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Friends of Sturt Gorge Newsletter

No. 35: July 2016

This edition: New web map; Inch ants; Enid Robertson; Rhamnus; Weather; North side revegetation; Spot the difference; Birdlife; Magpie Creek ruins; Membership renewals; Maps.

Friends of Sturt Gorge Web Map: a new tool to help our mapping efforts

Many Friends of Parks groups have found that surveying and mapping the plants and animals in each park has been a significant part of their work for a long time.

Now we have a new tool to help our mapping efforts, the *Friends of Sturt Gorge Web Map*, and it is putting us at the forefront of conservation mapping technology.

The web map opens in your computer's / iPad's / tablet's internet browser. Like Google Maps, it lets you pan and zoom around aerial imagery of the Gorge. However, there's the additional capacity for you to turn on and off different 'map layers' which are relevant to our work in the park.

For example, we can now see on a map the location of :

- Working bees
- 'Cleared' areas
- 'To do' jobs
- Plants of conservation significance
- Animal sightings

The web map lets you edit these map layers by adding new features or editing the existing ones.

The web map also features an iPad app that lets you collect data in the field using the inbuilt GPS of your mobile device (smart phone, iPad, etc).

Rick Coyte has already found this feature very useful in mapping plants of conservation significance in the Gorge. On site, he can record exactly where the plants are located. Rick has also mapped the location of several recent working bees with his iPad by walking the working bee boundary and recording with his iPad's GPS.

Once we've resolved a small technical problem with the computer facilities at Bellevue Heights Primary School we expect to have the web map available at future monthly meetings

so that everyone can see it and have the opportunity to provide feedback and input.

The Department of Environment, Water and Natural Resource (DEWNR) has provided a \$180 grant to buy the web server for a year. This is intended as a trial to see how the system works, and to see whether it could be deployed to other Friends of Parks groups.

David Phillips

Inch ant (*Myrmecia* species)

These remarkable insects generally get a bad press on account of their aggressiveness, their painful (and potentially dangerous) sting and their forbidding appearance.

While these have to be admitted as a black mark from the human perspective, on the other hand the inch ant is an exemplary member of the *Formicidae* family.

There are 90 species of inch ants (bull ants if you're from the eastern States) and they're found across Australia in urban areas, forests, woodland and heath.

Myrmecia is one of the most primitive group of ants on earth, and shows significantly different behaviours from other ants. Adults feed on nectar and other plant juices, while animal prey is carried back to the nest for the ant larvae to feed on.



When you see an individual inch ant it will be on a foraging expedition. Watch its progress and eventually it will lead you back to the nest.

These ants have a powerful sting which deters most predators, but their larvae are often eaten by blind snakes and echidnas and a number of parasites infect both adults and brood.

Some species are known to be effective pollinators, although I'm not aware of this being a characteristic of inch ants in the Gorge.

All nests I've come across in the Gorge are much like the three examples I have in my own garden (see below). Nests are underground and have discreet, rather small entrances, often associated with a small mound of dirt. That said, the nests can extend several metres below the ground.

The ants have large compound eyes which give them excellent vision and, while they have distinctive long and slender mandibles (which look deadly from our perspective but are unlikely to cause any harm to something as large as a human), the dangerous part of their anatomy is their venom-loaded sting.



It's their superior vision which enables them to track and follow intruders from a distance of one metre. And as workers are solitary hunters and don't lead other workers to food (unlike the conga lines of small ants heading to food spills on your kitchen bench) it's likely that they rely on visual clues rather than pheromone markers to navigate around their territory.

Aggressive behaviour is a characteristic of most ant species and we should be aware that they've been on the planet far longer than recent arrivals such as mammals.

If we leave them alone to go about their business there's peaceful coexistence. Attack them or disturb their nest and they'll take on all-comers.

So if you're unobservant, careless or just unlucky you'll only become aware of an inch ant when it stings you. This is where those large, elegant mandibles come into the picture because they're what the ant uses to get a grip while it curls up its abdomen and gives you a sting from its tail end. Inch ant venom is similar to that of a bee sting, hence the acute pain,

subsequent inflammation / itchiness and, for a small number of individuals, an anaphylactic reaction. Unlike a bee - which usually leaves its sting in you with venom sac attached - the inch ant is able to deliver multiple stings. Ants have been around practically since life first evolved on dry land, exist in myriad species and uncountable numbers, spend their entire lives working, and do untold benefit for the ecosystem. To understand them is to appreciate them, especially the bigger examples.

There's a vast amount of more detailed information about *Myrmecia* at:

[https://en.wikipedia.org/wiki/Myrmecia_\(ant\)](https://en.wikipedia.org/wiki/Myrmecia_(ant))

Andrew Goldie

Enid Robertson

Enid Robertson's family have asked that I let conservation and botanical friends of Enid know that Enid Robertson died this past Sunday, 10 July 2016, succumbing to the effects of cancer. She was an excellent botanist, taxonomist, field naturalist, contributor of specimens to the Herbarium and a volunteer in botanical matters for many volunteer groups for decades. The depth and breadth of her commitment to nature conservation, management of native vegetation, and to community education was profound. She was a good woman and her botanical friends will miss her dearly. There will not be a funeral. A memorial will be held in a few weeks time.

Ann Prescott

Enid, our group's patron, was an amazing woman, inspiring and challenging us from the earliest years of the group to do the best possible bush care work we could achieve; sharing her botanical and bush care knowledge on walks and working bees in the Gorge, and in later years, collecting specimens for us to identify at meetings so that we didn't mix up the natives and the weeds. Although she wasn't able to attend meetings for the last few years, she always kept a keen interest in our work, and her contribution to the Friends of Sturt Gorge will be sorely missed.

Amy Blaylock

Plant profile

Buckthorn (*Rhamnus alaternus*) is an invasive woody weed found throughout the Gorge, particularly in creeks, gullies and damper areas.

The bad news is that it is hardy, evergreen, produces large amounts of berries which are palatable to birds and animals, can grow in rock crevices, through any native bush (however dense) or right alongside olives, and has a unique ability to survive hand-pulling (see below).

The good news is that it rarely grows much larger than a medium sized shrub, has relatively little trunk and branch structure relative to its leaf canopy, and is highly susceptible to glyphosate all year round.

A distinctive feature of the plant is that its trunk has two 90 degree turns: the first where the tap root emerges from the soil: and the second where a short distance later the main trunk heads straight up to the light.

Hand-pulling generally removes the top part of the plant, leaving behind the tap root and a horizontal section of stem which will generally continue growing in most weather conditions. Pulling out the tap root or digging it out causes more soil disturbance than is warranted, especially when the soil is dry.

Taking these characteristics into account my advice for best-practice weeding in high conservation areas is to avoid soil disturbance, cut everything (large, middling or small) close to the ground, apply glyphosate to the wound (use the “drill & fill” method for larger stumps), then cut and scatter the branches and foliage.

In a thicket of *Rhamnus*, such as around the base of a eucalyptus, this technique can be labour intensive but the reward comes a year later when there’s negligible regrowth and there are native flora growing in the abundant light where there was previously the dense *Rhamnus* canopy all year round.

Andrew Goldie

Weather in the Gorge

Happily, weather conditions in the Sturt Gorge over the past 6 months have been much closer to ‘normal’ than the previous six, which were extraordinarily warm and dry. The Craighburn Farm rain gauge (on the eastern fringe of the Gorge) had recorded 316 millimetres of rain to the end of June, which is slightly ahead of the average of 299 millimetres. A wet January and dry April have been the stand-out months.

It may not have felt like it lately, but the period from January to June has been warmer than normal overall, with maximum temperatures about 1⁰C higher than average. Monthly temperatures measured at the Weather Bureau’s observing site in Kent Town show that January, March and April were well above normal. February and June were both below average, but only just! Thankfully the warm anomaly is not as significant as it was in the latter months of 2015.

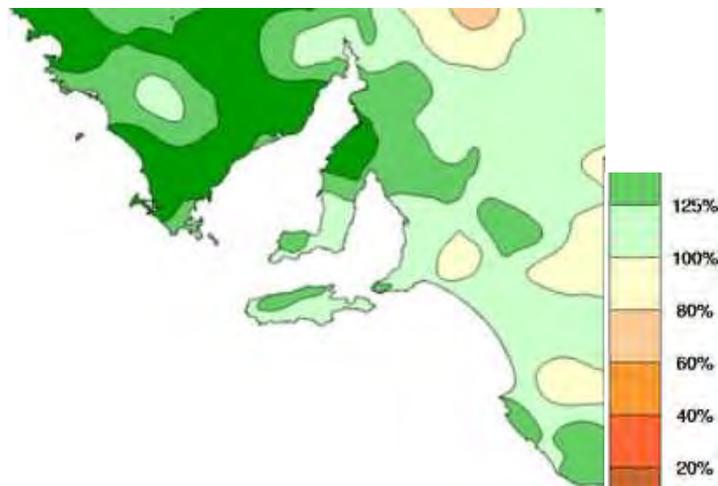
It’s good to see that the rainfall has replenished soil moisture in the Gorge, now being close to saturated in most parts, and with notable run-off into the creeks with each rain event. Some of the heavy rain events have produced some very high flows, as evidenced by some of the erosion and debris which has been collected in unusual places.

And if you thought it’s been windy of late, you’re right. Wind speed data show that May and June were considerably windier than normal – by about 20%. In walking the Gorge trails, the number of shrubs and trees damaged or brought down by the combination of strong winds and wet top soil is quite obvious. Monthly wind speed statistics from Adelaide Airport (for 3 pm) show that whilst January to April saw close to normal ‘windiness’, May and June were notably windier than average.

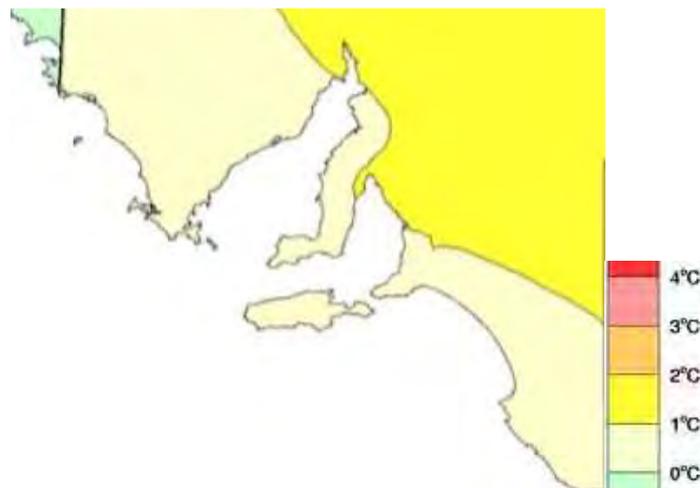
The table below compares the rainfall, temperatures and wind speed for the past 6 months, compared to average.

Month	Jan	Feb	Mar	Apr	May	Jun	Total
Rain (mm)	50.2	21.4	54.0	11.8	84.8	94.2	316.4
Average	24.7	22.4	33.7	51.5	76.3	90.0	298.5
Max Temp (°C)	31.2	29.3	28.6	24.8	19.8	16.0	24.9
Average	29.4	29.5	26.4	22.7	19.0	16.1	23.9
Wind Spd (km/h)	25	23	19	20	22	22	21.8
Average	23	22	21	19	18	17	20.0

The maps below show, for the past six months, the percentage of rain compared to normal, and the maximum temperature anomaly.



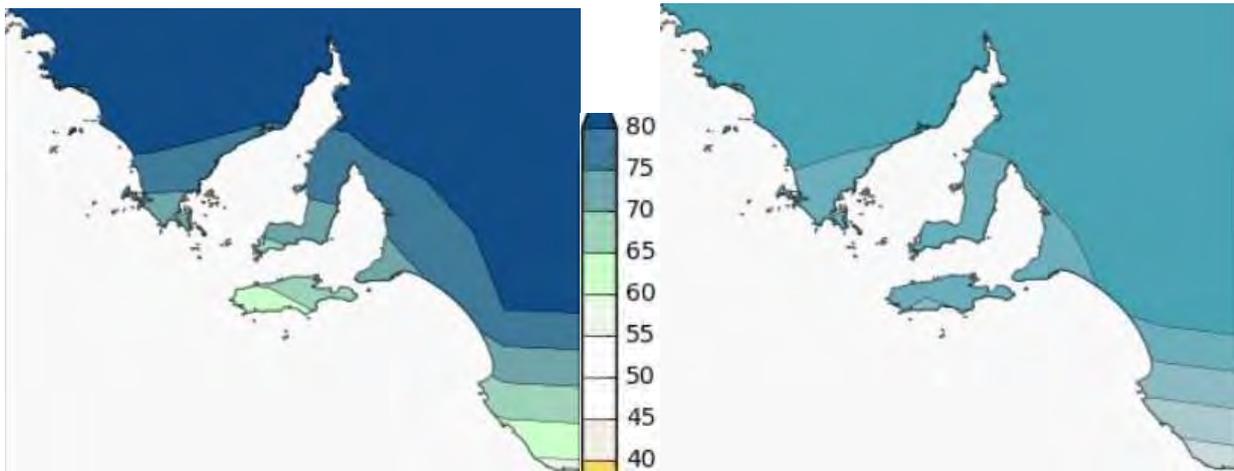
Above average rainfall in most parts for January to June



Slightly above average maximum temperatures for January to June

The longer term forecast issued by the Bureau for the July to September period suggests with some confidence that rainfall in the Adelaide area will continue to be above average, which would be welcome, given the sequence of relatively dry winters and springs we've had over recent years.

In regard to temperatures the prediction is for below average maxima, which is consistent with the expectation of further regular episodes of cloud, rain and cold air. It also suggests that the winter woollies might be needed for a while longer yet!



Above average rainfall most likely (75%) for July to September and a low chance (35%) of higher than normal maximum temperature for July to September

Since the winter season broke in late May there have been a number of interesting weather events. The early afternoon of 2nd June saw the development of cumulonimbus clouds in the region of the Sturt Gorge, with some clearly visible to the south.



Storm clouds (cumulonimbus) brewing south of Sturt Gorge on the afternoon of 2 June. Photo taken from Cresswell Avenue, Craighburn Farm, looking south.

The Bureau's weather radar showed the storms, including the severe storm (the dark red area) which produced 18 millimetres of rain in half an hour in the Adelaide CBD.



In stark contrast, whilst storms moved close by the Gorge, not a drop of rain fell in the Craigburn Farm gauge!

Andrew Watson

Update on North side revegetation

After seeing a lovely (and lonely) mature redgum being crowded out by woody weeds in March 2015 Dennis Rowe, David Beaton - and this year Martin Bentley - have been removing the pests, ie the usual olives and ash plus the more exotic cotoneaster, fig, dog rose and laurestina from the adjacent area.

Happily, as well as other majestic redgums a variety of smaller eucalypts have been uncovered, including a number of bluegums on the drier slopes.

Finding these are providing a reward for their efforts.

As much of the soil in this area remains damp for much of the year, last winter a mix of native plants was planted by Rick Coyte from stock he had raised. These are looking very healthy, having survived this summer very well.

Now the soil is soft, and with further rain expected, the planting of over 100 other suitable plants has just been carried out (25/6/16). The purchase of these plants was made possible due to a significant donation to the Friends by the Flagstaff Hill Kindergarten, Renwick Street.

It is particularly pleasing to see the start of natural regrowth of eucalypts, acacia and native geranium in the area first cleared.

It is hoped that more of these plants will be seen in future.

Check out the area some time.

Turn left (South) at the bottom of the 'Gorelon Hill', at the end of the Cypress Trail (now Spring Creek Trail) which starts near the Kindergarten on Renwick Street, Flagstaff Hill.



One gum. Many olives!



Gradually getting there.

David Beaton

Spot the difference

These two photos were both taken in the Sturt Gorge park in the same patch of orchids in October 2015. Can you spot the apparent difference in the *structure* of the flowers? Compare the “tongue” of each, and under the “hood”.



In the left hand picture you'll notice that the “tongue” (labellum”) is protruding downwards, and that both side edges have a line of long white bristles.

Look for that in the right hand picture and it seems to be missing ... until you notice that the labellum is actually standing up vertically under the “hood”, with a few of its bristles still visible on the left side.

Why the difference? Well, the flower on the right was accidentally nudged in the process of getting ready to take the photo, and, sensing the vibration, the flower flicked it's labellum into the vertical position.

Normally it's an insect that causes the vibration, and in snapping its bristly labellum into the vertical position the flower sweeps the insect in under the hood, trapping it inside.

“Ah!” you might think, “It's the orchid equivalent of the Venus Fly-trap.”

Not quite. After some time the orchid lowers its labellum again, allowing the insect to escape. It's just trying to hold the insect inside long enough to ensure its pollination.

The orchid's name is a bit of a mouthful; *Oligochaetochilus excelsus* (formerly *Pterostylis excelsus*) commonly called the “Tall Rufushood” though ours lack rufus colouration. In our park they are limited to an unpromising looking, seldom frequented area some 350 metres down-slope behind Flagstaff Hill School.

They seem to have been previously misidentified as *Pterostylis biseta* (an easy mistake to make since the two species are superficially very similar).

The plant survives summer as a small “bulb” not far underground.

First to appear after winter rain is a rosette of leaves flat on the ground. In spring, as the flower stem begins to grow, the leaves brown off, and by the time the plant is flowering (October) the leaves have completely died .

Thanks to Robert (Bob) Bates for correcting the identification of this orchid and to Robert Lawrence for his field visit, help and useful book, *Start with the leaves: a simple guide to common orchids and lilies of the Adelaide Hills*.



Rick Coyte

Birdlife

In addition to the customary black cockatoos which feed noisily at this time of year on the *Allocasuarina verticillata* (good) and feral pines (bad) in the Gorge I think we'll have to keep an eye out in future for a relatively new arrival, the White-winged Chough (*Corcorax melanorhamphos*).

This is a medium-sized bird – about the size of a magpie - with deep black plumage, a down-curved bill, red-circled eye and a distinctive white patch at the end of each wing which shows clearly when the bird is in flight. These lovely creatures are found in flocks of a dozen or so and are distinguished by their large mud nests. Keep your eyes peeled!

Andrew Goldie

Magpie Creek Ruins

We've just received a copy of the report from last year's archaeological survey of the Magpie Creek ruins by Flinders University. It certainly adds to the initial findings from over a decade ago.

The main conclusion is that the building was almost certainly a domestic dwelling of three rooms, all built at the one time. At the northern end there was probably a self-contained room for the parents of the family, while at the southern end there would have been a large living area and kitchen which was separated by an interior wall from a smaller room which may have been a bedroom for children. There were only two doorways, both on the western wall, one to the parents' room and the other to the living area. No evidence of a verandah was found.

Artefacts retrieved from the main building were generally not of much help in teasing out the details of who lived there, mainly because they couldn't be dated satisfactorily and were more likely left in more recent times by picnic groups and target shooters.

However, a small outbuilding nearer the creek, which contained the skeleton of a horse, had several items of domestic refuse (buttons, ceramics etc) which pointed strongly to habitation by a family group some time in the mid-19th century.

Going by records from the Lands Titles Office, the Trott family were the likely first inhabitants of this building and would have vacated it when their financial circumstances allowed them to move closer to the centre of Blackwood. After that the building would have fallen into disrepair.

The ruins remain something of a mystery, but are a significant part of the State's early colonial history and deserve preservation on that account. Artefacts retrieved from the site have been catalogued and will be held by the Coromandel Valley Branch of the National Trust.

Further archaeological surveys may contribute more information on the nature of this dwelling and its place in early colonial settlement of the area.

Meanwhile, responsibility for the site's preservation rests with DEWNR, Mitcham Council and the National Trust. A low profile for the site is probably the preferred option.

So, many thanks to the staff and students of Flinders University, and to our own Liz Sawyer, for keeping this part of our colonial heritage alive.

Andrew Goldie

Membership renewals

Membership of the Friends of Sturt Gorge falls due at the start of each calendar year. The annual fee is still just \$10 although donations are always welcome.

Contact Bob Grant on 7329 8296 or at bobgrant@adam.com.au and he'll be happy to take your money and send a receipt.

Maps

The latest edition of the Friends of Sturt Gorge map is two-sided to allow for easier reference, and includes all the new trails with their names. Just \$10.00. Contact Bob Grant for your copy.