

Latrobe Valley Naturalist

March – April 2020

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General meetings

Held at 7:30 pm on the fourth Friday of each month at the Newborough Uniting Church, Old Sale Road Newborough VIC 3825



Peter Marriott presenting Ken Harris with the Entomological Society of Victoria's Le Souef Memorial Award on 17 January 2020 (Photo: David Stickney).

Upcoming events

Due to government restrictions imposed to control the spread of the Covid-19 coronavirus, all LVFNC meetings, general excursions, and Bird and Botany Group activities have been cancelled until further notice.

As there will be no material from excursions and speakers to publish in the Naturalist during this time, you are encouraged to send in short articles or photos about interesting observations of nature in your own garden or local area.

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Ken Harris receives Le Souef Memorial Award

Ken Harris was awarded the 2019 Le Souef Memorial Award for contributions to Australian entomology by an amateur. The announcement was made at the end of last year and the presentation to Ken occurred at our Club meeting in January. The award was presented by Peter Marriot who is the immediate past president of the Entomological Society of Victoria and had travelled from Melbourne to present the award. The award recognises the very substantial role Ken has played in the development of knowledge of our insect fauna, especially in Morwell National Park but also statewide.

Ken has carried out extensive surveys of moths and other light-attracted insects over a ten-year period (his first permit application for light trapping was in April 2009). His surveys have principally been in different sections of Morwell NP but have also included a number of sites throughout Victoria. Many of these surveys have been all-night sessions. The surveys have produced important records of range extensions regionally and nationally, as well as developing a very important local list, which will contribute to our understanding of the way climate change affects our natural environment. They have also engaged many of our Club members and members of the community in experiencing local insect diversity.

Ken has a broad knowledge of many aspects of natural history. He established and continues to maintain a website for Morwell NP, which contains a list and photographs of every species recorded in the Park to date. His interest in photography complements his understanding of many orders of plants, insects and other animals, and he has become the public face of the Park.

Ken has been a member of several Clubs and Friends Groups since moving from England to Tasmania, and later Victoria, and continues to make a contribution to such groups.

He was a founding member of the Friends of Morwell NP and is currently their president. He has been a long-standing member of our Club since 1985 and is currently one of the Club's vice presidents. He regularly attends our monthly meetings and over the years has given quite a number of presentations, many on entomology topics. In his presentations he always impresses members

with the extent and detail of his knowledge, his prodigious memory, and his extensive collection of photographs.

Ken joined the Entomological Society in 2006, and he regularly attends and contributes presentations at their monthly meetings and writes articles for their *Victorian Entomologist* magazine. He co-authored the book 'Lepidoptera and Neuroptera of Morwell National Park' which illustrates over 670 Lepidoptera and 29 species of Neuroptera, and is currently working on a guide to all of the Victorian Neuroptera (Lacewings).

Our Club joins the Entomological Society in congratulating Ken on receiving the award, which he richly deserves. We wish him well in continuing with his interests in natural history into the future.

David Stickney



omological Society

of Victoria

Latrobe Valley Naturalist

CLUB SPRING CAMP 2019 – Part 2

Kow Swamp and Murray River Boat Ramp – Sunday afternoon

After lunch at Reedy Lagoon on Gunbower Island, we travelled back through Cohuna to Leitchville, which turned out to be larger than expected; it had a pub and several other businesses. After a short diversion (our leader missed the turnoff) we arrived at Kow Swamp Picnic Area. We were looking out over an inundated area of land with lots of dead trees sticking out of the water. It was good habitat for waterbirds, and there was a good number of them, but not a great variety; we actually recorded more terrestrial birds than waterbirds at this location.



Birdwatching at Kow Swamp (Photo: Jack Weerts)

Pelicans and Little Black Cormorants were basking in the sun and White and Straw-necked Ibis were feeding in the paddocks around the water's edge. The highlight of the visit was a group of terns soaring over the lake and diving into it from time to time for a catch. They were identified as Whiskered Terns in breeding plumage. A breeding adult has a distinctive dark, smoky-grey body and contrasting white cheeks (which can look like broad, white "whiskers") underneath a black cap. The nonbreeding plumage is

a pale, silvery grey overall with a faded shadow of the cap.

The place was less exciting for the botanists in the group unless they wanted to make a study of introduced plants. The one interesting plant to mention is Grey Box *Eucalyptus microcarpa*. This box tree can be recognised by it smooth upper branches and its tiny nuts. Apparently it is a good honey yielder.

The last stop for the afternoon was a boat ramp at the Murray River near Gunbower. Our energy levels had started to drop after a warm and activity-packed day, but most of us still ventured out for a short stroll after afternoon tea. The area was



Whiskered Tern at Kow Swamp (Photo: Matt Campbell)

very dry and there was limited understorey underneath the eucalypt trees *Eucalyptus camaldulensis and E. microcarpa*. We found flowering Weeping Pittosporum *Pittosporum angustifolium* and Blackanther Flax-lily *Dianella revoluta* – however, on this occasion, the anthers were brown.



Pelicans roosting at Kow Swamp (Photo: Matt Campbell)

Jack and I spent some time looking at an Acacia with coiled seed pods. The leaves of the plant looked very much like those of Gold-dust Wattle *Acacia acinacea*, but according to Costermans it is not meant to have the curly seed pods – these are attributed to the closely related species *A. rotundifolia*. Who thought that botany was easier than bird watching?

On the trunk of one of the Grey Boxes was a lace monitor with a banded tail who was in a hurry to get away from us, but Jack managed to take a few pictures of the fellow.

Marja Bouman

Editor's note: VicFlora now considers specimens formerly treated as A. rotundifolia *to be a variant of* A. acinacea.

Kerang Lakes – Monday morning

This morning the weather was a little warmer than the previous

two and we set off for a day exploring some of the 23 wetlands on both public and private land that make up the Kerang Wetlands Ramsar site. Our first stop was at the ibis rookery at Reedy Lakes. The Reedy Lakes system is comprised of three permanent freshwater lakes maintained at a constant level as part of the Torrumbarry irrigation water supply system. All three ibis species are found here; the lakes support 10 percent of the region's population of Straw-necked Ibis and Australian White Ibis, with Glossy Ibis only seen during very wet seasons. After spotting a Blue-faced Honeyeater in the carpark, we all set off in varying directions, with some of the birdos heading around the lake or for the bird hide where a flock of Grey-crowned Babblers pottered around the base of the hide, unconcerned by the human invasion.

As usual, the botanists were stuck in the first few metres beyond the carpark, finding many different saltbushes to identify and lots of the two attractive, but weedy, Ice Plants of the *Mesembryanthemum* genus. The crystals of *M. crystallinum* were fascinating to see under the lens. The overstorey vegetation comprised River Red Gum *Eucalyptus camaldulensis* and Black Box *E. largiflorens*, with the middle storey Willow Wattle *Acacia salicina* and the main understorey the saltbushes. Tangled Lignum *Duma florilenta* and Cumbungi *Typha orientalis* fringing the lakes provided refuge and nesting sites for the ibis and other birds. We later identified the Paperbark along the path as

Melaleuca halmaturorum, listed as vulnerable in Victoria. As we observed all weekend, the soil was parched and the ground flora limited to the extremely hardy.

Our next stop was Lake Cullen, the only ephemeral saline wetland within the Kerang Wetlands Ramsar site. It is used extensively for foraging by large numbers of waterbirds due its large size (629 ha) and unique environment. Pied Stilts obliged on the shoreline and there were plenty of other waterbirds to keep the birdos busy. The vegetation here was in distinct zones from the shoreline to the Grey Box *Eucalyptus microcarpa* woodland in the background. We found

the interesting Creeping Monkey-flower *Thyridia repens* in one of the zones and many varieties of saltbush further back. A single specimen of Leafless Ballart *Exocarpos aphylla* was home to something

Lace monitor near the Brereton Road boat ramp (Photo: Jack Weerts)

Crystals of a Common Ice-plant (Photo: Lorraine Norden)





Lake Cullen shoreline (Photo:

Lorraine Norden)



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interesting but nobody volunteered to investigate.

From there we headed to our lunch stop at Kangaroo Lake, where we enjoyed our picnic in the shade with a view of the exotic willows and a carpet of flowering Gazania; the botanists could rest their brains.

Lorraine Norden



Unknown inhabitants of Leafless Ballart (Photo: Lorraine Norden)

Lakes Tutchewop and William – Monday afternoon

After lunch we drove up the Murray Valley Highway to Lake Tutchewop. The wetland has been used as part of a salt interception scheme since the 1960s in an attempt to keep salt out of the Murray River. Land clearing and irrigation have increasingly mobilised salt from the soil. Highly saline irrigation water and runoff have been diverted into the shallow basin of this ephemeral lake, evaporation then concentrating the salt. Current studies are modelling surface water-groundwater interactions to assess the ongoing sustainability of salt disposal at this site. I knew none of this before our visit, only that Lake Tutchewop is a Ramsar listed wetland of international significance.



Walking on Lake Tutchewop (Photo: Barry Lockett)

It was an awesome view – a silent, sparkling expanse of white, grey and pink salt crust. There appeared to be open water in the far distance. I was fascinated and walked a short distance out onto the crust before starting to sink. Most people were wondering about the reasons for the pink to red coloration of some of the large clear salt crystals. I've googled this question and there are several ideas to be considered...

Some algae thrive in salty water and these microorganisms of vivid colours (from pale green to bright red) thrive at different salinity levels. The red tint may indicate the presence of algae that thrives in medium-to-high salinity environments. The colour may also

indicate the presence of different minerals in the water. Saline water consists of salt in a solution that can be evaporated to leave crystals. The colour of these crystals depends upon the composition of the salt. If the salt is sodium chloride, then transparent halite or rock crystals form. Saline irrigation water and near-surface groundwater would likely contain other soluble chlorides of calcium, magnesium and potassium that produce many other colours including yellow, orange, red, blue and purple. Various trace minerals like iron and zinc, and other impurities such as dissolved organic matter, could also be expected.

Whatever the answer, the lake was a beautiful sight. Most unusually (I'm told), Beaded Glasswort *Sarcocornia quinqueflora* was growing from the top of the crescent-shaped ridge (or lunette) all the way down the slope to the lake's edge. Some persistent and fortunate people saw a White-winged Fairy-wren – I did not.

Lake William was located further along the track. It was a similar lake, but smaller and containing more open water that was a beautiful creamy yellow and deep blue in colour. One Google search for further information produced a reference to "Lake William Mine", located at the site of Lake William, being a sapphires deposit.



Looking out across Lake William (Photo: Phil Rayment)

The afternoon was hot and we concluded a long day with a short wander around in the nearby Mystic Park Bushland Reserve, an area typical of the local dry-country vegetation and birdlife.

Alix Williams

*Plant and bird lists for the Cohuna spring camp are available in Appendices I and II

Australian native peas

Our November speaker was Royce Raleigh, the president of the Wimmera Growers of Australian Plants. He and his wife have an award-winning five acre garden in Wartook in the Grampians that has been developed from an open paddock.

Royce first pointed out that Fabaceae, the pea family, is a large family with 700 genera containing 19,000 species worldwide. In Australia there are 140 genera and more than 1,100 species. Over half the pea plants that are all or mostly Australian are "egg and bacon" peas belonging to the tribes Bossiaeae (~80 species) and Mirbelieae (~500 species). Some genera within the Bossiaeae group include *Bossiaea, Goodia, Hovea, Muelleranthus, Platylobium* and *Templetonia*. Included in the Mirbelieae are the genera *Aotus, Brachysema, Daviesia, Dillwynia, Eutaxia, Gastrolobium, Gompholobium, Isotropsis, Jacksonia, Latrobe, Leptosema, Mirbelia, Oxylobium, Phyllota, Pultenaea, Sphaerolobium* and *Viminaria*.

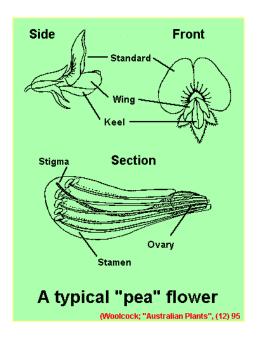
Australia also has representatives of more widely-distributed genera, including *Crotalaria, Hardenbergia, Indigofera, Kennedia, Lotus, Sesbania, Swainsona* and *Tephrosia*.

Pea flowers consist of five irregularly-shaped petals – roughly two wings at the top, and three lower petals joined at the top to form a "keel". Once we get to the stamens, there are ten of them within the keel and they fall into three groups:

Group I – All stamens individually free (e.g. *Aotus, Chorizema, Daviesia, Dillwynia, Eutaxia, Gompholobium, Mirbelia, Oxylobium, Phyllota, Pultenaea, Sphaerolobium, Viminaria*)

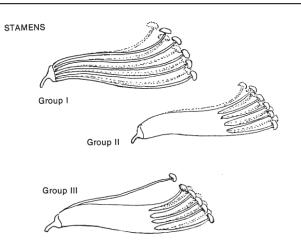
Group II – All fused into a tube (e.g. *Bossiaea, Goodia, Hovea, Platylobium, Templetonia*)

Group III – Nine fused and the tenth one free (e.g. *Glycine, Hardenbergia, Indigophora, Kennedia, Swainsona*)



The flowers are followed by pods (legumes) which contain few to many hard seeds and which vary greatly in shape – flat, short, elongated or cylindrical. Pea seeds often stay viable for a long time.

Plants with pea flowers have a very wide distribution within Australia and can be found in coastal, alpine, desert and tropical environments. Like the acacias, many pea plants occur in areas where



The different groups of peas based on their stamen arrangement (Source: Royce's presentation)

I made a note of how many species of pea plants were growing in Royce's garden, but sadly can't now locate this. For those who aspire to successfully grow peas, he said good drainage is the key. The paths in his garden are recessed due to the soil having been excavated to build up the beds, and scoria is used as mulch. My guess is that the Grampians may be a more rewarding location than Gippsland for growing dry-climate native plants, but the excursion to Moondarra State Park the next day found some pea plants flowering beautifully, so it's not entirely a lost cause here.



Ouch bush (Photo: Royce Raleigh)

bushfires are common, such as dry forests and

"pioneer" species, quickly recolonising burnt-out areas and then being gradually replaced by other

Royce has travelled widely and he has many photos of pea flowers in many different environments. Some

of Royce's photos showed really unusual pea plants such as the Western Australian Ouch Bush *Daviesia pachyphylla*, which looks much like a cactus with pea

woodlands; in these habitats they are often

species in the plant community.

flowers.

Jay Duncan

*A plant list for this excursion is available in Appendix III

Peas in Moondarra State Park, clockwise from right: Globepea Sphaerolobium minus, Common Wedge-pea Gompholobium huegelii (Photos: Tamara Leitch), Golden Bush-pea Pultenaea gunnii (Photo: Irene Proebsting).





Finance

Cash Management Trading Account: \$2,168.53 Term Deposit: \$16,854.52

Business Arising, Correspondence & General Business

- AGM: Prior to the business meeting, we held the AGM, which was scheduled for the cancelled Club night of Friday 27 March. Rose has circulated a notice that the AGM we held is provisional if anyone responds by 7th April with a nomination or motion, the meeting just held will be nullified and a new date will be set when Covid-19 restrictions are lifted.
- Newborough Uniting Church Hall is now closed due to Covid-19. We had paid hire fees in advance and decided to leave the funds with the church for future bookings rather than request a refund.
- SEANA: Autumn Camp has been cancelled. Gippsland may hold a Camp in Spring 2023. Phil's turn on the management committee expires this year and he is happy to be nominated for a further term of two years.
- Media outlets 'Thank you for support' certificates: Jay has sent a PDF of the certificate, which we will now print. To be signed by David S and Rose.
- Club website: Decision made to canvass club members on what they want or expect from the club website at January meeting did not go ahead due to award presentation and numerous speakers. Subcommittee for follow up: Wendy, Jay, Phil, Rose, Tamara and Mark Watkins. Rose, Jay and John Sunderland will devise questions to ask Club members and contact them in various ways – phone calls, paper surveys, online surveys. List of questions for members is being formulated.
- Email from Andy Meddick, Animal Justice Party MP (representing electorate of Western Victoria), was circulated by FNCV, regarding decision by the government to open duck season again. Email suggested writing to relevant ministers and the premier and posting on social media. Rose to discuss with Denis about re-sending version of his initial letter.
- Dawson Railway Reserve Signage: Design has been sent to the printers.
- Ken Smith's bequest of \$7,000: Solicitors advised that probate has been granted and they are arranging to distribute Ken's assets and will be in touch again. It was decided to form a subcommittee to sort out spending of the funds: Wendy, Ken, maybe Denis and Alix. Suggestions so far:
 - Award at Tyers Art Show, for works depicting the natural environment
 - Primary school program/scholarship
 - Books for a school
- Bon's plan lists: Phil reported that there are thousands of lists. Phil and Wendy will review the options and costs of digitisation, ranging from simply scanning lists, to entering plants into a database.
- 'Scope to spy on spoonbills' has been purchased using grant and Club funds, and is excellent. Jay and Joelle are working on getting the Club's tripod fixed.
- Bird Challenge Count 2019: Good turnout of around 50 people. Data upload to Birdlife has been very difficult due to various forms in which people recorded their sightings, and poor receiving program at Birdlife.
- Summer Camp at Cape Paterson was a great success; 41 people attended from the list of those who had registered, plus quite a lot of extra people, especially at evening dinners.

Conservation Matters

- Regular excursion attendees are encouraged to purchase a spray bottle/brush and methylated spirits to take along on excursions for shared use to sterilise boots and minimise spread of pathogens. Reimbursement available if desired – give receipts to David Mules. Convoy guidelines, printed up by Rose, are to be kept with these items.
- David M and Ken H visited Holey Plains on 6th March to check on the recovery of the fenced patch of Wellington Mint Bush. They observed very good numbers of plants in the fenced area, so dense that it was difficult to say if they had grown from seed or the rootstock of plants that were present before the fire. Almost no plants were observed outside of the fence.

WELCOME TO NEW MEMBERS

The Club welcomes Ryan Chick from Morwell. We wish you a long and happy association with us.

Please note that annual club membership fees were due on **1st March 2020**.

Latrobe Valley Naturalist is the official publication of the Latrobe Valley Field Naturalists Club Inc. The Club subscription includes the "Naturalist".

Brief contributions and short articles on any aspect of natural history are invited from members of all clubs. Articles, including those covering Club speakers and excursions, would typically be around one A4 side in length, should not exceed 1,000 words, and may be edited for reasons of space and clarity. Photos should be sent as an attachment and be a maximum of 1 megabyte in size.

Responsibility for the accuracy of information and opinions expressed in this magazine rests with the author of the article.

Contributions should be addressed to:

Ms Tamara Leitch The Editor LVFNC Inc. PO Box 839 TRARALGON VIC 3844 Phone: 0438 372 186

Email: tleitch@wideband.net.au

Deadline for articles to be considered for inclusion in the next issue (May/June): 27 April 2020

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The Naturalist is generously printed by the office of Russell Northe MLA, Member for Morwell

APPENDICES

APPENDIX I – Plant list for Cohuna Spring Camp 18-22 October 2019

TT – Terrick Terrick National Park GNP – Gunbower National Park KL – Kerang Lakes LC – Lake Cullen

Family	Botanical Name	Common Name	TT	GNP	KL	LC
Liverworts						
Ricciaceae	Ricciocarpos natans	Fringed Heartwort		х		
Ferns						
Marsileaceae	Marsilea costulifera	Narrow-leaf Nardoo		х		
Pteridaceae	Cheilanthes austrotenuifolia	Green Rock Fern	х			
Monocotyledons						
Aizoaceae	Mesembryanthemum	Common Ice-plant		х	х	
Aizoaceae	Mesembryanthemum	Small Ice Plant	х	х	х	х
Alismataceae	Alisma lanceolatum*	Narrow-leaved water		х		
Alismataceae	Damasonium minus	Starfruit		х		
Araceae	Lemna disperma	Common Duckweed	х			
Asparagaceae	Arthropodium strictum	Chocolate Lily	х			
Asparagaceae	Lomandra effusa	Scented Mat-rush	х			
Asphodelaceae	Dianella revoluta	Black-anther Flax-lily	х			
Cyperaceae	Carex tereticaulis	Hollow Sedge		х	х	
Cyperaceae	Cyperus exaltatus	Tall Flat-sedge			х	
Cyperaceae	Eleocharis plana	Ribbed Spike-rush	х			
Iridaceae	Romulea rosea*	Onion-grass	х			
Juncaceae	Juncus acutus*	Sharp Rush			х	
Juncaceae	Juncus aridicola	Tussock Rush			х	
Juncaceae	Juncus ingens	Giant Rush		х		
Juncaginaceae	Cycnogeton procerum	Water Ribbons		х		
Poaceae	Austrostipa elegantissima	Feather Speargrass	х	х	х	
Poaceae	Briza minor*	Lesser Quaking Grass	х			
Poaceae	Bromus diandrus*	Great Brome			х	
Poaceae	Bromus rubens*	Red Brome	х	х	х	
Poaceae	Distichlis distichopyhylla	Australian Salt-grass			х	
Poaceae	Lolium perenne*	Perennial ryegrass			х	
Poaceae	Phragmites australis	Common Reed			х	

Family	Botanical Name	Common Name	TT	GNP	KL	LC
Poaceae	Poa annua*	Annual Meadow-grass		х	х	
Poaceae	Rytidosperma sp.	Wallaby-grass	х	х		
Potamogetonaceae	Potamogeton cheesemanii	Red Pondweed		х		
Typhaceae	Typha orientalis	Broadleaf Cumbungi			х	
Dicotyledons						
Amaranthaceae	Ptilotus macrocephalus	Feather-heads	х			
Amaranthaceae	Ptilotus spathulatus	Pussy-tails	х			
Asteraceae	Actinobole uliginosum	Flannel Cudweed	х			
Asteraceae	Arctotheca calendula*	Capeweed	х			
Asteraceae	Cassinia arcuata	Drooping Cassinia	х		х	
Asteraceae	Centipeda cunninghamii	Common Sneezeweed		х		
Asteraceae	Chrysocephalum apiculatum	Common Everlasting	х			
Asteraceae	Chrysocephalum	Clustered Everlasting	х			
Asteraceae	Cotula coronopifolia	Water-buttons			х	
Asteraceae	Erigeron bonariensis*	Flaxleaf Fleabane		х		
Asteraceae	Gazania linearis*	Gazania			х	
Asteraceae	Hypochaeris glabra*	Smooth Cat's-ear	х			
Asteraceae	Hypochaeris radicata*	Cat's-ear	х	х	х	
Asteraceae	Lactuca serriola*	Prickly Lettuce			х	
Asteraceae	Leptorhynchos squamatus	Scaly Buttons	х			
Asteraceae	Rhodanthe corymbiflora	Paper Sunray	х		х	
Asteraceae	Senecio quadridentatus	Cottony Fireweed	х	х	х	
Asteraceae	Sonchus asper*	Rough Sow-thistle	х	х	х	
Asteraceae	Sonchus oleraceus*	Smooth Sow-thistle	х	х	х	
Asteraceae	Vittadinia cuneata	Fuzzweed	х	х		
Asteraceae	Xerochrysum bracteatum	Golden Everlasting	х	х		
Boraginaceae	Echium plantagineum*	Paterson's Curse	х			
Brassicaceae	Brassica sp.*	Mustard	х	х		>
Cactaceae	Opuntia stricta*	Common Prickly Pear	х			
Campanulaceae	Isotoma axillaris	Showy Isotome	х			
Campanulaceae	Wahlenbergia luteola	Yellowish Bluebell	х			
Caryophyllaceae	Stellaria angustifolia	Swamp Starwort		х		
Casuarinaceae	Allocasuarina luehmannii	Buloke	х	х		
Celastraceae	Stackhousia subterranea	Grassland Candles	х			
Chenopodiaceae	Atriplex lindleyi	Flat-topped Saltbush			х	>
Chenopodiaceae	Atriplex nummularia	Old-man Saltbush			х	>
Chenopodiaceae	Einadia hastata	Saloop		х	х	
Chenopodiaceae	Einadia nutans	Nodding Saltbush	х	х	х	

Family	Botanical Name	Common Name	ΤT	GNP	KL	L
Chenopodiaceae	Enchylaena tomentosa	Ruby Saltbush		х		х
Chenopodiaceae	Maireana decalvans	Black Cotton Bush	х		х	
Chenopodiaceae	Maireana humillima	Dwarf Bluebush	х			
Chenopodiaceae	Rhagodia spinescens	Hedge Salt-bush		х		>
Chenopodiaceae	Salicornia quinqueflora	Beaded Glasswort			х	>
Chenopodiaceae	Salsola tragus	Prickly Russian-thistle	х			
Chenopodiaceae	Sclerolaena muricata	Black Roly-poly		х		
Chenopodiaceae	Tecticornia syncarpa	Glasswort				;
Convolvulaceae	Convolvulus remotus	Grassy Bindweed	х			
Crassulaceae	Crassula colligata	Crassula				
Crassulaceae	Crassula sieberiana	Sieber Crassula	х			
Cupressaceae	Callitris glaucophylla	White Cypress-pine	х	х		
Fabaceae	Acacia deanei paucijuga	Deane's Wattle	х			
Fabaceae	Acacia salicina	Willow Wattle		х	х	
Fabaceae	Acacia stenophylla	River Myall			х	
Fabaceae	Medicago polymorpha*	Burr Medic				
Fabaceae	Trifolium angustifolium*	Narrow-leaved Clover	х	х		
Fabaceae	Trifolium arvense*	Hare's-foot Clover	х			
Fabaceae	Trifolium repens*	White Clover		х	х	
Geraniaceae	Erodium crinitum	Blue Heron's-bill	х			
Goodeniaceae	Velleia paradoxa	Spur Velleia	х			
Haloragaceae	Gonocarpus elatus	Tall Raspwort	х			
Haloragaceae	Myriophyllum papillosum	Robust Water-milfoil		х	х	
Hydrocharitaceae	Ottelia ovalifolia	Swamp Lily	х	х	х	
Lamiaceae	Marrubium vulgare*	Horehound	х	х		
Lamiaceae	Prostanthera nivea	Snowy Mint-bush	х			
Loranthaceae	Amyema quandang	Grey Mistletoe	х			
Malvaceae	Malva parviflora*	, Small-flowered Mallow			х	
Malvaceae	Sida corrugata	Variable Sida	х			
Menyathaceae	Nymphoides crenata	Wavy Marshwort		х		
, Myrtaceae	Eucalyptus camaldulensis	, River Red-gum	х	х	х	
, Myrtaceae	Eucalyptus largiflorens	Black Box		х	х	
, Myrtaceae	Eucalyptus melliodora	Yellow Box	х			
, Myrtaceae	Eucalyptus microcarpa	Grey Box	х	х		
Myrtaceae	Melaleuca halmaturorum	Salt Paperbark			х	
Nitrariaceae	Nitraria billardierei	Nitre-bush			x	
Onagraceae	Ludwigia peploides	Water Primrose		х		
Oxalidaceae	Oxalis perennans	Grassland Wood-sorrel	х	x	х	
Papaveraceae	Fumaria densiflora*	Dense-flowered Fumitory	-	x	-	
Pittosporaceae	Pittosporum angustifolium	Weeping Pittosporum	х	x	х	

Family	Botanical Name	Common Name	TT	GNP	KL	LC
Polygonaceae	Acetosella vulgaris*	Sheep Sorrel	x			
Polygonaceae	Duma florulenta	Tangled Lignum	~		х	
Polygonaceae	Rumex brownii	Slender Dock	х			
Proteaceae	Hakea tephrosperma	Hooked Needlewood	х			
Rutaceae	Correa glabra	Rock Correa	х			
Santalaceae	Exocarpos aphyllus	Leafless Ballart				х
Santalaceae	Exocarpos cupressiformis	Cherry Ballart	х			
Santalaceae	Exocarpos strictus	Pale-fruit Ballart		х		
Sapindaceae	Dodonaea viscosa	Sticky Hop-bush	х			
Scrophulariaceae	Eremophila longifolia	Berrigan	х			
Solanaceae	Lycium ferocissimum*	African Boxthorn	х	х	х	
Solanaceae	Solanum nigrum*	Black Nightshade	х			
Urticaceae	Parietaria debilis	Shade Pellitory	х			
Urticaceae	Urtica urens*	Small Nettle			х	

*Introduced species

APPENDIX II – Bird lists for Cohuna Spring Camp (D. Mules)

Cohuna township 19.10.2019

Coot, Eurasian Fulica atra Corella, Long-billed Cacatua tenuirostris Cormorant, Great Phalacrocorax carbo Cormorant, Little Black Phalacrocorax sulcirostris Cormorant. Little Pied Microcarbo melanoleucos Cuckoo-shrike, Black-faced Coracina novaehollandiae Darter, Australasian Anhinga novaehollandiae Duck, Australian Wood Chenonetta jubata Duck, Pacific Black Anas superciliosa Galah Eolophus roseicapillus Gull, Silver Chroicocephalus novaehollandiae Honeyeater, Blue-faced Entomyzon cyanotis Honeyeater, White-plumed Lichenostomus penicillatus Ibis, Straw-necked Threskiornis spinicollis Kite, Whistling Haliastur sphenurus Lapwing, Masked Vanellus miles Cracticus tibicen Magpie, Australian Magpie-lark Grallina cyanoleuca Martin, Tree Petrochelidon nigricans Manorina melanocephala Miner, Noisy Moorhen, Dusky Gallinula tenebrosa Night-heron, Nankeen Nycticorax caledonicus Pardalote, Striated Pardalotus striatus Parrot, Red-rumped Psephotus haematonotus Pelican, Australian Pelecanus conspicillatus Pigeon, Crested **Ocyphaps** lophotes Corvus mellori Raven, Little Reed-warbler, Australian Acrocephalus australis Rosella, Crimson Platycercus elegans Rosella, Eastern Platycercus eximius Sea-eagle, White-bellied Haliaeetus leucogaster Starling, Common Sturnus vulgaris Swallow, Welcome Hirundo neoxena Swamphen, Purple Porphyrio porphyrio Swan, Black Cygnus atratus Teal, Grey Anas gracilis

Terrick Terrick National Park 19.10.2019

Babbler, White-browed			
Bee-eater, Rainbow			
Bronze-cuckoo, Horsfield's			

Pomatostomus superciliosus Merops ornatus Chalcites basalis Bronzewing, Common Chat. Crimson Chough, White-winged Cuckoo, Pallid Dove, Peaceful Fairy-wren, Superb Fantail, Grey Firetail, Diamond Galah Honeyeater, White-plumed Kite, Black Magpie, Australian Martin, Fairy Martin, Tree Pardalote, Striated Parrot, Red-rumped Raven, Australian Raven, Little Ringneck, Australian Robin, Hooded Robin, Red-capped Shrike-thrush, Grey Sittella, Varied Sparrowhawk, Collared Thornbill, Chestnut-rumped Thornbill, Yellow Thornbill, Yellow-rumped Treecreeper, Brown Triller, White-winged Wagtail, Willie Wattlebird, Red Whistler, Golden Whistler, Rufous Whiteface, Southern

Phaps chalcoptera Epthianura tricolor Corcorax melanorhamphos Cacomantis pallidus Geopelia striata Malurus cyaneus Rhipidura albiscapa Stagonopleura guttata Eolophus roseicapillus Lichenostomus penicillatus Milvus migrans Cracticus tibicen Petrochelidon ariel Petrochelidon nigricans Pardalotus striatus Psephotus haematonotus Corvus coronoides Corvus mellori Barnardius zonarius Melanodryas cucullata Petroica goodenovii Colluricincla harmonica Daphoenositta chrysoptera Accipiter cirrocephalus Acanthiza uropygialis Acanthiza nana Acanthiza chrysorrhoa Climacteris picumnus Lalage sueurii Rhipidura leucophrys Anthochaera carunculata Pachycephala pectoralis Pachycephala rufiventris Aphelocephala leucopsis

Mount Hope Nature Conservation Reserve 19.10.2019

Eagle, Little Falcon, Brown Falcon, Peregrine Honeyeater, Singing Ibis, Straw-necked Kite, Black Kite, Whistling Parrot, Red-rumped Wagtail, Willie Hieraaetus morphnoides Falco berigora Falco peregrinus Lichenostomus virescens Threskiornis spinicollis Milvus migrans Haliastur sphenurus Psephotus haematonotus Rhipidura leucophrys

Gunbower National Park – Koondrook & Reedy Lagoon 20.10.2019

Bee-eater, Rainbow Bronzewing, Common Chough, White-winged Cockatoo, Sulphur-crested Cormorant, Little Pied Cuckoo-shrike, Black-faced Dove, Peaceful Emu Fairy-wren, Superb Fantail, Grey Friarbird, Noisy Galah Heron, White-faced Hobby, Australian Honeyeater, White-plumed Jacky Winter Kingfisher, Sacred Kite, Whistling Kookaburra, Laughing Magpie, Australian Magpie-lark Miner, Noisy Mistletoebird Pardalote, Striated Parrot, Red-rumped Raven, Australian Rosella, Crimson Rosella, Eastern Shrike-thrush, Grey Silvereye Spoonbill, Yellow-billed Swallow, Welcome Thornbill, Buff-rumped Treecreeper, Brown Treecreeper, White-throated Triller, White-winged Willie Wagtail Woodswallow, Masked Woodswallow, White-browed

Merops ornatus Phaps chalcoptera Corcorax melanorhamphos Cacatua galerita Microcarbo melanoleucos Coracina novaehollandiae Geopelia striata Dromaius novaehollandiae Malurus cyaneus Rhipidura albiscapa Philemon corniculatus Eolophus roseicapillus Egretta novaehollandiae Falco longipennis Lichenostomus penicillatus Microeca fascinans Todiramphus sanctus Haliastur sphenurus Dacelo novaequineae Cracticus tibicen Grallina cyanoleuca Manorina melanocephala Dicaeum hirundinaceum Pardalotus striatus Psephotus haematonotus Corvus coronoides Platycercus elegans Platycercus eximius Colluricincla harmonica Zosterops lateralis Platalea flavipes Hirundo neoxena Acanthiza reguloides Climacteris picumnus Cormobates leucophaea Lalage sueurii Rhipidura leucophrys Artamus personatus Artamus superciliosus

Kow Swamp 20.10.2019

Corella, Long-billed	Cacatua tenuirostris
Cormorant, Little Black	Phalacrocorax sulcirostris
Dove, Rock	Columba livia
Duck, Australian Wood	Chenonetta jubata
Duck, Pacific Black	Anas superciliosa
Galah	Eolophus roseicapillus
Honeyeater, Blue-faced	Entomyzon cyanotis
Honeyeater, White-plumed	Lichenostomus penicillatus
Ibis, Australian White	Threskiornis molucca
Ibis, Straw-necked	Threskiornis spinicollis
Kite, Whistling	Haliastur sphenurus
Kookaburra, Laughing	Dacelo novaeguineae
Magpie, Australian	Cracticus tibicen
Parrot, Red-rumped	Psephotus haematonotus
Pelican, Australian	Pelecanus conspicillatus
Sparrow, House	Passer domesticus
Starling, Common	Sturnus vulgaris
Swallow, Welcome	Hirundo neoxena
Swan, Black	Cygnus atratus
Tern, Whiskered	Chlidonias hybrida

Ibis Rookery, Middle Lake 21.10.2019

Babbler, Grey-crowned	Pomatostomus temporalis
Darter, Australasian	Anhinga novaehollandiae
Dove, Peaceful	Geopelia striata
Duck, Pacific Black	Anas superciliosa
Fairy-wren, Superb	Malurus cyaneus
Galah	Eolophus roseicapillus
Grassbird, Little	Megalurus gramineus
Harrier, Swamp	Circus approximans
Honeyeater, Blue-faced	Entomyzon cyanotis
Honeyeater, White-plumed	Lichenostomus penicillatus
Ibis, Australian White	Threskiornis molucca
Ibis, Straw-necked	Threskiornis spinicollis
Kite, Black	Milvus migrans
Kite, Whistling	Haliastur sphenurus
Magpie, Australian	Cracticus tibicen
Magpie-lark	Grallina cyanoleuca
Miner, Noisy	Manorina melanocephala
Native-hen, Black-tailed	Tribonyx ventralis
Parrot, Red-rumped	Psephotus haematonotus
Pelican, Australian	Pelecanus conspicillatus
Pigeon, Crested	Ocyphaps lophotes

- Pipit, Australasian Raven, Little Reed-warbler, Australian Rosella, Eastern Shelduck, Australian Starling, Common Swallow, Welcome Tern, Whiskered Willie Wagtail Woodswallow, White-breasted
- Anthus novaeseelandiae Corvus mellori Acrocephalus australis Platycercus eximius Tadorna tadornoides Sturnus vulgaris Hirundo neoxena Chlidonias hybrida Rhipidura leucophrys Artamus leucorynchus

Lake Cullen 21.10.2019

Coot, Eurasian	Fulica atra
Cormorant, Little Black	Phalacrocorax sulcirostris
Grebe, Hoary-headed	Poliocephalus poliocephalus
Hardhead	Aythya australis
Lapwing, Masked	Vanellus miles
Pelican, Australian	Pelecanus conspicillatus
Plover, Red-capped	Charadrius ruficapillus
Sandpiper, Sharp-tailed	Calidris acuminata
Shelduck, Australian	Tadorna tadornoides
Stilt, Black-winged	Himantopus himantopus
Swan, Black	Cygnus atratus
Teal, Grey	Anas gracilis
Tern, Whiskered	Chlidonias hybrida

Lake Tutchewop, Lake William & Mystic Park Bushland Reserve 21.10.2019

Kite, Black	Milvus migrans
Bronze-cuckoo, Horsfield's	Chalcites basalis
Butcherbird, Pied	Cracticus nigrogularis
Chat, White-fronted	Epthianura albifrons
Cuckoo-shrike, Black-faced	Coracina novaehollandiae
Fairy-wren, Superb	Malurus cyaneus
Fairy-wren, White-winged	Malurus leucopterus
Galah	Eolophus roseicapillus
Honeyeater, Singing	Lichenostomus virescens
Martin, Fairy	Petrochelidon ariel
Pardalote, Striated	Pardalotus striatus
Starling, Common	Sturnus vulgaris
Thornbill, Chestnut-rumped	Acanthiza uropygialis
Triller, White-winged	Lalage sueurii

APPENDIX III – Plant list for Moondarra State Park excursion 23.11.2019

Family	Botanical name	Common name
Mosses		
Thuidiaceae	Thuidiopsis sparsa	Moss
Ferns		
Cyatheaceae	Cyathea australis	Rough Treefern
Dennstaedtiaceae	Pteridium esculentum	Austral Bracken
Dicksoniaceae	Calochleana dubia	Common Ground-fern
Dryopteridaceae	Polystichum proliferum	Mother Shield-fern
Gleicheniaceae	Gleichenia dicarpa	Pouched Coral-fern
Lindsaeaceae	Lindsaea linearis	Screw Fern
Pteridaceae	Adiantum aethiopicum	Maidenhair Fern
Monocotyledons		
Asparagaceae	Lomandra filiformis subsp. coriacea	Wattle Mat-rush
Asparagaceae	Lomandra longifolia subsp. longifolia	Spiny-headed Mat-rush
Asparagaceae	Sowerbaea juncea	Rush Lily
Asparagaceae	Thysanotus tuberosus	Common Fringe-lily
Asphodelaceae	Caesia parviflora	Pale Grass-lily
Asphodelaceae	Dianella revoluta	Black-anther Flax-lily
Asphodelaceae	Dianella tasmanica	Tasman Flax-lily
Asphodelaceae	Xanthorrhoea minor	Small Grass-tree
Colchicaceae	Burchardia umbellata	Milkmaids
Cyperaceae	Gahnia radula	Thatch Saw-sedge
Cyperaceae	Lepidosperma elatius	Tall Sword-sedge
Iridaceae	Patersonia fragilis	Short Purple-flag
Iridaceae	Sisyrinchium micranthum*	Striped Rush-leaf
Orchidaceae	Calochilus robertsonii	Purplish Beard-orchid
Orchidaceae	Microtis arenaria	Sand Onion-orchid
Poaceae	Anthoxanthum odoratum*	Sweet Vernal-grass
Poaceae	Briza minor*	Shivery Grass
Poaceae	Poa sp.	Tussock-grass
Poaceae	Tetrarrhena juncea	Forest Wire-grass
Dicotyledons		
Apiaceae	Centella cordifolia	Centella
Apiaceae	Xanthosia dissecta	Cut-leaf Xanthosia

Seninis Track, Seninis campground, and picnic area where Tyers River passes under Moe-Walhalla Rd.

Apocyanaceae	Vinca major*	Blue Periwinkle
Apocynaceae	Parsonsia brownii	Twining Silk-pod
Araliaceae	Hydrocotyle geraniifolia	Forest Pennywort
Araliaceae	Hydrocotyle hirta	Hairy Pennywort
Araliaceae	Hydrocotyle sibthorpioides	Shining Pennywort
Asteraceae	Bellis perennis*	Common Daisy
Asteraceae	Cassinia aculeata	Common Cassinia
Asteraceae	Cassinia longifolia	Shiny Cassinia
Asteraceae	Cassinia trinerva	Three-veined Cassinia
Asteraceae	Coronidium scorpioides	Curling Everlasting
Asteraceae	Craspedia variabilis	Common Billy-buttons
Asteraceae	Hypochaeris radicata*	Cat's-ear
Asteraceae	Lagenophora gracilis	Slender Lagenifera
Asteraceae	Leucanthemum vulgare*	Oxeye Daisy
Asteraceae	Olearia lirata	Snowy Daisy-bush
Asteraceae	Senecio hispidulus	Rough Fireweed
Asteraceae	Senecio minimus	Shrubby Fireweed
Asteraceae	Senecio phelleus	Narrow Groundsel
Asteraceae	Taraxacum officinale*	Dandelion
Bignoniaceae	Pandorea pandorana	Wonga Vine
Boraginaceae	Cynoglossum suaveolens	Sweet Hound's-tongue
Campanulaceae	Wahlenbergia sp.	Bluebell
Caryophyllaceae	Stellaria flaccida	Forest Starwort
Cunoniaceae	Bauera rubioides	Wiry Bauera
Droseraceae	Drosera auriculata	Tall Sundew
Ericaceae	Acrotriche prostrata	Trailing Groundberry
Ericaceae	Acrotriche serrulata	Honey Pots
Ericaceae	Epacris impressa	Common Heath
Fabaceae	Acacia dealbata	Silver Wattle
Fabaceae	Acacia melanoxylon	Blackwood
Fabaceae	Acacia mucronata	Narrow-leaf Wattle
Fabaceae	Acacia verticillata subsp. verticillata	Prickly Moses
Fabaceae	Bossiaea prostrata	Creeping Bossiaea
Fabaceae	Dillwynia glaberrima	Smooth Parrot-pea
Fabaceae	Dillwynia sericea	Showy Parrot-pea
Fabaceae	Gompholobium huegelii	Common Wedge-pea
Fabaceae	Ornithopus pinnatus*	Sand Bird's-foot
Fabaceae	Pultenaea forsythiana	Prickly Bush-pea
Fabaceae	Pultenaea gunnii	Golden Bush-pea
Fabaceae	Sphaerolobium minus	Eastern Globe-pea
Fabaceae	Vicia hirsuta*	Tiny Vetch
Fabaceae	Vicia sativa subsp. nigra*	Common Vetch

Gentianaceae	Centaurium erythraea*	Common Centaury
Geraniaceae	Geranium sp.	Geranium
Goodeniaceae	Dampiera stricta	Blue Dampiera
Goodeniaceae	Goodenia lanata	Trailing Goodenia
Goodeniaceae	Goodenia ovata	Hop Goodenia
Haloragaceae	Gonocarpus humilis	Shade Raspwort
Haloragaceae	Gonocarpus tetragynus	Common Raspwort
Hypericaceae	Hypericum androsaemum*	Tutsan
Hypericaceae	Hypericum gramineum	Little St. John's Wort
Hypericaceae	Hypericum japonicum	Matted St. John's Wort
Lamiaceae	Prostanthera lasianthos	Christmas Bush
Lauraceae	Cassytha pubescens	Downy Dodder-laurel
Monimiaceae	Hedycarya angustifolia	Austral Mulberry
Myrsinaceae	Myrsine howittiana	Muttonwood
Myrtaceae	Eucalyptus angophoroides	Apple Box
Myrtaceae	Eucalyptus consideniana	Yertchuk
Myrtaceae	Eucalyptus cypellocarpa	Mountain Grey-gum
Myrtaceae	Eucalyptus dives	Broad-leafed Peppermint
Myrtaceae	Eucalyptus globoidea	White Stringybark
Myrtaceae	Eucalyptus obliqua	Messmate
Myrtaceae	Eucalyptus radiata	Narrow-leaf Peppermint
Myrtaceae	Eucalyptus viminalis subsp. viminalis	Manna Gum
Myrtaceae	Kunzea ericoides subsp. agg.	Burgan
Myrtaceae	Leptospermum continentale	Prickly Tea-tree
Myrtaceae	Leptospermum grandifolium	Myrtle Tea-tree
Myrtaceae	Melaleuca squarrosa	Scented Paperbark
Phyllanthaceae	Poranthera microphylla	Small Poranthera
Pittosporaceae	Billardiera macrantha	Purple Apple-berry
Pittosporaceae	Bursaria spinosa var spinosa	Sweet Bursaria
Pittosporaceae	Rhytidosporum procumbens	White Marianth
Plantaginaceae	Plantago lanceolata*	Ribwort
Proteaceae	Banksia marginata	Silver Banksia
Proteaceae	Banksia spinulosa	Hairpin Banksia
Proteaceae	Hakea nodosa	Yellow Hakea
Proteaceae	Hakea teretifolia	Dagger Hakea
Proteaceae	Hakea ulicina	Furze Hakea
Proteaceae	Lomatia myricoides	River Lomatia
Ranunculaceae	Clematis aristata	Australian Clematis
Rhamnaceae	Pomaderris aspera	Hazel Pomaderris
Rosaceae	Acaena novae-zelandiae	Bidgee-widgee
Rosaceae	Rubus sp*	Blackberry
Rubiaceae	Coprosma quadrifida	Prickly Currant-bush

Rubiaceae	Galium aparine*	Cleavers
Rutaceae	Boronia nana var. hyssopifolia	Dwarf Boronia
Rutaceae	Correa lawrenciana	Mountain Correa
Santalaceae	Exocarpos cupressiformis	Cherry Ballart
Santalaceae	Exocarpos strictus	Pale-fruit Ballart
Thymeliaceae	Pimelea axiflora	Bootlace Bush
Violaceae	Viola hederacea	Ivy-leaf Violet

*Introduced species