i>Camponotus</i> BBLD sp.2	na
	Formicidae	<i>Camponotus</i> BBLD sp.3	na
	Formicidae	<i>Crematogaster</i> BBLD sp.1	na
	Formicidae	<i>Crematogaster</i> BBLD sp.2	na
	Formicidae	<i>Dolichoderus</i> BBLD sp.1	na

Group	Family	Species	Common name
	Formicidae	<i>Dolichoderus</i> BBLD sp.2	na
	Formicidae	<i>Frogatella</i> sp.	na
	Formicidae	<i>Hypoponera</i> sp.	na
	Formicidae	<i>Iridomyrmex</i> BBLD sp.1	na
	Formicidae	<i>Iridomyrmex purpureus</i>	Meat Ant
	Formicidae	<i>Meranoplus</i> BBLD sp.1	na
	Formicidae	<i>Meranoplus</i> BBLD sp.2	na
	Formicidae	<i>Monomorium</i> BBLD sp.1	na
	Formicidae	<i>Monomorium</i> BBLD sp.2	na
	Formicidae	<i>Myrmecia</i> BBLD sp.1	na
	Formicidae	<i>Myrmecia</i> BBLD sp.2	na
	Formicidae	<i>Myrmecia</i> BBLD sp.3	na
	Formicidae	<i>Notoncus</i> sp.	na
	Formicidae	<i>Ochetellus</i> sp.	na
	Formicidae	<i>Papyrius</i> sp.	na
	Formicidae	<i>Paratrechina</i> sp.	na
	Formicidae	<i>Pheidole</i> sp.	na
	Formicidae	<i>Podomyrma adelaidae</i>	na
	Formicidae	<i>Podomyrma</i> BBLD sp.1	na
	Formicidae	<i>Podomyrma</i> BBLD sp.2	na
	Formicidae	<i>Podomyrma</i> BBLD sp.3	na
	Formicidae	<i>Polyrhachis</i> sp.	na
	Formicidae	<i>Ponera</i> sp.	na
	Formicidae	<i>Rhytidoponera mayri</i>	na
	Formicidae	<i>Rhytidoponera metallica</i>	Green-head Ant
	Formicidae	<i>Tapinoma</i> sp.	na
Bees	Apidae	<i>Apis mellifera</i> ^b	European Honey Bee
	Colletidae	<i>Euhesma</i> sp.	na
	Colletidae	<i>Euryglossa pammicta</i>	na
	Colletidae	<i>Hylaeus (Gnathoprosopis) amicus</i>	na
	Colletidae	<i>Hylaeus (Rhodohylaeus) sp.</i>	na
	Colletidae	<i>Hylaeus honestus</i>	na
	Colletidae	<i>Hylaeus</i> sp. 1	na
	Colletidae	<i>Hylaeus</i> sp. 2	na
	Colletidae	<i>Leioproctus</i> sp.	na
	Halictidae	<i>Homalictus urbanus</i>	na
	Halictidae	<i>Lasioglossum (Chilalictus) sp. nov.</i> ^a	na
	Halictidae	<i>Lasioglossum (Ctenonomia) sp. nov.</i> ^a	na
	Halictidae	<i>Lasioglossum aspratulum</i>	na
	Halictidae	<i>Lasioglossum clelandi</i>	na

Group	Family	Species	Common name
	Halictidae	<i>Lasioglossum cognatum</i>	na
	Halictidae	<i>Lasioglossum convexum</i>	na
	Halictidae	<i>Lasioglossum erythrurum</i>	na
	Halictidae	<i>Lasioglossum globosum</i>	na
	Halictidae	<i>Lasioglossum hilactum</i>	na
	Halictidae	<i>Lasioglossum instabilis</i>	na
	Halictidae	<i>Lasioglossum lanarium</i>	na
	Halictidae	<i>Lasioglossum littleri</i>	na
	Halictidae	<i>Lasioglossum pachycephalum</i>	na
	Halictidae	<i>Lipotriches gracilipes</i>	na
Wasps	Mutillidae	Mutillidae sp.	na
	Pteromalidae	Pteromalidae sp.	na
Moths	[Order: Lepidoptera]	Lepidoptera sp.	na
	Anthelidae	<i>Munychryia senicula</i>	na
	Cosmopterigidae	Cosmopterigidae sp.	na
	Cosmopterigidae	<i>Leptozeztis</i> sp. 1	na
	Cosmopterigidae	<i>Leptozeztis</i> sp. 2	na
	Cosmopterigidae	<i>Limnaecia</i> sp. 1	na
	Cosmopterigidae	<i>Limnaecia</i> sp. 2	na
	Cosmopterigidae	<i>Macrobathra melanomitra</i>	na
	Cosmopterigidae	<i>Macrobathra</i> sp.	na
	Cossidae	<i>Endoxyla edwardsorum</i>	na
	Crambidae	<i>Hygraula nitens</i>	na
	Crambidae	<i>Nomophila corticalis</i>	na
	Crambidae	<i>Scoparia meyrickii</i>	na
	Crambidae	<i>Tipanaea patulella</i>	na
	Depressariidae	<i>Pedois amaurophanes</i>	na
	Elachistidae	<i>Elachista (Atachia) carcharota</i>	na
	Epermeniidae	<i>Epermenia exilis</i>	na
	Erebidae	<i>Acyphas pelodes</i>	na
	Erebidae	<i>Acyphas</i> sp.	na
	Erebidae	<i>Anestia ombrophanes</i>	Clouded Footman
	Erebidae	<i>Arrade leucocosmalis</i>	Garden Snout
	Erebidae	Erebidae sp. ^a	na
	Erebidae	<i>Eublemma inconspicua</i>	Inconspicuous Eublemma
	Erebidae	<i>Halone servilis</i>	Grey Halone
	Erebidae	<i>Termessa nivosa</i>	Snowy Footman
	Erebidae	<i>Termessa zonophanes</i>	Double Yellow-patched Footman

Group	Family	Species	Common name
	Erebidae	<i>Thallarcha rhapsophora</i>	Desert Footman
	Gelechiidae	<i>Ardozyga desmatra</i>	na
	Geometridae	<i>(Boarmia) zaloschema</i>	Shaded Bark Moth
	Geometridae	<i>Anachloris tofocolorata</i>	Tofu Carpet
	Geometridae	<i>Arhodia</i> sp.	na
	Geometridae	Boarmiini MoV sp.(3)	na
	Geometridae	<i>Chlenomorpha sciogramma</i>	Bent-wing Geometrid
	Geometridae	<i>Chlorocoma cadmaria</i>	Spectacular Emerald
	Geometridae	<i>Chlorocoma vertumnaria</i>	Red-fringed Emerald
	Geometridae	<i>Corula geometroides</i>	Ash-grey Geometrid
	Geometridae	<i>Crypsiphona ocutaria</i>	Red-lined Geometrid
	Geometridae	<i>Cyneoterpna</i> MoV sp.(1)	na
	Geometridae	<i>Dichromodes</i> aff. <i>anelictis</i>	na
	Geometridae	<i>Dichromodes atosignata</i>	Black-signed Heath Moth
	Geometridae	<i>Dichromodes cirrhoplaca</i>	Orange-barred Heath Moth
	Geometridae	<i>Dichromodes consignata</i>	Singed Heath Moth
	Geometridae	<i>Dichromodes diffusaria</i>	Disbursed Heath Moth
	Geometridae	<i>Dichromodes explanata</i>	Fine-lined Moth
	Geometridae	<i>Dichromodes fulvida</i>	Fulvida Heath Moth
	Geometridae	<i>Dichromodes indicataria</i>	Variable Heath Moth
	Geometridae	<i>Dichromodes longidens</i>	Toothed Heath Moth
	Geometridae	<i>Dichromodes lygrodes</i>	na
	Geometridae	<i>Dichromodes</i> MoV sp.(4)	na
	Geometridae	<i>Dichromodes</i> sp.1	na
	Geometridae	<i>Dichromodes</i> sp.2	na
	Geometridae	<i>Dichromodes</i> sp.3	na
	Geometridae	<i>Dichromodes</i> sp.4	na
	Geometridae	<i>Dichromodes</i> sp.5	na
	Geometridae	<i>Dichromodes</i> sp.6	na
	Geometridae	<i>Dinophalus</i> MoV sp.(1)	na
	Geometridae	<i>Dinophalus</i> MoV sp.(3)	na
	Geometridae	<i>Dithalama cosmospila</i>	Grey Spotted Wave
	Geometridae	<i>Dysbatus singularis</i>	Dry-country Line-Moth
	Geometridae	<i>Epyaxa subidaria</i>	Subidaria Moth
	Geometridae	<i>Euphronarcha leptodesma</i>	Pale Desert Bark Moth
	Geometridae	<i>Gastrinodes argoplaca</i>	Cryptic Bark Moth
	Geometridae	<i>Gastrinodes</i> MoV sp.(1)	na
	Geometridae	<i>Hypobapta diffundens</i>	Diffundens Grey

Group	Family	Species	Common name
	Geometridae	<i>Idaea costaria</i>	White-edged Wave
	Geometridae	<i>Idaea inversata</i>	Purple Wave
	Geometridae	<i>Idaea philocosma</i>	Flecked Wave
	Geometridae	<i>Lipogya leucoprosopa</i>	Dash Bark Moth
	Geometridae	<i>Lipogya</i> MoV sp.(1)	na
	Geometridae	Nacophorini MoV sp.(3)	na
	Geometridae	<i>Oenochroma cycnoptera</i>	Dry-country Wine Moth
	Geometridae	<i>Oenochroma</i> MoV sp.(2)	na
	Geometridae	<i>Oenochroma vinaria</i>	Hakea Wine Moth
	Geometridae	<i>Pasiphilodes testulata</i>	Pome Looper
	Geometridae	<i>Phrissogonus laticostata</i> ^b	Apple Looper
	Geometridae	<i>Phrixocomes hedrasticha</i>	Saw-tooth Heath Moth
	Geometridae	<i>Phrixocomes</i> MoV sp.(1)	na
	Geometridae	<i>Phrixocomes</i> sp.1	na
	Geometridae	<i>Phrixocomes</i> sp.2	na
	Geometridae	<i>Prasinocyma semicrocea</i>	Common Gum Emerald
	Geometridae	<i>Psilosticha absorpta</i>	Fine-waved Bark Moth
	Geometridae	<i>Psilosticha pristis</i>	Little Brown Bark Moth
	Geometridae	<i>Rhuma</i> MoV sp.(3)	na
	Geometridae	<i>Scopula rubraria</i>	Reddish Wave/Plantain Moth
	Geometridae	<i>Syneora</i> MoV sp.(1)	na
	Geometridae	<i>Taxeotis</i> cf. <i>celidora</i>	na
	Geometridae	<i>Taxeotis didymosticha</i>	Twins' Taxeotis
	Geometridae	<i>Taxeotis exsectaria</i>	Ochre-headed Taxeotis
	Geometridae	<i>Taxeotis intermixtaria</i>	Dark-edged Taxeotis
	Geometridae	<i>Taxeotis</i> sp.	na
	Geometridae	<i>Zermizinga sinuata</i>	Lucerne Looper Moth
	Hypertrophidae	<i>Eupselia axiepaena</i>	na
	Hypertrophidae	<i>Eupselia beatella</i>	na
	Hypertrophidae	<i>Thudaca campylota</i>	na
	Hypertrophidae	<i>Thudaca haplonota</i>	na
	Lasiocampidae	<i>Porela</i> MoV sp.(1)	na
	Lasiocampidae	<i>Porela</i> MoV sp.(2)	na
	Limacodidae	<i>Pseudanapaea</i> sp.	na
	Noctuidae	<i>Agrotis emboloma</i>	na
	Noctuidae	<i>Agrotis infusa</i> ^b	Bogong Moth
	Noctuidae	<i>Agrotis munda</i> ^b	Brown Cutworm
	Noctuidae	<i>Agrotis porphyricollis</i> ^b	na
	Noctuidae	<i>Chrysodeixis argentifera</i> ^b	Tobacco Looper

Group	Family	Species	Common name
	Noctuidae	<i>Dasygaster padockina</i>	na
	Noctuidae	<i>Hecatesia thyridion</i>	Southern Whistling Moth
	Noctuidae	<i>Helicoverpa punctigera</i> ^b	Native Budworm
	Noctuidae	<i>Leucania diatrecta</i>	na
	Noctuidae	<i>Leucania stenographa</i>	na
	Noctuidae	<i>Mythimna (Pseudaletia) convecta</i> ^b	na
	Noctuidae	<i>Persectania dyscrita</i>	na
	Noctuidae	<i>Persectania ewingii</i>	Southern Armyworm
	Noctuidae	<i>Spodoptera exigua</i>	na
	Noctuidae	<i>Thoracolopha verecunda</i> Group	na
	Nolidae	<i>Aquita tactalis</i>	Tactile Tuft-moth
	Nolidae	<i>Earias chlorodes</i>	Pale Earias
	Nolidae	<i>Nola eurrhyncha</i>	Well-beaked Tuft-moth
	Nolidae	<i>Nola</i> MoV sp. (12)	na
	Nolidae	<i>Nola niphostena</i>	Desert Tuft-moth
	Nolidae	<i>Nola pleurosema</i>	Plain Tuft-moth
	Nolidae	<i>Nola</i> sp. 1	na
	Nolidae	<i>Nola</i> sp. 2	na
	Nolidae	<i>Nola</i> sp. 3	na
	Nolidae	<i>Nola</i> sp. 4	na
	Notodontidae	<i>Commonia hesychima</i>	na
	Notodontidae	<i>Destolmia lineata</i>	Streaked Notodontid
	Notodontidae	<i>Hobartina</i> sp.	na
	Notodontidae	<i>Ochrogaster lunifer</i>	Bag Shelter Moth
	Notodontidae	<i>Psilidostetha banksiae</i>	Banksia Moth
	Oecophoridae	<i>Antipterna</i> sp.	na
	Oecophoridae	<i>Catadoceta xanthostephana</i>	na
	Oecophoridae	<i>Catoryctis tricrena</i>	na
	Oecophoridae	<i>Cryptophasa tetrazona</i>	na
	Oecophoridae	<i>Deigmoesta</i> sp.	na
	Oecophoridae	<i>Euchaetis incarnatella</i>	na
	Oecophoridae	<i>Euchaetis inceptella</i>	na
	Oecophoridae	<i>Euchaetis metallota</i>	na
	Oecophoridae	<i>Euphiltra angustior</i>	na
	Oecophoridae	Gelechoid sp.	na
	Oecophoridae	<i>Heteroteucha</i> sp.	na
	Oecophoridae	<i>Heterozyga coppatias</i>	na
	Oecophoridae	<i>Leucorhabda macrosticha</i>	na
	Oecophoridae	<i>Linosticha orthogramma</i>	na

Group	Family	Species	Common name
	Oecophoridae	<i>Machaeritis aegrella</i>	na
	Oecophoridae	<i>Microbela epicona</i>	na
	Oecophoridae	<i>Microbela</i> sp.	na
	Oecophoridae	<i>Mimobrachyoma hilaropa</i>	na
	Oecophoridae	<i>Myrascia</i> sp.	na
	Oecophoridae	<i>Ocystola paulinella</i>	na
	Oecophoridae	<i>Philobota ancylotoxa</i>	na
	Oecophoridae	<i>Philobota eremosema</i>	na
	Oecophoridae	<i>Philobota</i> sp.	na
	Oecophoridae	<i>Phytotrypa brochosema</i>	na
	Oecophoridae	<i>Phytotrypa pretiosella</i>	na
	Oecophoridae	<i>Plectobela zanclostoma</i>	na
	Oecophoridae	<i>Protomacha notia</i>	na
	Oecophoridae	<i>Stathmopoda</i> sp.	na
	Oecophoridae	<i>Tanyzancla argutella</i>	na
	Oecophoridae	<i>Tanyzancla marionella</i>	na
	Oecophoridae	<i>Telecrates laetiorella</i>	na
	Oecophoridae	<i>Wingia psittacodes</i>	na
	Oecophoridae	<i>Zelotechna</i> sp.	na
	Opostegidae	<i>Opostega</i> sp.	na
	Plutellidae	<i>Plutella xylostella</i> ^b	Cabbage Moth
	Pterophoridae	<i>Trichoptilus ceramodes</i>	na
	Pterophoridae	<i>Wheeleria spilodactylus</i>	na
	Pyalidae	<i>Assara subarcuella</i>	na
	Pyalidae	<i>Austropaschia porrigens</i>	na
	Pyalidae	<i>Callionyma sarcodes</i>	na
	Pyalidae	<i>Etiella behrii</i> ^b	Etiella Web Moth
	Pyalidae	<i>Hednotodes callichroa</i>	na
	Pyalidae	<i>Hellula hydralis</i>	Cabbage-centre Moth
	Pyalidae	<i>Meyriccia latro</i>	na
	Pyalidae	<i>Mimaglossa habitalis</i>	na
	Pyalidae	<i>Persicoptera pulchrinalis</i>	na
	Saturnidae	<i>Opodiphthera eucalypti</i>	Emperor Gum Moth
	Saturnidae	<i>Opodiphthera helenae</i>	Helena Gum Moth
	Tineidae	<i>Moerarchis australasiella</i>	na
	Tineidae	Tineid sp. 1	na
	Tineidae	Tineid sp. 2	na
	Tineidae	Tineid sp. 3	na
	Tortricidae	<i>Ancylis</i> sp. 1	na
	Tortricidae	<i>Ancylis</i> sp. 2	na

Group	Family	Species	Common name
	Tortricidae	<i>Arotrophora arcuatalis</i>	na
	Tortricidae	<i>Holocola</i> sp.	na
	Tortricidae	<i>Thrinophora lignigerana</i>	na
	Yponomeutidae	<i>Zelleria proterospila</i>	na
	Zygaenidae	<i>Pollanisus viridipulverulenta</i>	Satin-green Forester
	Zygaenidae	Zygaenidae sp.	na
Caddisflies	Ecnomidae	<i>Ecnomus</i> sp.	na
	Leptoceridae	<i>Oecetis</i> sp.	na
Flies	[Order Diptera]	Diptera sp.	na
Beetles	Anthicidae	Anthicidae sp.	na
	Belidae	Belidae sp.	na
	Buprestidae	<i>Castiarina indistincta</i>	na
	Buprestidae	<i>Melobasis</i> sp.	na
	Buprestidae	<i>Stanwatkinsius</i> sp.	na
	Cantharidae	Cantharidae sp.	na
	Carabidae	<i>Adelotopus dytiscides</i>	na
	Carabidae	<i>Anomotarus</i> sp.	na
	Carabidae	<i>Anomotarus (Anomotarus) unimaculatus</i>	na
	Carabidae	<i>Anomotarus crudelis</i>	na
	Carabidae	<i>Calosoma schayeri</i>	Green Carabid Beetle
	Carabidae	Carabidae sp.	na
	Carabidae	<i>Epelyx</i> sp.	na
	Carabidae	<i>Haplaner</i> sp.?	na
	Carabidae	Harpalinae sp.	na
	Carabidae	<i>Hypharpax</i> sp.	na
	Carabidae	<i>Microlestodes (Microlestodes) macleayi</i>	na
	Carabidae	<i>Philophaeus</i> sp.	na
	Carabidae	<i>Promecoderus</i> sp.	na
	Cerambycidae	<i>Phoracantha recurva</i>	Lesser Eucalyptus Longhorn
	Chrysomelidae	Chrysomelidae sp.	na
	Cleridae	Cleridae sp.	na
	Cleridae	<i>Eleale cribrata</i>	na
	Cleridae	<i>Phlogistus grandjeani</i>	na
	Coccinellidae	Coccinellidae sp.	na
	Curculionidae	Aterpini sp.	na
	Curculionidae	<i>Catasarcus</i> sp.	na
	Curculionidae	Cryptoplini sp.	na
	Curculionidae	Curculionidae sp.	na
	Curculionidae	Entiminae sp.	na

Group	Family	Species	Common name
	Curculionidae	<i>Melanterius</i> sp.	na
	Curculionidae	Storeini sp.	na
	Dermestidae	Dermestidae sp.	na
	Elateridae	<i>Agrypnus</i> sp.	na
	Elateridae	Elateridae sp.	na
	Elateridae	<i>Melanoxanthus</i> sp.	na
	Elateridae	<i>Monocrepidus</i> sp.	na
	Hydrophilidae	<i>Pseudohydrobius</i> sp.?	na
	Latridiidae	Latridiidae sp.	na
	Lycidae	<i>Porrostoma (Porrostoma) rhipidium</i>	na
	Mordellidae	Mordellidae sp.	na
	Oedemeridae	Oedemeridae sp.	na
	Scarabaeidae	<i>Phyllotocus</i> sp.	na
	Scarabaeidae	Scarabaeidae sp.	na
	Scirtidae	Scirtidae sp.	na
	Silvanidae	<i>Cryptamorphia delicatula</i>	na
	Silvanidae	<i>Cryptamorphia lata</i>	na
	Staphylinidae	Staphylinidae sp.	na
	Tenebrionidae	<i>Adelium</i> sp.	na
	Tenebrionidae	<i>Isopteron</i> sp.	na
	Tenebrionidae	<i>Pterohelaus</i> sp.	na
	Trogidae	<i>Omorgus</i> sp.	na
True bugs	Acanthosomatidae	<i>Duadicus</i> sp_BBLDDUAD001_msp.023	na
	Acanthosomatidae	<i>Eupolemus</i> sp_BBLDEUP001_msp.035	na
	Coreidae	<i>Agriopocoris</i> sp_BBLDAGRI001_msp.045	na
	Lygaeidae	<i>Crompus</i> sp_BBLDCROM001_msp.020	na
	Lygaeidae	<i>Eurynysius</i> sp_BBLDORTH0001_msp.015	na
	Lygaeidae	<i>Nysius vinitor</i> ^b	Rutherglen Bug
	Miridae	<i>Austromiris</i> sp_BBLDAUST003_msp.041 ^a	na
	Miridae	<i>Austromiris</i> sp_BBLDORTH0001_msp.013 ^a	na
	Miridae	<i>Austromiris viridissimus</i>	na
	Miridae	<i>Campylomma</i> sp_BBLDCAMP001_msp.032	na
	Miridae	<i>Creontiades dilutus</i> ^b	Green Mirid
	Miridae	Gn_Exaeretini_LD001 sp_BBLDEXAE001_msp.018	na
	Miridae	Gn_Melaleuroides_LD001 sp_BBLDMELA002_msp.042	na
	Miridae	Gn_nr. <i>Melaleuroides</i> _LD001 sp_BBLDMELA001_msp.027	na
	Miridae	Gn_nr. <i>Palassocoris</i> _LD001 sp_BBLDPALAS001_msp.026 ^a	na

Group	Family	Species	Common name
	Miridae	Gn_Orthotylinae_LD001 sp_BBLDORTH0002_msp.021	na
	Miridae	Gn_Orthotylini_LD001 sp_BBLDORTH0001_msp.009	na
	Miridae	Gn_Orthotylini_LD001 sp_BBLDORTH0003_msp.028	na
	Miridae	Gn_Orthotylini_LD001 sp_BBLDORTH0003_msp.128 ^a	na
	Miridae	Gn_Orthotylini_LD002 sp_BBLDORTH0004_msp.31	na
	Miridae	Gn_Orthotylini_LD005 sp_BBLDORTH005_msp.032	na
	Miridae	Gn_Orthotylini_LD0056 sp_BBLDORTH006_msp.033	na
	Miridae	Gn_Orthotylini_LD007 sp_BBLDORTH007_msp.034	na
	Miridae	Gn_Phylinae_LD002 sp_BBLDPHYL002_msp.037	na
	Miridae	Gn_Phylinae_LD003 sp_BBLADPHYL003_msp.039	na
	Miridae	Gn_Phylinae_LD004 sp_BBLADPHYL004_msp.049	na
	Miridae	Gn_Zanchiini_LD001 sp_BBLDZANC001_msp.030	na
	Miridae	<i>Kirkaldyella</i> sp_BBLDKIRK001_msp.038	na
	Miridae	<i>Myrtlemiris</i> sp_BBLDMYRT002_msp.040	na
	Miridae	<i>Myrtlemiris</i> sp_BBLDMYRT002_msp.048 ^a	na
	Miridae	<i>Myrtlemiris</i> sp_BBLDORTH007_msp.037	na
	Miridae	<i>Phyllofulvius</i> sp_BBLDCYLAP001_msp.008	na
	Miridae	<i>Pseudopantilius</i> sp_BBLDMIRI002_msp.047	na
	Miridae	<i>Zanessa</i> sp_BBLDZANE001_msp.025 ^a	na
	Nabidae	<i>Nabis kinbergii</i>	na
	Pentatomidae	<i>Aglaophon</i> sp_BBLDAGLAO001_msp.010	na
	Pentatomidae	<i>Cuspicona simplex</i>	na
	Pentatomidae	<i>Cuspicona</i> sp_BBLDCUSP001_msp.022	na
	Pentatomidae	<i>Cuspicona</i> sp_BBLDCUSP002_msp.044	na
	Pentatomidae	<i>Dictyotus</i> sp_BBLDDICT001_msp.015	na
	Pentatomidae	<i>Poecilometis</i> sp.	na
	Pentatomidae	<i>Poecilotoma</i> sp_BBLDPOEC001_msp.029	na
	Pyrrhocoridae	<i>Australodindymus</i> sp.	na
	Reduviidae	Gn_Harpactorinae_LD001 sp_BBLADHARP001_msp.001	na
	Reduviidae	Gn_Harpactorinae_LD001 sp_BBLADHARP001_msp.002	na

Group	Family	Species	Common name
	Reduviidae	Gn_Harpactorinae_LD001 sp_BBLADHARP001_msp.003	na
	Reduviidae	Gn_Harpactorinae_LD002 sp_BBLDREDU002_msp.043	na
	Reduviidae	Gn_Harpactorinae_LD003 sp_BBLDHARP003_msp.046	na
	Reduviidae	Gn_Stenopodainae_LD001 sp_BBLDSTENO001_msp.033	na
	Reduviidae	Gn_Stenopodainae_LD001 sp_BBLDSTENO01_msp.092	na
	Reduviidae	<i>Oncocephalus</i> sp_BBLDONCO001_msp.011	na
	Reduviidae	<i>Peirates</i> sp_BBLDREDU002_msp.012	na
	Rhyparochromidae	Gn_Cleradini_LD001 sp_BBLDCLER001_msp.007	na
	Rhyparochromidae	Gn_Myodochini_LD001 sp_BBLDMYOD001_msp.014 ^a	na
	Rhyparochromidae	Gn_Myodochini_LD002 sp_BBLDMYOD002_msp.036	na
	Rhyparochromidae	Gn_Rhyparochromidae_LD001 sp_BBLDRHYP001_msp.002	na
	Rhyparochromidae	Gn_Udeocorini_LD001 sp_BBLDUDE001_msp.001	na
	Rhyparochromidae	<i>Remaudiereana</i> sp_BBLDMYOD001_msp.006	na
	Scutelleridae	<i>Choerocoris paganus</i>	na
	Tingidae	<i>Eritingis</i> sp_BBLDERIT001_msp.024	na
	Tingidae	<i>Malandiola</i> sp.	na
	Tingidae	<i>Nethersia</i> sp_BBLDNETH001_msp.016 ^a	na
Planthoppers and froghoppers	Cercopidae	<i>Bathyllus albicinctus</i>	na
	Cixiidae	Cixiidae sp.	na
	Issidae	Issidae sp.	na
Lacewings	Myrmeleontidae	Myrmeleontidae sp.	na
	[Order Neuroptera]	Neuroptera sp.	na
Booklice	[Order Psocoptera]	Psocoptera sp.	na
Earwigs	Forficulidae	<i>Forficula auricularia</i> ^b	European Earwig
	[Order Dermaptera]	Dermaptera sp.	na
Grasshoppers, crickets, katydids	Acrididae	Acrididae sp.	na
	Acrididae	<i>Coryphistes ruricola</i>	Bark-mimicking Grasshopper
	Acrididae	<i>Goniaea</i> sp.	na
Cockroaches	[Order: Blattodea]	Blattodea sp.	na
	Kalotermitidae	<i>Kaloterme</i> sp.	na
	Rhinotermitidae	<i>Coptotermes</i> sp.	na
	Termitidae	<i>Nasutitermes</i> sp.	na

Group	Family	Species	Common name
Dragonflies and damselflies	Aeshnidae	<i>Anax papuensis</i>	Australian Emperor
	Coenagrionidae	<i>Xanthagrion erythroneurum</i>	Red and Blue Damselfly
	Corduliidae	<i>Hemicordulia tau</i>	Tau Emerald
	Lestidae	<i>Austrolestes annulosus</i>	Blue Ringtail
	Libellulidae	<i>Diplacodes bipunctata</i>	Wandering Percher
	Libellulidae	<i>Diplacodes haematodes</i>	Scarlet Percher
	Libellulidae	<i>Orthetrum caledonicum</i>	Blue Skimmer
Mantids	Mantidae	<i>Coenomantis kraussiana</i>	na
	Mantidae	<i>Trachymantis dentifrons</i>	na
Thrips	[Order Thysanoptera]	Thysanoptera sp.	na
Silverfish	[Order Zygentoma]	Zygentoma sp.	na
Springtails	Entomobryidae	Entomobryidae sp.	na
	Isotomidae	Isotomidae sp.	na
Centipedes and millipedes	Geophilidae	Geophilidae sp.	na
	Julidae	<i>Ommatoiulus moreleti</i> ^b	Portuguese Millipede
	Scolopendridae	Scolopendridae sp.	na
	[Order Polydesmida]	Polydesmida sp.	na
Spiders	Ammoxenidae	<i>Austrammo</i> sp.	na
	Araneidae	Araneidae sp.	na
	Araneidae	<i>Araneus</i> sp. BBLD 1	na
	Araneidae	<i>Araneus</i> sp. BBLD 2	na
	Araneidae	<i>Araneus</i> sp. BBLD 3	na
	Araneidae	<i>Argiope protensa</i>	Long-tailed Argiope
	Araneidae	<i>Backobourkia heroine</i>	na
	Araneidae	<i>Carepalxis</i> sp. BBLD 1	na
	Araneidae	<i>Carepalxis</i> sp. BBLD 2	na
	Araneidae	<i>Dolophones</i> sp.	na
	Araneidae	<i>Larinia</i> sp.	na
	Barychelidae	<i>Idiommatia</i> sp.	na
	Cheiracanthiidae	<i>Cheiracanthium</i> sp.	na
	Clubionidae	<i>Clubiona</i> sp. BBLD 1	na
	Clubionidae	<i>Clubiona</i> sp. BBLD 2	na
	Corinnidae	<i>Nyssus albopunctatus</i>	White-spotted Swift Spider
	Desidae	<i>Badumna longinqua</i>	Grey House Spider
	Desidae	<i>Badumna</i> sp.	na
	Desidae	<i>Corasoides australis</i>	na
	Desidae	Desidae sp.	na
	Filistatidae	<i>Wandella</i> sp.	na

Group	Family	Species	Common name
	Gnaphosidae	Gnaphosidae BBLD 1	na
	Gnaphosidae	Gnaphosidae BBLD 2	na
	Gnaphosidae	Gnaphosidae BBLD 3	na
	Lamponidae	<i>Lampona cylindrata</i>	na
	Lamponidae	<i>Lampona</i> sp. BBLD 1	na
	Lamponidae	<i>Lampona</i> sp. BBLD 2	na
	Lycosidae	<i>Artoria</i> sp. BBLD 1	na
	Lycosidae	<i>Artoria</i> sp. BBLD 2	na
	Lycosidae	<i>Artoriopsis</i> sp. BBLD 1	na
	Lycosidae	cf. <i>Artoria</i> sp.	na
	Lycosidae	Lycosidae BBLD 1	na
	Lycosidae	Lycosidae BBLD 2	na
	Lycosidae	Lycosidae BBLD 3	na
	Lycosidae	Lycosidae BBLD 4	na
	Lycosidae	Lycosidae gen. nov. BBLD sp. 1	na
	Lycosidae	<i>Tasmanicosa</i> cf. <i>harmsi</i>	na
	Lycosidae	<i>Tasmanicosa fulgor</i>	na
	Lycosidae	<i>Tasmanicosa hughjackmani</i>	na
	Lycosidae	<i>Tasmanicosa leuckartii</i>	na
	Lycosidae	<i>Tasmanicosa</i> sp.	na
	Miturgidae	<i>Argoctenus</i> sp.	na
	Miturgidae	<i>Miturga</i> sp. BBLD 1	na
	Miturgidae	<i>Miturga</i> sp. BBLD 2	na
	Miturgidae	<i>Miturga</i> sp. BBLD 3	na
	Miturgidae	Miturgidae BBLD 1	na
	Miturgidae	Miturgidae BBLD 2	na
	Miturgidae	Miturgidae BBLD 3	na
	Miturgidae	Miturgidae BBLD 4	na
	Miturgidae	Miturgidae gen. nov. sp. nov. BBLD 2019 2 ^a	na
	Miturgidae	Miturgidae gen. nov. sp. nov. BBLD 2019 3 ^a	na
	Oonopidae	<i>Grymeus</i> sp.	na
	Oonopidae	<i>Opopaea</i> sp. BBLD 1	na
	Oonopidae	<i>Opopaea</i> sp. BBLD 2	na
	Oxyopidae	<i>Oxyopes</i> sp. BBLD 1	na
	Oxyopidae	<i>Oxyopes</i> sp. BBLD 2	na
	Oxyopidae	<i>Oxyopes</i> sp. BBLD 3	na
	Philodromidae	Philodromidae sp.	na
	Salticidae	<i>Afraflacilla</i> sp.	na
	Salticidae	<i>Afraflacilla yeni</i>	na
	Salticidae	<i>Bianor</i> sp.	na

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Group	Family	Species	Common name
	Salticidae	Salticidae gen. nov. sp. nov. cf <i>Saitis</i> sp. ^a	na
	Salticidae	cf. <i>Tara</i> sp.	na
	Salticidae	<i>Clynotis severus</i>	na
	Salticidae	<i>Cytaea severa</i>	na
	Salticidae	<i>Damoetas</i> sp.	na
	Salticidae	Salticidae gen. nov. sp. nov. BBLD 2019 1 ^a	na
	Salticidae	Salticidae gen. nov. sp. nov. BBLD 2019 2 ^a	na
	Salticidae	Salticidae gen. nov. sp. nov. BBLD 2019 3	na
	Salticidae	Euophryini?	na
	Salticidae	<i>Helpis</i> sp.	na
	Salticidae	<i>Holoplatys</i> sp. BBLD 1	na
	Salticidae	<i>Holoplatys</i> sp. BBLD 2	na
	Salticidae	<i>Jotus auripes</i>	na
	Salticidae	<i>Jotus</i> sp.	na
	Salticidae	<i>Maratus calcitrans</i>	na
	Salticidae	<i>Maratus literatus</i>	na
	Salticidae	<i>Maratus nimbus</i>	na
	Salticidae	<i>Maratus robinsoni</i>	na
	Salticidae	<i>Maratus inaquosus</i> ^a	na
	Salticidae	<i>Maratus tasmanicus</i>	na
	Salticidae	<i>Maratus vespertilio</i>	na
	Salticidae	<i>Maratus vultus</i>	na
	Salticidae	<i>Ocrisiona leucocomis</i>	na
	Salticidae	<i>Opisthonus</i> sp. BBLD 1	na
	Salticidae	<i>Opisthonus</i> sp. BBLD 2	na
	Salticidae	<i>Opisthonus</i> sp. BBLD 3	na
	Salticidae	<i>Pungalina</i> sp.	na
	Salticidae	<i>Rhombonotus</i> sp.	na
	Salticidae	Salticidae BBLD 1	na
	Salticidae	Salticidae BBLD 2	na
	Salticidae	Salticidae BBLD 3	na
	Salticidae	<i>Servaea incana</i>	na
	Salticidae	<i>Servaea</i> sp.	na
	Salticidae	<i>Simaethula</i> sp.	na
	Salticidae	<i>Tara</i> sp.	na
	Salticidae	<i>Zebraplatys harveyi</i>	na
	Sparassidae	<i>Delena cancerides</i>	na
	Sparassidae	<i>Neosparassus</i> sp. BBLD 1	na
	Sparassidae	<i>Neosparassus</i> sp. BBLD 2	na
	Sparassidae	Sparassidae (juv)	na

Group	Family	Species	Common name
	Tetragnathidae	<i>Tetragnatha</i> sp.	na
	Theridiidae	<i>Latrodectus hasselti</i>	Redback Spider
	Theridiidae	Theridiidae sp.	na
	Thomisidae	<i>Stephanopis</i> sp. BBLD 1	na
	Thomisidae	<i>Australomisidia cruentata</i>	na
	Thomisidae	<i>Australomisidia</i> sp. BBLD 1	na
	Thomisidae	<i>Australomisidia</i> sp. BBLD 2	na
	Thomisidae	<i>Cymbacha</i> sp. BBLD 1	na
	Thomisidae	<i>Cymbacha</i> sp. BBLD 2	na
	Thomisidae	<i>Sidymella hirsuta</i>	na
	Thomisidae	<i>Stephanopis cambridgei</i>	na
	Thomisidae	<i>Stephanopis</i> sp. BBLD 2	na
	Thomisidae	<i>Tharpya</i> sp. BBLD 1	na
	Thomisidae	<i>Tharrhalea</i> sp. BBLD 1	na
	Thomisidae	<i>Tharrhalea</i> sp. BBLD 2	na
	Thomisidae	<i>Tharrhalea</i> sp. BBLD 3	na
	Thomisidae	<i>Tmarus</i> sp. BBLD 1	na
	Thomisidae	<i>Tmarus</i> sp. BBLD 2	na
	Thomisidae	<i>Tmarus</i> sp. BBLD 3	na
	Trochanteriidae	<i>Pyrrhus</i> sp. BBLD 1	na
	Trochanteriidae	<i>Pyrrhus</i> sp. BBLD 2	na
	Zodariidae	<i>Masasteron mas</i>	na
	Zodariidae	<i>Masasteron</i> sp.	na
	Zodariidae	<i>Neostorena</i> sp. BBLD 1	na
	Zodariidae	<i>Neostorena</i> sp. BBLD 2	na
	Zodariidae	<i>Pentasteron intermedium</i>	na
	Zodariidae	<i>Pentasteron</i> sp.	na
	Zodariidae	Zodariidae (juvenile) BBLD sp. 1	na
	Zodariidae	Zodariidae (juvenile) BBLD sp. 2	na
	Zodariidae	Zodariidae (juvenile) BBLD sp. 3	na
	Zodariidae	Zodariidae (juvenile) BBLD sp. 4	na
Scorpions	Bothriuridae	<i>Cercophonius kershawi</i>	Wood Scorpion, Forest Scorpion
	Buthidae	<i>Lychas variatus</i>	Marbled Scorpion
	Urodacidae	<i>Urodacus manicatus</i>	Black Rock Scorpion
Pseudoscorpions	[Order Pseudoscorpiones]	Pseudoscorpiones sp.	na
Mites	Erythraeidae	<i>Rainbowia</i> sp. ^b	na
Woodlice	Philosciidae	<i>Porcellionides pruinosus</i> ^b	na
Snails and slugs	Camaenidae	<i>Chloritobadistes victoriae</i>	Southern Hairy Red Snail

Group	Family	Species	Common name
	Charopidae	<i>Scelidoropa</i> sp.nov.'BBLD2019'	na
	Hygromiidae	<i>Cernuella virgata</i> ^b	Vineyard Snail
	Hygromiidae	<i>Microxeromagna lowei</i> ^b	Citrus Snail
	Physidae	<i>Physa acuta</i> ^b	Acute Bladder Snail
	Planorbidae	<i>Glyptophysa aliciae</i>	Alice's Pouch Snail
	Planorbidae	<i>Glyptophysa gibbosa</i>	Swollen Pouch Snail
	Planorbidae	<i>Isidorella hainesii</i>	Haine's Pouch Snail
	Punctidae	<i>Magilaoma penolensis</i>	Penola Pinhead Snail
	Punctidae	<i>Paralaoma mucoides</i>	Waxy Pinhead Snail
	Succineidae	<i>Succinea australis</i>	Southern Ambersnail

a Putative new species. **b** Introduced and/or pest species. **c** Listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth). **d** Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (Victoria). **na** Not available.

Table A2 List of flora species recorded

Group	Family	Species	Common name
Vascular plants	Aizoaceae	<i>Carpobrotus modestus</i>	na
	Aizoaceae	<i>Mesembryanthemum nodiflorum</i> ^a	Small Ice-plant
	Amaranthaceae	<i>Ptilotus semilanatus</i>	na
	Amaranthaceae	<i>Ptilotus spathulatus</i>	na
	Apiaceae	<i>Apium annuum</i>	na
	Apiaceae	<i>Daucus glochidiatus</i>	na
	Araliaceae	<i>Hydrocotyle hirta</i>	na
	Araliaceae	<i>Hydrocotyle medicaginoides</i>	na
	Araliaceae	<i>Trachymene pilosa</i>	na
	Asparagaceae	<i>Arthropodium strictum</i>	Chocolate Lily
	Asparagaceae	<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>	na
	Asparagaceae	<i>Laxmannia orientalis</i>	na
	Asparagaceae	<i>Lomandra collina</i>	na
	Asteraceae	<i>Actinobole uliginosum</i>	na
	Asteraceae	<i>Argentipallium obtusifolium</i>	na
	Asteraceae	<i>Blennospora drummondii</i>	na
	Asteraceae	<i>Brachyscome ciliaris</i>	na
	Asteraceae	<i>Brachyscome parvula</i>	na
	Asteraceae	<i>Brachyscome readeri</i> ^c	Reader's Daisy
	Asteraceae	<i>Calocephalus sonderi</i>	na
	Asteraceae	<i>Calotis scabiosifolia</i> var. <i>scabiosifolia</i>	na
	Asteraceae	<i>Centaurea melitensis</i> ^a	Malta Thistle
	Asteraceae	<i>Centipeda crateriformis</i> subsp. <i>compacta</i> ^c	Compact Sneezeweed
	Asteraceae	<i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i> ^a	African Boneseed
	Asteraceae	<i>Chrysocephalum apiculatum</i> subsp. <i>apiculatum</i>	na
	Asteraceae	<i>Chrysocephalum apiculatum</i> subsp. <i>congestum</i>	na
	Asteraceae	<i>Coronidium scorpioides</i>	na
	Asteraceae	<i>Cotula coronopifolia</i> ^a	Water-buttons
	Asteraceae	<i>Helichrysum leucopsidium</i>	na
	Asteraceae	<i>Hyalosperma demissum</i>	na
	Asteraceae	<i>Lagenophora gunniana</i>	na
	Asteraceae	<i>Laphangium luteoalbum</i>	na
	Asteraceae	<i>Leptorhynchos squamatus</i> subsp. <i>squamatus</i>	na
	Asteraceae	<i>Leptorhynchos tetrachaetus</i>	na
	Asteraceae	<i>Microseris walteri</i>	na
	Asteraceae	<i>Millotia myosotidifolia</i>	na
	Asteraceae	<i>Minuria leptophylla</i>	na
	Asteraceae	<i>Myriocephalus rhizocephalus</i>	na

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Group	Family	Species	Common name
	Asteraceae	<i>Olearia ciliata</i> var. <i>ciliata</i>	na
	Asteraceae	<i>Podolepis decipiens</i>	na
	Asteraceae	<i>Podotheca angustifolia</i>	na
	Asteraceae	<i>Pogonolepis muelleriana</i>	na
	Asteraceae	<i>Rhodanthe corymbiflora</i>	na
	Asteraceae	<i>Scorzonera laciniata</i> var. <i>calcitrapifolia</i> ^a	na
	Asteraceae	<i>Senecio glossanthus</i>	na
	Asteraceae	<i>Senecio halophilus</i>	na
	Asteraceae	<i>Senecio hispidissimus</i> ^c	Sand Fireweed
	Asteraceae	<i>Senecio picridioides</i>	na
	Asteraceae	<i>Senecio prenanthoides</i>	na
	Asteraceae	<i>Senecio quadridentatus</i>	na
	Asteraceae	<i>Senecio spanomerus</i>	na
	Asteraceae	<i>Senecio squarrosus</i>	na
	Asteraceae	<i>Vittadinia cervicularis</i>	na
	Asteraceae	<i>Vittadinia cuneata</i> var. <i>cuneata</i>	na
	Asteraceae	<i>Vittadinia cuneata</i> var. <i>morrisii</i> ^c	Fuzzy New Holland Daisy
	Asteraceae	<i>Vittadinia dissecta</i> var. <i>hirta</i>	na
	Asteraceae	<i>Vittadinia gracilis</i>	na
	Asteraceae	<i>Vittadinia megacephala</i> ^c	Giant New Holland Daisy
	Boraginaceae	<i>Amsinckia calycina</i> ^a	Hairy Fiddle-neck
	Boraginaceae	<i>Buglossoides arvensis</i> ^a	Sheepweed
	Boraginaceae	<i>Cynoglossum australe</i>	na
	Boraginaceae	<i>Cynoglossum suaveolens</i>	na
	Brassicaceae	<i>Stenopetalum lineare</i>	na
	Campanulaceae	<i>Wahlenbergia gracilentia</i>	na
	Campanulaceae	<i>Wahlenbergia graniticola</i>	na
	Campanulaceae	<i>Wahlenbergia luteola</i>	na
	Caryophyllaceae	<i>Petrorhagia dubia</i> ^a	Hairy Pink
	Caryophyllaceae	<i>Spergularia brevifolia</i>	na
	Caryophyllaceae	<i>Spergularia tasmanica</i>	na
	Casuarinaceae	<i>Allocasuarina mackliniana</i> subsp. <i>xerophila</i>	na
	Casuarinaceae	<i>Allocasuarina muelleriana</i> subsp. <i>muelleriana</i>	na
	Casuarinaceae	<i>Allocasuarina pusilla</i>	na
	Celastraceae	<i>Stackhousia aspericocca</i> subsp. One-sided inflorescence (W.R.Barker 697) W.R.Barker	na
	Celastraceae	<i>Stackhousia subterranea</i>	na
	Chenopodiaceae	<i>Atriplex australasica</i>	na
	Chenopodiaceae	<i>Atriplex pseudocampanulata</i>	na
	Chenopodiaceae	<i>Chenopodium desertorum</i> subsp. <i>microphyllum</i>	na

Group	Family	Species	Common name
	Chenopodiaceae	<i>Dysphania glomulifera</i> subsp. <i>glomulifera</i>	na
	Chenopodiaceae	<i>Maireana appressa</i>	na
	Chenopodiaceae	<i>Maireana excavata</i>	na
	Chenopodiaceae	<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	na
	Chenopodiaceae	<i>Sclerolaena diacantha</i>	na
	Chenopodiaceae	<i>Tecticornia halocnemoides</i> subsp. <i>halocnemoides</i>	na
	Chenopodiaceae	<i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i>	na
	Chenopodiaceae	<i>Tecticornia syncarpa</i> ^c	Fused Glasswort
	Colchicaceae	<i>Burchardia umbellata</i>	na
	Convolvulaceae	<i>Convolvulus angustissimus</i> subsp. <i>angustissimus</i>	na
	Convolvulaceae	<i>Convolvulus angustissimus</i> subsp. <i>fililobus</i>	na
	Convolvulaceae	<i>Wilsonia rotundifolia</i>	na
	Crassulaceae	<i>Crassula colligata</i> subsp. <i>lamprosperma</i>	na
	Crassulaceae	<i>Crassula natans</i> var. <i>minus</i> ^a	Floating Pigmyweed
	Cupressaceae	<i>Callitris gracilis</i>	na
	Cupressaceae	<i>Callitris verrucosa</i>	na
	Cyperaceae	<i>Bolboschoenus caldwellii</i>	na
	Cyperaceae	<i>Carex inversa</i>	na
	Cyperaceae	<i>Chorizandra enodis</i>	na
	Cyperaceae	<i>Cyperus gymnocaulos</i>	na
	Cyperaceae	<i>Isolepis cernua</i>	na
	Cyperaceae	<i>Isolepis hystrix</i> ^a	Awed Club-rush
	Cyperaceae	<i>Lepidosperma laeve</i>	na
	Cyperaceae	<i>Lepidosperma viscidum</i>	na
	Cyperaceae	<i>Schoenoplectus pungens</i>	na
	Dilleniaceae	<i>Hibbertia fasciculata</i> var. <i>prostrata</i>	na
	Dilleniaceae	<i>Hibbertia riparia</i>	na
	Dilleniaceae	<i>Hibbertia sericea</i>	na
	Dilleniaceae	<i>Hibbertia virgata</i>	na
	Droseraceae	<i>Drosera glanduligera</i>	na
	Droseraceae	<i>Drosera hookeri</i>	na
	Elaeocarpaceae	<i>Tetratheca ciliata</i>	na
	Ericaceae	<i>Brachyloma daphnoides</i>	na
	Ericaceae	<i>Brachyloma ericoides</i> subsp. <i>ericoides</i>	na
	Ericaceae	<i>Leucopogon cordifolius</i>	na
	Ericaceae	<i>Leucopogon virgatus</i> var. <i>brevifolius</i> ^c	Common Beard-heath
	Ericaceae	<i>Leucopogon virgatus</i> var. <i>virgatus</i>	na
	Fabaceae	<i>Acacia brachybotrya</i>	na
	Fabaceae	<i>Acacia cupularis</i>	na
	Fabaceae	<i>Acacia dodonaeifolia</i>	na

Group	Family	Species	Common name
	Fabaceae	<i>Acacia euthycarpa</i> subsp. <i>euthycarpa</i>	na
	Fabaceae	<i>Acacia glandulicarpa</i> ^{b c}	Hairy-pod Wattle
	Fabaceae	<i>Acacia iteaphylla</i> ^a	Flinders Range Wattle
	Fabaceae	<i>Acacia provincialis</i>	na
	Fabaceae	<i>Acacia pycnantha</i>	na
	Fabaceae	<i>Acacia saligna</i> ^a	Orange Wattle
	Fabaceae	<i>Acacia simmonsiana</i> ^c	Desert Manna Wattle
	Fabaceae	<i>Acacia spinescens</i>	na
	Fabaceae	<i>Acacia trineura</i>	na
	Fabaceae	<i>Daviesia brevifolia</i>	na
	Fabaceae	<i>Daviesia genistifolia</i>	na
	Fabaceae	<i>Daviesia pectinata</i> ^c	Thorny Bitter-pea
	Fabaceae	<i>Dillwynia glaberrima</i>	na
	Fabaceae	<i>Dillwynia hispida</i>	na
	Fabaceae	<i>Dillwynia sericea</i>	na
	Fabaceae	<i>Dillwynia uncinata</i>	na
	Fabaceae	<i>Eutaxia microphylla</i> var. <i>diffusa</i>	na
	Fabaceae	<i>Eutaxia microphylla</i> var. <i>microphylla</i>	na
	Fabaceae	<i>Goodia medicaginea</i>	na
	Fabaceae	<i>Kennedia prostrata</i>	na
	Fabaceae	<i>Lotus cruentus</i>	na
	Fabaceae	<i>Medicago minima</i> ^a	Little Medic
	Fabaceae	<i>Medicago polymorpha</i> ^a	Burr Medic
	Fabaceae	<i>Medicago truncatula</i> ^a	Barrel Medic
	Fabaceae	<i>Phyllota remota</i> ^c	Slender Phyllota
	Fabaceae	<i>Pultenaea laxiflora</i>	na
	Fabaceae	<i>Pultenaea prostrata</i>	na
	Fabaceae	<i>Pultenaea tenuifolia</i>	na
	Fabaceae	<i>Senna artemisioides</i> subsp. <i>zygophylla</i>	na
	Fabaceae	<i>Swainsona procumbens</i>	na
	Fabaceae	<i>Templetonia stenophylla</i>	na
	Fabaceae	<i>Trifolium glomeratum</i> ^a	Clustered Clover
	Fabaceae	<i>Trifolium hirtum</i> ^a	Hairy Clover
	Fabaceae	<i>Trifolium scabrum</i> ^a	Rough Clover
	Fabaceae	<i>Viminaria juncea</i>	na
	Gentianaceae	<i>Cicendia filiformis</i> ^a	Slender Cicendia
	Geraniaceae	<i>Geranium</i> sp. Pale pink flowers (M.Gray 5847) Vic. Herbarium	na
	Geraniaceae	<i>Pelargonium australe</i>	na
	Geraniaceae	<i>Pelargonium littorale</i>	na

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Group	Family	Species	Common name
	Goodeniaceae	<i>Brunonia australis</i>	na
	Goodeniaceae	<i>Dampiera dysantha</i>	na
	Goodeniaceae	<i>Dampiera marifolia</i>	na
	Goodeniaceae	<i>Goodenia benthamiana</i> ^c	Small-leaf Goodenia
	Goodeniaceae	<i>Goodenia blackiana</i>	na
	Goodeniaceae	<i>Goodenia geniculata</i>	na
	Goodeniaceae	<i>Goodenia pinnatifida</i>	na
	Goodeniaceae	<i>Goodenia robusta</i>	na
	Goodeniaceae	<i>Goodenia varia</i>	na
	Goodeniaceae	<i>Velleia paradoxa</i>	na
	Haloragaceae	<i>Glischrocaryon behrii</i>	na
	Haloragaceae	<i>Gonocarpus elatus</i>	na
	Haloragaceae	<i>Haloragis aspera</i>	na
	Haloragaceae	<i>Myriophyllum verrucosum</i>	na
	Hemerocallidaceae	<i>Dianella revoluta</i> var. <i>revoluta</i>	na
	Hemerocallidaceae	<i>Tricoryne elatior</i>	na
	Hemerocallidaceae	<i>Tricoryne tenella</i>	na
	Juncaceae	<i>Juncus capitatus</i> ^a	na
	Juncaceae	<i>Luzula meridionalis</i> var. <i>meridionalis</i>	na
	Juncaginaceae	<i>Triglochin nana</i>	na
	Lamiaceae	<i>Ajuga australis</i>	na
	Lamiaceae	<i>Marrubium vulgare</i> ^a	Horehound
	Lamiaceae	<i>Prostanthera aspalathoides</i>	na
	Lamiaceae	<i>Westringia eremicola</i>	na
	Loganiaceae	<i>Logania linifolia</i>	na
	Lythraceae	<i>Lythrum hyssopifolia</i>	na
	Malvaceae	<i>Lasiopetalum baueri</i>	na
	Malvaceae	<i>Lawrencia glomerata</i>	na
	Malvaceae	<i>Lawrencia squamata</i>	na
	Malvaceae	<i>Malva weinmanniana</i>	na
	Malvaceae	<i>Thomasia petalocalyx</i> ^c	Paper Flower
	Marsileaceae	<i>Marsilea drummondii</i>	na
	Myrtaceae	<i>Baeckea ericaea</i>	na
	Myrtaceae	<i>Calytrix alpestris</i>	na
	Myrtaceae	<i>Calytrix tetragona</i>	na
	Myrtaceae	<i>Eucalyptus behriana</i>	na
	Myrtaceae	<i>Eucalyptus calycogona</i> subsp. <i>trachybasis</i>	na
	Myrtaceae	<i>Eucalyptus costata</i> subsp. <i>murrayana</i>	na
	Myrtaceae	<i>Eucalyptus diversifolia</i> subsp. <i>diversifolia</i>	na
	Myrtaceae	<i>Eucalyptus dumosa</i>	na

Group	Family	Species	Common name
	Myrtaceae	<i>Eucalyptus leptophylla</i>	na
	Myrtaceae	<i>Eucalyptus leucoxylon</i> subsp. <i>stephaniae</i>	Yellow Gum
	Myrtaceae	<i>Eucalyptus wimmerensis</i> subsp. <i>grata</i> ^c	Wimmera Mallee-box
	Myrtaceae	<i>Leptospermum coriaceum</i>	na
	Myrtaceae	<i>Leptospermum myrsinoides</i>	na
	Myrtaceae	<i>Melaleuca acuminata</i> subsp. <i>acuminata</i>	Salt Paperbark
	Myrtaceae	<i>Melaleuca halmaturorum</i> ^c	na
	Myrtaceae	<i>Melaleuca wilsonii</i>	na
	Myrtaceae	<i>Micromyrtus ciliata</i>	na
	Orchidaceae	<i>Caladenia cardiochila</i>	na
	Orchidaceae	<i>Caladenia colorata</i> ^{b c}	Colourful Spider-orchid
	Orchidaceae	<i>Caladenia cucullata</i>	Hooded Caladenia
	Orchidaceae	<i>Caladenia tentaculata</i>	na
	Orchidaceae	<i>Calochilus robertsonii</i>	na
	Orchidaceae	<i>Disa bracteata</i> ^a	na
	Orchidaceae	<i>Diuris sulphurea</i>	na
	Orchidaceae	<i>Prasophyllum nitidum</i>	na
	Orchidaceae	<i>Prasophyllum odoratum</i>	na
	Orchidaceae	<i>Prasophyllum</i> sp. aff. <i>occidentale</i> ^{C c}	Western Leek-orchid
	Orchidaceae	<i>Prasophyllum spadiceum</i> ^c	Brown-lip Leek-orchid
	Orchidaceae	<i>Pterostylis aciculiformis</i>	na
	Orchidaceae	<i>Pterostylis pusilla</i>	na
	Orchidaceae	<i>Thelymitra alcockiae</i>	na
	Orchidaceae	<i>Thelymitra antennifera</i>	na
	Orchidaceae	<i>Thelymitra rubra</i>	na
	Orobanchaceae	<i>Parentucellia latifolia</i> ^a	na
	Oxalidaceae	<i>Oxalis perennans</i>	na
	Phyllanthaceae	<i>Poranthera microphylla</i>	na
	Pittosporaceae	<i>Billardiera cymosa</i> subsp. <i>cymosa</i>	na
	Pittosporaceae	<i>Pittosporum angustifolium</i>	na
	Plantaginaceae	<i>Plantago bellardii</i> ^a	Silky Plantain
	Plantaginaceae	<i>Plantago gaudichaudii</i>	na
	Plantaginaceae	<i>Plantago hispida</i>	na
	Plantaginaceae	<i>Plantago varia</i>	na
	Plantaginaceae	<i>Stemodia florulenta</i>	na
	Plantaginaceae	<i>Stemodia</i> sp.	na
	Plumbaginaceae	<i>Limonium lobatum</i> ^a	Winged Sea-lavender
	Poaceae	<i>Anthosachne kingiana</i> subsp. <i>multiflora</i>	na
	Poaceae	<i>Anthosachne scabra</i>	na
	Poaceae	<i>Aristida behriana</i>	na

Group	Family	Species	Common name
	Poaceae	<i>Austrostipa curticomae</i>	na
	Poaceae	<i>Austrostipa elegantissima</i>	na
	Poaceae	<i>Austrostipa nodosa</i>	na
	Poaceae	<i>Avellinia festucoides</i> ^a	na
	Poaceae	<i>Brachypodium distachyon</i> ^a	False Brome
	Poaceae	<i>Briza maxima</i> ^a	Large Quaking Grass
	Poaceae	<i>Briza minor</i> ^a	Lesser Quaking Grass
	Poaceae	<i>Ehrharta calycina</i> ^a	Perennial Veldt-grass
	Poaceae	<i>Enteropogon acicularis</i>	na
	Poaceae	<i>Eragrostis curvula</i> ^a	African Lovegrass
	Poaceae	<i>Eragrostis dielsii</i>	na
	Poaceae	<i>Hordeum marinum</i> ^a	na
	Poaceae	<i>Lachnagrostis filiformis</i>	na
	Poaceae	<i>Lagurus ovatus</i> ^a	Hares-tail Grass
	Poaceae	<i>Lolium rigidum</i> ^a	Wimmera Rye-grass
	Poaceae	<i>Neurachne alopecuroides</i>	na
	Poaceae	<i>Parapholis incurva</i> ^a	Coast Barb-grass
	Poaceae	<i>Pentameris airoides</i> subsp. <i>airoides</i> ^a	na
	Poaceae	<i>Phalaris paradoxa</i> ^a	Paradoxical Canary-grass
	Poaceae	<i>Poa sieberiana</i> var. <i>hirtella</i>	na
	Poaceae	<i>Puccinellia perlaxa</i>	na
	Poaceae	<i>Puccinellia stricta</i>	na
	Poaceae	<i>Rostraria cristata</i> ^a	Annual Cat's-tail
	Poaceae	<i>Rytidosperma geniculatum</i>	na
	Poaceae	<i>Rytidosperma setaceum</i>	na
	Poaceae	<i>Tribolium acutiflorum</i> ^a	na
	Poaceae	<i>Walwhalleya proluta</i>	na
	Polygalaceae	<i>Comesperma calymega</i>	na
	Polygonaceae	<i>Duma florulenta</i>	na
	Polygonaceae	<i>Rumex brownii</i>	na
	Polygonaceae	<i>Rumex dumosus</i>	na
	Proteaceae	<i>Adenanthos terminalis</i>	na
	Proteaceae	<i>Grevillea ilicifolia</i>	na
	Proteaceae	<i>Grevillea ilicifolia</i> subsp. <i>ilicifolia</i>	na
	Proteaceae	<i>Grevillea ilicifolia</i> subsp. <i>lobata</i>	na
	Proteaceae	<i>Grevillea lavandulacea</i> subsp. <i>lavandulacea</i>	na
	Proteaceae	<i>Hakea mitchellii</i>	na
	Proteaceae	<i>Hakea rostrata</i>	na
	Proteaceae	<i>Isopogon ceratophyllus</i>	na
	Ranunculaceae	<i>Adonis microcarpa</i> ^a	Pheasants-eye Adonis

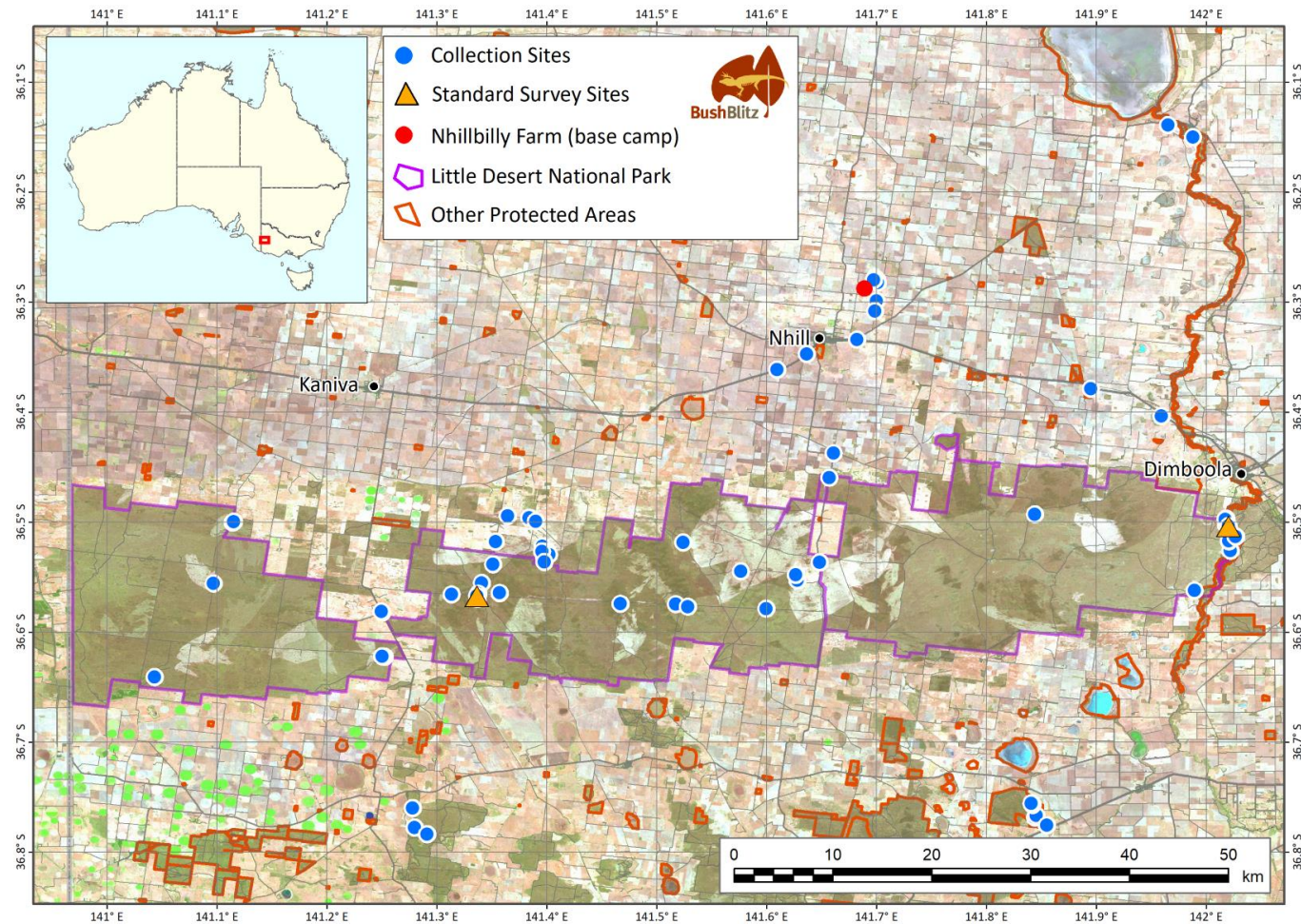
Group	Family	Species	Common name
	Ranunculaceae	<i>Myosurus australis</i>	na
	Ranunculaceae	<i>Ranunculus pumilio</i> var. <i>pumilio</i>	na
	Ranunculaceae	<i>Ranunculus sessiliflorus</i> var. <i>pilulifer</i>	na
	Restionaceae	<i>Apodasmia brownii</i>	na
	Rhamnaceae	<i>Cryptandra tomentosa</i>	na
	Rhamnaceae	<i>Spyridium eriocephalum</i> var. <i>eriocephalum</i>	na
	Rhamnaceae	<i>Spyridium subochreatum</i>	na
	Rosaceae	<i>Aphanes australiana</i>	na
	Rubiaceae	<i>Asperula conferta</i>	na
	Rubiaceae	<i>Asperula wimmerana</i> ^c	Wimmera Woodruff
	Rubiaceae	<i>Galium gaudichaudii</i> subsp. <i>gaudichaudii</i>	na
	Rutaceae	<i>Boronia coerulescens</i> subsp. <i>coerulescens</i>	na
	Rutaceae	<i>Boronia filifolia</i> ^c	Slender Boronia
	Rutaceae	<i>Phebalium stenophyllum</i> ^c	Narrow-leaf Phebalium
	Rutaceae	<i>Philotheca angustifolia</i> subsp. <i>angustifolia</i>	na
	Rutaceae	<i>Philotheca pungens</i>	na
	Rutaceae	<i>Zieria veronicea</i> subsp. <i>veronicea</i> ^c	Pink Zieria
	Santalaceae	<i>Choretrum glomeratum</i> var. <i>chrysanthum</i> ^c	Golden Sour-bush
	Santalaceae	<i>Choretrum glomeratum</i> var. <i>glomeratum</i> ^c	Common Sour-bush
	Santalaceae	<i>Exocarpos strictus</i>	na
	Santalaceae	<i>Leptomeria aphylla</i>	na
	Sapindaceae	<i>Dodonaea bursariifolia</i>	na
	Scrophulariaceae	<i>Eremophila gibbifolia</i> ^c	Coccid Emu-bush
	Scrophulariaceae	<i>Limosella australis</i>	na
	Scrophulariaceae	<i>Myoporum parvifolium</i>	na
	Solanaceae	<i>Nicotiana glauca</i> ^a	Tree Tobacco
	Solanaceae	<i>Nicotiana suaveolens</i> ^c	Austral Tobacco
	Solanaceae	<i>Solanum simile</i>	na
	Stylidiaceae	<i>Levenhookia dubia</i>	na
	Stylidiaceae	<i>Levenhookia pusilla</i> ^c	Midget Stylewort
	Stylidiaceae	<i>Stylidium graminifolium</i>	na
	Thymelaeaceae	<i>Pimelea curviflora</i> var. <i>subglabrata</i>	na
	Thymelaeaceae	<i>Pimelea glauca</i>	na
	Thymelaeaceae	<i>Pimelea humilis</i>	na
	Thymelaeaceae	<i>Pimelea octophylla</i>	na
	Thymelaeaceae	<i>Pimelea phyllicoides</i>	na
	Violaceae	<i>Hybanthus floribundus</i> subsp. <i>floribundus</i>	na
Liverworts	Cephaloziellaceae	<i>Cephaloziella exiliflora</i>	na
	Ricciaceae	<i>Riccia</i> sp.	na
Mosses	Bartramiaceae	<i>Bartramia hampeana</i> subsp. <i>hampei</i>	na

Group	Family	Species	Common name
	Bryaceae	<i>Gemmabryum</i> sp.	na
	Bryaceae	<i>Rosulabryum billardieri</i>	na
	Bryobartramiaceae	<i>Bryobartramia novae-valesiae</i>	na
	Ditrichaceae	<i>Pleuridium nervosum</i>	na
	Fissidentaceae	<i>Fissidens megalotis</i>	na
	Funariaceae	<i>Funaria hygrometrica</i>	na
	Funariaceae	<i>Goniomitrium acuminatum</i> subsp. <i>enerve</i>	na
	Gigaspermaceae	<i>Gigaspermum repens</i>	na
	Pottiaceae	<i>Acaulon integrifolium</i>	na
	Pottiaceae	<i>Didymodon torquatus</i>	na
	Pottiaceae	<i>Pseudocrossidium crinitum</i>	na
	Pottiaceae	<i>Syntrichia antarctica</i>	na
	Pottiaceae	<i>Tetrapterum cylindricum</i>	na
	Pottiaceae	<i>Triquetrella papillata</i>	na
	Splachnaceae	<i>Tayloria octoblepharum</i>	na
Fungi	Albuginaceae	<i>Albugo</i> sp.	na
	Pileolariaceae	<i>Uromycladium</i> sp.	na
	Pucciniaceae	<i>Puccinia saccardoi</i>	na
	Ustilaginaceae	<i>Ustilago comburens</i>	na
	Tilletiaceae	<i>Tilletia ehrhartae</i>	na

a Introduced and/or pest species. **b** Listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth). **c** Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (Victoria). **na** Not available.

Appendix B: Collection sites

Map B1 Map of collection sites



Glossary

Term	Definition
AFD	Australian Faunal Directory
ALA	Atlas of Living Australia
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
FFG Act	<i>Flora and Fauna Guarantee Act 1988</i> (Victoria)
Introduced	Not indigenous; not native to the area in which it now occurs.
Lineage	A sequence of species each of which is considered to have evolved from its predecessor.
MV	Museums Victoria
Pest species	A species that has the potential to have a negative environmental, social or economic impact.
Putative new species	An unnamed species that, as far as can be ascertained, was identified as a new species as a direct result of this Bush Blitz.
QM	Queensland Museum
Range extension	Increase in the known distribution or area of occurrence of a species.
RBGV	Royal Botanic Gardens Victoria
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.
Threatened	Fauna or flora that are listed under Section 178 of the EPBC Act (or equivalent State legislation) in any one of the following categories – extinct, extinct in the wild, critically endangered, endangered, vulnerable, conservation dependent.
Undescribed taxon	A taxon (usually a species) that has not yet been formally described and named.
UNSW	University of New South Wales
Vascular plants	A lineage of plants that possess well-developed veins (vascular tissue) in their stems, roots and leaves. Vascular plants include the majority of familiar land plants: flowering plants, ferns, conifers, cycads and fern allies, but not mosses, liverworts or algae.
Vouchers (voucher specimens)	Any specimen, usually a dead animal or preserved plant sample, that serves as a basis of study and is retained as a reference.

References

Chapman, AD 2009, [Numbers of Living Species in Australia and the World](#) 2nd edn, Australian Biological Resources Study, Canberra, accessed 13 September 2021.

Victorian Government 1996, [Little Desert National Park Management Plan \[4.89MB\]](#), Department of Environment, Land, Water and Planning, previously Department of Natural Resources and Environment, accessed 18 October 2021.