Newsletter 57
Spring 2022

FRIENDS OF WAITE CONSERVATION RESERVE Inc.

COMING EVENTS

Bioblitz
28-31st October
See Page 12
for details

Bushcare Days
See Page 4
for details

Summer Solstice Celebration
7:30pm
Wednesday
21st December
52 Furness Ave
Edwardstown
BYO BBQ
RSVP to Clint
clint.garrett@ozemail.com.au

THE UNIVERSITY of ADELAIDE

President's message

Those who attended the May AGM will have experienced the infectious enthusiasm of speaker Andrew Fairney. Andrew is founder and CEO of *Seeding Natives Inc.*, a not-for-profit company that specialises in restoration and management of native grasslands.

Seeding Natives typically uses purpose-built machinery to sow native pastures in a single pass. They work from the ground up, adding larger shrubs and trees later as required, to recreate diverse ecosystems. Andrew illustrated his talk with lots of photos showing incredible transformations from weedy wastelands to diverse, weed-free native grasslands.

Like many of you I was inspired by the possibility of letting Andrew loose in some our weediest bits to weave his grassy magic. Stone Reserve springs to mind. Originally grassy woodland, much of it was cleared, grazed and invaded by olives.

Andrew and Nicola Barnes returned in August for a site inspection to discuss the feasibility of direct seeding to short circuit what otherwise will be an extremely slow road to recovery if left to natural processes. But there will be challenges. It would require weed control for 2-3 years beforehand, large quantities of native seed and exclusion of grazing herbivores. This would be a serious long term project costing serious money.

But there might also be some serious spinoffs. Like establishing a seed orchard to produce the required seed, which could ultimately be used to support revegetation elsewhere in the reserve. Or upgrading the fences to exclude deer which would assist weed control and re-vegetation on a bigger scale. I'm interested to hear from anyone who would like to contribute to what might be a project worthy of marking the centenary of Waite due in 2024.

Peter Bird

L-R: Nicola Barnes, Meg Robertson, Andrew Fairney, Grant Joseph

Eaten/Beaten To Death: Oh Deer!

The vegetation of the Reserve is currently being steadily destroyed by Fallow Deer. We have an increasing population of deer in the Reserve. Walkers report seeing them far more often now than in the past. Groups of 3 – 17 at a time are now being seen on an almost daily basis.

Fallow Deer are native to Turkey, Greece and adjacent areas. They are well adapted to living in the Adelaide Hills. Yes they are pretty, but they are also very, very damaging.

Deer:

- Destroy/damage native vegetation
- Seriously impact re-vegetation work
- Spread olives (a transformative weed)

These photographs are evidence of deer impacts on the Reserve.

Rough barked species such as this Native Cherry are favoured rubbing species.

Male deer have scent glands on their forehead and below the eyes. They also rub to remove velvet from growing antlers. Rubbing releases scent and removes velvet, but in the process the rubbing can completely ring bark and kill the plant. There are many examples of this to be seen in the Reserve. The result of this damage is that the plant dies.

Other species which are heavily impacted by these behaviours are Drooping Sheoak and Golden Wattle.

Thrashing can completely destroy a plant. This is part of territorial behaviour by male deer.

Deer are browsers. They eat both grasses and shrubs. TAFE students and our volunteers planted 278 plants on 19th June. 3 weeks later 70-80% of that work had been eaten or pulled out of the ground by deer.

Deer vomit up 200-400 olive pits at a time. Peter Bird's research estimates that deer bring 85,000 pits per hectare to us, thereby making our efforts to control olives so much harder.

Clint Garrett

A Gem of the bush—the Spotted Pardalote

There are few more evocative sounds in the Australian bush than the two-note ringing bell call of the tiny Spotted Pardalote *Pardalotus punctatus* which carries for many hundreds of metres on still days. At about 10cm it is one of the smallest Australian birds, but what it lacks in size it makes up for in appearance. The male is brighter than the female with a bright yellow throat and white spots on the black crown, where the female has yellow spotting. Both have spots and scalloping on the upper body, hence the specific name *punctatus*, and a red rump which is prominent in flight.

Male Spotted Pardalote
Photo: Trevor Cox

Spotted Pardalotes occur widely across southern South Australia, with the sub-species *xanthopyge* (once a full species, the Yellow-rumped Pardalote) being found in mallee country.

Spotted Pardalotes are found in woodlands and forests and nearly always in eucalypts of many species. Their tiny stubby bills are well -adapted for gleaning lerp and psyllid larvae from eucalypt leaves and they also take manna and spiders (Higgins and Peter 2002).

Spotted Pardalotes usually nest in an enlarged chamber at the end of an underground tunnel, usually in the bank of a creek or roadside cutting, but also on sloping or flat ground where the soil is sandy or has been recently disturbed. Clutch size ranges from two to five, with four being the norm (Higgins and Peter 2002).

These tiny woodland birds are generally considered to be sedentary, with some autumn-winter dispersal or migration, and they can appear in numbers in an area for a few months and then disappear until the next incursion. They occasionally occur with the closely-related and more common Striated Pardalote *P. striatus* and Silvereyes *Zosterops lateralis* in mixed feeding flocks during the cooler months. They are considered uncommon in the Waite Conservation Reserve, according to the list of birds in the Waite Conservation Reserve maintained by President Peter Bird and last updated July 2022. A recent sighting in July by Clint Garrett in the Reserve prompted this article.

Spotted Pardalotes do occur in suburban gardens in Adelaide and appear to be sighted more frequently over the past few winters in our garden and along the River Torrens in Gilberton, with three birds being seen in June 2018. They are known to drink from troughs, dams and reservoirs in rural areas, so it is likely that they will use bird baths in gardens, particularly during very hot weather.

Penny Paton

Reference

Higgins, P.J. and Peter, J.M. (Eds) 2002. *Handbook of Australian, New Zealand and Antarctic Birds. Volume 6 Pardalotes to Shrike-thrushes.* Oxford University Press, Melbourne.

Bushcare Days

Tree planting has occupied most of the last couple of months of effort, including a couple of midweek sessions. Lately we've dragged up cut olive branches for burning and started on digging weed bulbs. From here we continue to chase our winter/ spring weeds including bulb irises of various persuasions, African daisy, Bone-seed, and later, Perennial Veldt Grass. Along the way we'll revisit our planted trees for a spot of weeding and collection of tree guards.

Bushcare days (formerly Working Bees) are held on the ***first Saturday and third Sunday*** of each month. We meet at 9.00am and finish at noon for lunch.

Add these upcoming dates to your calendar. I'll send a reminder with details before each. Assume we meet up top at Springwood Park (first map) until and including 5 November, and at Gate 82 thereafter (second map) unless advised otherwise.

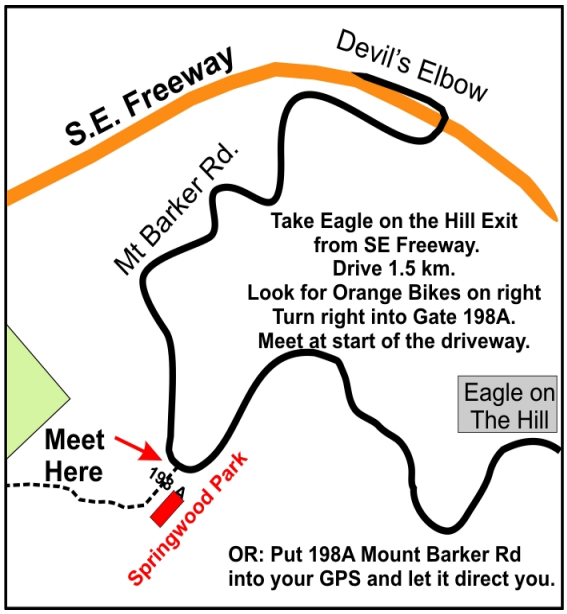
September
Saturday 3rd Sunday 18th

October
Saturday 1st Sunday 16th

November
Saturday 5th Sunday 20th

December
Saturday 3rd

Peter Bird



There are a lot of weeds to be dug out in Spring The more helpers we have, the better.
Photo: Clint Garrett

Record Tree Planting

Another year of planting is pretty much done with good winter rains helping to water them in and keep soil moisture levels high. We ended up growing around 1500 tubestock of a record 90 species. Not a bad return from 110 species either seeded or propagated from cuttings or division. Among them were the 24 species below not previously grown.

We were assisted again with seeding and planting by Conservation & Land Management students from Urrbrae TAFE and with cutting and division by Mark Ellis from City of Burnside. Mark also supplied us with Yam Daisy, Small-leaf Raspwort and Matted Bushpea plants sourced from nearby populations to increase genetic diversity of the very small populations in the reserve.

Our efforts were somewhat soured by an estimated 25 feral deer ± kangaroos destroying some newly-planted tube-stock. More than 70 percent of the Stone Reserve plantings by Rachel Eckermann's TAFE students were killed in the first few weeks. Later plantings fared better when covered with more spiky olive prunings. Small under-storey plants also survived well when not advertised by their usual bamboo stake.

Not all species were planted in the reserve. Several species of lily, matt-rushes and Blue Devil were carried over until next year to allow them to bulk up. Some will be potted on in the interim. Several grass species will also be planted soon in the *Graminetum* behind the main Waite building on campus. The *Graminetum* is a series of irrigated garden beds which host a range of native grasses and where hopefully we can harvest seed for future re-vegetation programs. Anyone interested in helping plant and maintain these is most welcome.

Peter Bird

Acaena echinata	Sheep's Burr
Austrostipa flavescens	Coast Spear-grass
Austrostipa mollis	Soft Spear-grass
Austrostipa nodosa	Tall Spear-grass
Austrostipa scabra	Rough Spear-grass
Bulbine bulbosa	Bulbine Lily
Chamaescilla corymbosa	Blue Squill
Crassula colligata	Joined Crassula
Cyperus vaginatus	Stiff Flat-sedge
Dianella longifolia	Pale Flax-lily
Glycine rubiginosa	Twining Glycine
Gonocarpus elatus	Hill Raspwort
Gonocarpus tetragynus	Small-leaf Raspwort
Hardenbergia violacea	Native Violet
Hydrocotyl laxiflora	Stinking Pennywort
Leptorhynchos squamatus	Scaly Buttons
Lomandra densifolia	Soft Tussock Mat-rush
Lomandra micrantha	Small-flower Mat-rush
Microseris lanceolata	Yam Daisy
Neurachne alopecuroidea	Fox-tail Mulga-grass
Plantago gaudichaudii	Narrow-leaf Plantain
Poa crassicaudex	Thick-stem Tussock-grass
Rytidosperma auriculatum	Lobed Wallaby-grass
Rytidosperma erianthum	Hill Wallaby-grass

Blue Squill, one of 24 species new to our revegetation program.

Know Your Fungus

"Fungi make worlds they also unmake them." Sheldrake M. 2020

The Grey Box Grassy Woodland at the *Waite Conservation Reserve* is a habitat for many fungi species. Fruiting bodies can be spotted on the sides of well-formed walking tracks, or off the tracks on the woodland floor, among vascular plants and moss, on standing living and dead trees, bare soil, fallen logs, leaf litter, dung etc. They vary in their size, colour, shape, texture, and smell which makes it easy to spot or completely miss them. As we walk, beneath the soil a huge network of entangled fungal threads (hyphae) and plant roots communicate with each other and form intimate associations. They serve the ecosystem through mycorrhizal connections or/and removal of dead organic matter.

Certain groups of fungi form symbiotic, mutually beneficial associations with the roots of host plants which are called mycorrhizae or 'fungus root'. In these associations, fungal threads are attached to the tree root and the root surface area is increased which enhances the tree's ability to take up water and nutrients (nitrogen, phosphorus, potassium and calcium). In return, the fungus receives carbon compounds such as sugars from the tree as a result of photosynthesis.

Mycorrhizal fungi such as various native *Cortinarius* and some *Russula* species can be seen along the Sheoak walking track emerging from soil covered by leaf litter and grass. They are partners of many *Eucalyptus* species and other native trees and shrubs. *Cortinarius* species (web-cap) vary from small nondescript brown species to large and colourful ones such as *C. erythraeus* (Fig. 1A, B). They have a cortina (veil) that covers the gills like a spider's web, thus the name, meaning curtained. The cortina often disappears with age or may remain as wispy fibrils on the stem (Fig. 1B).

Russula species are characterized by fleshy, large (≤ 10cm) and colourful fruit bodies (Fig. 1C, D). They have a brittle or granular texture and their stems snap like chalk when you try to bend them. This is a due to the groups of round cells within the fibrous structure of their cap and stem tissue. Their 'snapability' is an important diagnostic feature. The colour of the caps goes through extreme colour changes in the field, partly due to weathering of the pigments, and specimens with pink, purple and red caps easily become yellow, grey, brown and combinations of these (Fig. 1C).

Fig 1. *Cortinarius erythraeus* (A, B) iNaturalist credit: sarinozi

Fig 1 Russula sp. (C, D). iNaturalist credit: sarinozi

Know Your Fungus (2)

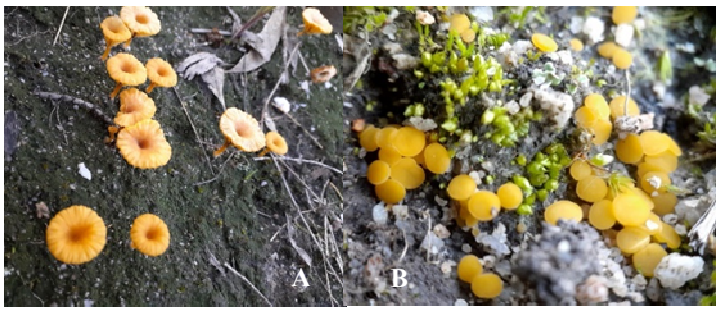


Fig. 3. A *Lichenomphalia chromacea*,
B *Phaeohelotium baileyanum* . iNaturalist credit: peter-lang.

A fungus (mycobiont) can also form a beneficial symbiosis with an alga or cyanobacterium (photobiont) which forms a composite organism called a lichen. In this partnership, an alga provides the fungus with food, and the alga receives in return the more protective micro-environment that is created by the body of a lichen. *Lichenomphalia chromacea* ('yellow navel') (Fig. 3A) is an example of a lichenised fungus that colonises bare ground, helping to reduce erosion. The greenish mat on the surface of ground is created by *L. chromacea* filamentous threads (hyphae) and the algal cells (*Coccomyxa*). This little fungus (≤ 3cm tall) grows often in large groups, has bright yellow to dull yellow-orange convex cap depressed in the centre (young) or a funnel shape cap in mature samples. Gills are wide-spaced and extend partly down the stem.

Occasionally *L. chromacea* shares the same substrate with 'yellow earth buttons' or *Phaeohelotium baileyanum* (Fig. 3B). Yellow to orange soft opaque discs (approx. 1cm diam.) with a short stalk grow out of bare ground in clusters and once they reach a full size, the margin becomes undulating. Although common on bare ground, it is a mycorrhizal fungus associated with *Eucalyptus globulus* and sometimes also the moss species it is growing amongst. It is worth looking for these yellow discs on soil around *Eucalyptus* trees and recording them.

A vast number of fungi at the *Waite Conservation Reserve* are saprophytic and grow on wood, litter (twigs, leaves) and other organic material. These fungi are decomposers or 'rotters'. They decompose dead organic matter by breaking down lignin, cellulose and chitin and unlock the carbon and other elements in the soil.

Once carbon is returned to the soil, it is stored in lignin, cellulose and chitin again by the process of photosynthesis by plants with the help from mycorrhizal fungi.

Fig 4A Pholiota communis

Decomposers such as *Pholiota communis* (Fig. 4A) and *Coltricia australica* (Fig. 4B, C) occur on the ground, and *Hexagonia vesparia* (Fig. 3B) inhabits an old dead *Allocasuarina verticillata* trunk, c. 2 m above ground. *Pholiota* species usually live on wood (including buried wood), in forest litter and on the ground. They have scaly viscid caps and partially scaly stem. A veil covering the gills is always present in the young fruit bodies and thus, they may resemble *Cortinarius* species. A veil remains visible as wisps, scales or a ring in the mature fruit bodies (Fig. 3A). Their ring, scaly cap and growth on wood are important diagnostic features

Coltricia australica is a small, tough and woody pored fungus with central stem. A circular, flattish cap (a few mm thick) has a slight central depression, fine velvety fibres radiating from the centre and is coloured in shades of brown in concentric bands (Fig. 3B). The underside of the cap has abundant pores instead of gills (Fig. 3C). A few fruit bodies can often merge and grow together, and because of that twigs and grass blades are embedded in the caps.

Fig. 4 B &C *Colatricia australica*

Know Your Fungus (3)

One of the gems at the Waite grassy woodland is *Hexagonia vesparia*, a hoof shaped fungus broadly attached to an old dead tree (below). The fruit bodies of this species are woody with hexagonal & radially elongated pores which give the fungus a wasp nest appearance.

Hexagonia vesparia (IiNaturalist credit peter-lang

The woodland floor at the *Waite Conservation Reserve* is rich, colourful, exciting, and surprising habitat for all fungi enthusiasts. Some of them are acknowledged in this text and the others (meltroy, katehall, luckyrob) are thanked for their great contribution of records on **iNaturalist** during a fungi foray on July 23, 2022 by the FWCR. It is appreciated if people continue with photographing and submitting records to **iNaturalist Fungimap Australia project**. These records will contribute to mapping of fungi in Australia and a better understanding of their distribution and population dynamics over time. Consequently, we will develop a better understanding of fungi in general. Happy spotting and recording of the fungal gems of the *Waite Conservation Reserve*. **iNaturalist Fungimap Australia** project is looking forward to your observations.

Tijana Petrovic

Teresa Lebel with a particularly large fungus from Quartz Hill.
Photo, Clint Garrett

Tijana demonstrating how to inspect the gills of a fungus using a small mirror
Photo: Clint Garrett

Tips for photographing with Apple iPhone:

Privacy settings, **turn on** Location; GPS Lat/Long is important as well as current date and time.

Take photos of

surfaces above and below – top of the cap with warts or slime, and underside of the cap – gills, pores, spines, partial/universal veil;

side profile showing stem with/without volva, ring and thickness of the cap;

range of maturity – from emerging to mature samples with fully developed features;

substrate and general habitat – what they are growing on (soil, log, burnt wood), vegetation community (*Eucalyptus microcarpa* grassy woodland) and habitat such as the Quartz Hill Stone Quarry.

New Jewel Beetle after 100 years

In late spring last year an exciting new addition was made to the jewel beetle fauna of the Reserve, taking the total number of species there of that family (Buprestidae) to 18.

Pupa of *Hypocisseis ornata* in broken open mistletoe stem found in WCR
Photo: Peter Lang

The new beetle, *Hypocisseis ornata*, had not been recorded in SA since it was first described nearly 100 years ago.

Then in October I came across degraded dead remains of two specimens in stems of a dead mistletoe near Milang on Fleurieu Peninsula. That find prompted me to look in mistletoe stems closer to home, and at the end of the month I finally found two live pupae within the stems of a Box Mistletoe (*Amyema miquelii*) from the WCR. These were both reared to adults.

Despite much searching of foliage I was unable to find emerged adults in the wild, but judging from the emergence times of the two I reared, they are likely to be active around Christmas. The easiest way to detect their presence, however, is by breaking stems of dead mistletoes and finding the distinctive tunnels made by their larvae.

Other insects, including Longicorn beetles, also bore in mistletoe wood, but the tunnels of *Hypocisseis ornata* are recognisable by being relatively shallow and wide, and mostly filled with a very fine compacted wood frass. In stem cross sections they often appear as somewhat concentric arcs.

Given the abundance of its mistletoe host plant and a smattering of widely distributed records, *H. ornata* is probably a quite common species, just overlooked.

For more information and to see more images, visit: http://syzygium.xyz/buprestidae/taxonomy.php and click on the genus and species names.

Peter Lang

Dorsal, ventral and lateral views of Hypocisseis ornata
Photos: Peter Lang

Eva's table

Walkers on the Sheoak Loop will have seen that a new table and seat have been installed on the trail. They are a gift to the Reserve from Eva O'Leary (Kreminski) who is one of our regular walkers. The table has been sited on a pad that Clint put in when he was building the Sheoak Loop. There is a great view from the table down the Glen Osmond valley to the city beyond.

Eva's family met at the table in August to commemorate the installation of the table.

A table with a view thanks to a generous gift from Eva O'Leary (Kreminski.)

Bill and Graeme from Innovation Engineering, Jeff Glasson and Clint did the set-up work to get the table in place. On the previous day, Jeff and Clint had dug through a lot of rock by using the time honoured method of one person holding a small crowbar while the other hit it with a sledgehammer.

More Walkers

April is the official beginning of the walking season in SA and continues until October. The number of walkers using the trails in the Reserve continues to increase.

The table below shows the total number of walkers passing the counters at Gates 61 and 82 between April and July 2021 and 2022. The increase in numbers is in the order of 45%. These figures are an under-count as there are no counters at the Carrick Hill entrances.

	2021	2022
April	3037	4555
May	2894	3378
June	2968	3868
July	3087	4563
Total	**11986**	**16364**

Counts at the crossroads of the Waite and Sheaok Loops are useful for understanding how much use our tracks get used as well as gathering the postcode and sex of users.

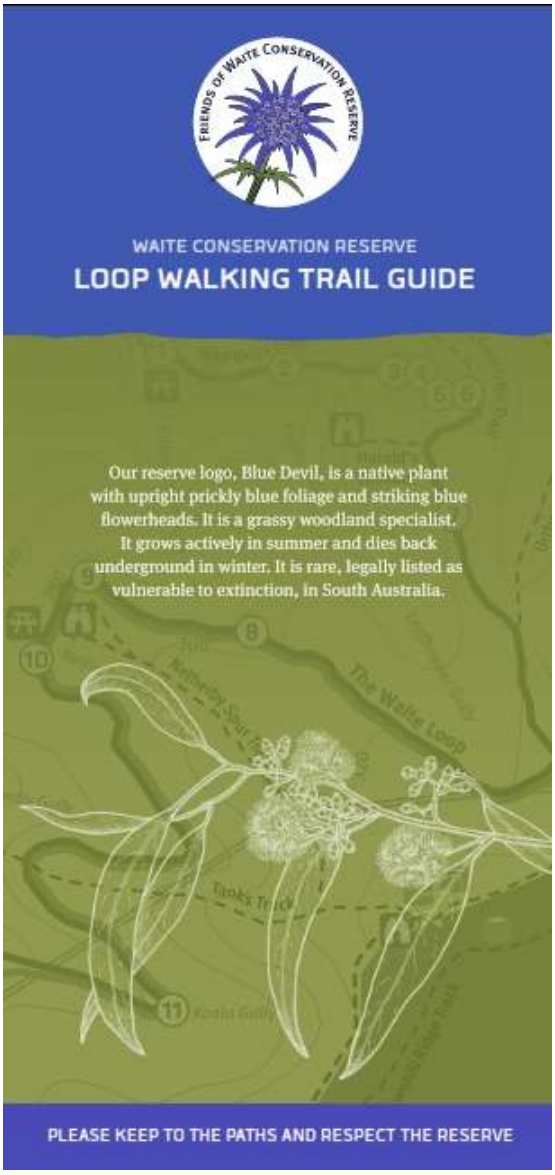
The area that the Reserve draws visitors from is extensive, stretching from Elizabeth in the north to Willunga, in the south. Plus we have visitors from country and interstate who are introduced to Waite by their city cousins.

It is heartening to see the number of families with children walking on the weekends. The swing at Netherby Lookout was a powerful incentive for them to make the walk.

Women are over-whelmingly the majority of our walkers. Just over half of our walkers on weekends and more than 2 to 1 on week-days. I suspect that if postcode data was collected on weekdays, it would show that many of these walkers come from our closest postcodes.

Clint Garrett

New Loop Guide



We now have a new version of the Waite Loop Trail Guide. The previous version was reprinted in 2014 and the stock of 5000 copies ran out in early 2021.

A Community Grant of $1000 from City of Mitcham Council, and $500 from Helen Winefield's donation to the Friends group helped to cover part of the $5400 cost,. The bulk of the cost was paid by the University of Adelaide. This was enough for a new print run of 5000 copies.

A significant part of the cost was the re-design work done by Icarus Design to include an updated A4 fold out map, in place of the double DL sized map in the old version. The new map now shows all of the Reserve not just the Loop Trail. Marian McDuie provided the base map, then Icarus and Clint worked through 14 versions to get the new map as close to perfect as possible.

The new edition now has a dedication to Harold Woolhouse and a photo of him, recognizing his important role in ensuring the land of the Reserve was dedicated to Conservation and protected by Heritage agreements.

There have been slight changes to the text for two of the stations on the Loop, but the bulk of the guide remains as it was. Information about the Sheoak Loop Trail has been added, as this trail did not exist when the original guide was written.

The new guides have been welcomed by the public. Look for them at the entries to the Reserve.

Re-furbished Information Boxes Too!

Before and after

Over the years, the information boxes at Gates 61, 82 and 85 have been used as notice boards in lieu of an actual notice board. As notices were removed, the residue of glue has attracted dust and then hardened into a brown mess.

The boxes have been taken offsite, the glue residue has been removed and then the boxes have been sanded and given two coats of epoxy paint to protect them for years to come. The hinge on the Gate 85 box had to be replaced as it had rusted significantly and was not allowing the lid to hinge properly.

Clint Garrett

Great Waite Bio blitz

The *Great Southern BioBlitz* is an intensive biological survey of all living species carried out by citizen scientists each spring. Participants record their observations & images on *iNaturalist*, a free citizen science App.

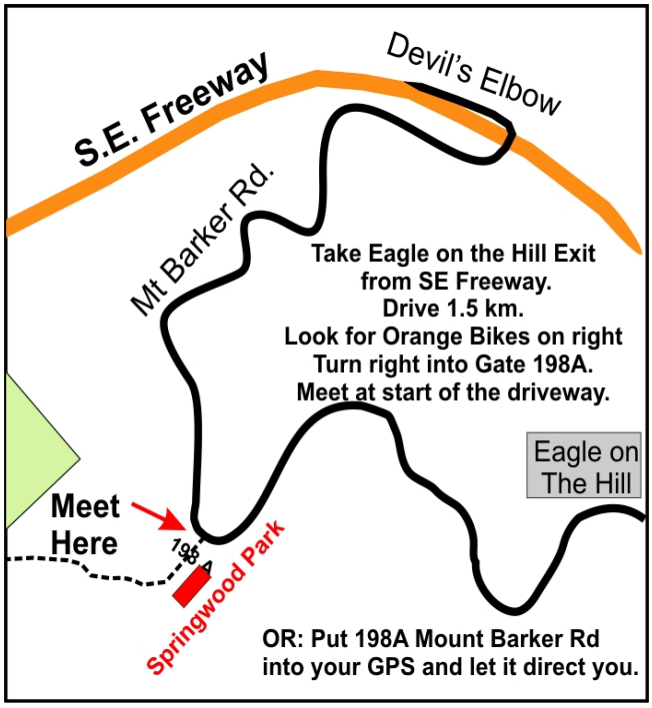
The event has been embraced by many individuals & groups over the past two years. This year, help us make Waite Conservation Reserve a biodiversity hotspot by joining us Friday 28th—Monday 31st October for our own chapter, the **GREAT WAITE BIOBLITZ**.

Visit the Reserve anytime over the four days and upload your photos of plants and animals onto the Waite Conservation Reserve Project. Or you can join one or more of the sessions below.

Sat 28 Oct 9am-12noon: Wildflower Wander

Sat 28 Oct 6pm-9pm: Spotlight Saunter/ moth survey

Sun 29 Oct 9am-12noon: Animal Crawl
Meet at 198A Mt Barker Road for any of these events



We will try to record as many species as possible over the Blitz by encouraging participants to visit different parts of the Reserve and record different taxonomic groups.

INaturalist is very easy to use. Simply take a photograph with your phone then upload the image. See the short "How to" videos: https://www.inaturalist.org/pages/videos+tutorials.

You don't even need to know the species. Others can ID your images online. There will be opportunities for training before the Bioblitz if needed.

ALL WELCOME

Please RSVP to:

info@friendsofwaitereserve.org.au

by 24th October 2022

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