Newsletter 37

Spring 2017

FRIENDS OF WAITE CONSERVATION RESERVE Inc.

COMING EVENTS

Working Bees
October
Saturday 7th
Sunday 15th
Meet at Springwood Park
off Old Mt Barker Road

November
Saturday 4th
Sunday 19th

December
Saturday 2nd
Meet at Gate 82 off
Hillside Road, Springfield

THE UNIVERSITY of ADELAIDE

President's message

Deer – worse than we thought

Deer are undeniably beautiful but that's where their appeal ends. Feral deer have killed or severely damaged many of the sapling trees and shrubs we have planted or have naturally regenerated. The reserve is also criss-crossed with trails made by their sharp hooves. But this damage pales when compared with the scale at which deer are dispersing olive seeds throughout the reserve and beyond.

Fallow deer eat olive fruit and ultimately regurgitate (rather than defecate), the cleaned olive pits in scattered piles wherever they feed and rest. Relieved of the inhibitors contained in the outer flesh, the pits are primed ready to germinate. Anyone who has spent time pulling olives in the reserve will have noted the clumps of seedlings, often 50 or more together, the consequence of deer-mediated dispersal. Foxes and birds also disperse olive seeds but in fewer numbers per deposit.

In July I took a group of university students to the reserve to show them deer damage. I had earlier identified a site on the Western Slopes where I had seen a couple of deer 'deposits' and selected a 50 x 50m quadrat for them to survey. In a few minutes they located and flagged 44 deposits, a sample of 21 of which I later picked up for counting.

The counts revealed the equivalent of a staggering **85,000 deer-dispersed pits/ hectare**. While this number may not be typical of the entire reserve, it is clear that numerous deposits occur throughout the reserve with highest densities in Leafhopper Gully, Netherby Gully, Urrbrae Ridge and in our most pristine area, Quartz Hill.

It is important to emphasize that the quadrat was cleared of mature olive trees many years earlier and is more than 100m away from existing fruit-producing olive trees, ie. all pits were transported there from well outside the quadrat. The number and distribution scatter of the pits also confirm that they were dispersed overwhelmingly by deer and not by birds or foxes. The age of the pits varied, obviously deposited over several years but many were fresh and obviously still viable. Fourteen percent were split in two, indicating they had previously germinated. Some were in the process of germinating.

How does this translate into the number of seedlings which ultimately grow? It is hard to tell because we are continuously removing them on an ongoing basis at working bees etc, but as an example I recently pulled **1472 olive seedlings** from a few square metres in Stone Reserve – associated with three deer-dispersed scatters of olive pits. There were also a couple of Hawthorn seedlings, obviously also carried there by deer.

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Deer– Worse than we thought

Seedling size suggested the olives had germinated over the past 2-3 seasons including 311 at the cotyledon stage that had germinated only in the past couple of weeks. There were still many pits remaining and doubtless when I return there will be many more seedlings … and for years to come.

What does this all mean for ongoing management of olives in the reserve? While we seem to be keeping on top of seedlings in the 100ha of olive-cleared reserve, we do so at the expense of other restoration activities. Constantly chasing tens of thousands of new seedlings introduced annually by deer means we lose out hugely in time and opportunity costs. I spent 2 hours pulling the seedlings above when I could have been doing something more productive in the reserve.

Deer numbers over the past few years have been quite low, mostly in single figures, kept down by occasional culls. But these few deer are having a disproportionately severe impact on the reserve and must go. We need to continue to work cooperatively with our neighbours and accredited hunters to humanely remove deer on a regular basis but especially during the olive fruiting season.

Peter Bird

Deer damage on young Golden Wattle
Photographer: Clint Garrett

Fallow Deer
Photographer: Peter Beer

Regurgitated olive pits from Fallow Deer
Photographer: Peter Bird

Bronze Cuckoos at Waite

When walking in the Waite Hills in winter and spring and you hear a loud downward or upward trill, you may be on to a Bronze-Cuckoo, so named for their shimmering bronze backs. They are the smallest of the Australian cuckoos, the group of birds that mainly place their eggs into other birds' nests, thus passing on to much smaller birds the responsibility of raising their young. The cuckoo female finds a nest of its chosen host by quietly watching its targets visiting their nest and then lays her egg in the nest before ejecting any host eggs. When the cuckoo chick hatches, it muscles any 'rightful' eggs or young out of the nest, ensuring that it has the undivided attention of the foster parents.

The most commonly recorded cuckoos in WCR are the Horsfield's Bronze-Cuckoo (HBC), *Chyrysococcyx basalis*, and the Fan-tailed Cuckoo, *Cacomantis flabelliformis* (Possingham 2001). They generally appear in winter and may persist through the spring, but are more often heard than seen. They often call persistently from a dead branch at the top of a tree or from a power line. The Bronze-Cuckoos are about the size of a starling, with a slim build, bronze back and wings, and horizontally-striped breasts. In the HBC there is a gap in the stripes while, in its close relative, the Shining Bronze-Cuckoo (SBC), the lines are continuous. The other main difference, apart from the call, is that HBC have a dark line through the eye while the SBC lacks the dark line and has the stripes continuing from the belly to under the bill.

As far as I know there are no records of SBC at WCR, but this species seems to be on the increase generally across the temperate areas of South Australia so may appear occasionally. Calls are notoriously hard to describe but the HBC call is very loud, detectable from several hundred metres, goes down the scale and is higher in pitch than the SBC, which mainly goes up the scale and is very 'demanding'. To hear these, simply google http://www.graemechapman.com.au/library/sounds and listen!

Horsefield's Bronze Cuckoo
Note the incomplete bars on the chest and the dark eye line when compared with the Shining Bronze Cuckoo below
Photographer: Aviceda
https://commons.wikimedia.org/wiki/File:Horsfield%27s_Bronze-Cuckoo_Capertee.JPG

Shining Bronze Cuckoo
Photographer: Aviceda
https://en.wikipedia.org/wiki/Shining_bronze_cuckoo#/media/File:Shining_Bronze-Cuckoo_Dayboro.JPG

Bronze Cuckoos at Waite

Cuckoos eat insects, including their larvae, and are caterpillar specialists so should be beloved by gardeners, horticulturalists and farmers. Some even eat and seem to prefer the hairy caterpillars and their stomachs can be lined with caterpillar 'fur' (Higgins 1999). They mainly glean their insect prey from shrubs or the canopies of trees.

The usual hosts of the HBC are small birds that build dome-shaped nests, like fairy-wrens and thornbills. So at WCR they are probably looking for the dome nests of Superb Fairy-wren, *Malurus cyaneus*, Buff-rumped Thornbill, *Acanthiza reguloides*, or Yellow-rumped Thornbill, *A. chrysorrhoa*. SBC have similar preferences for dome-shaped nests, but both will parasitize open nests, like those of honeyeaters, robins and shrike-thrushes.

In terms of historic records from the general area, we are blessed with some data from the 1920s and 1930s from Netherby, courtesy of John Sutton, a resident, and mainstay of the South Australian Ornithological Association. He kept meticulous records that show that three cuckoo species regularly visited the area in winter and spring (HBC, Fan-tailed and Pallid Cuckoos), while two were vagrants (including the SBC). In January 1922 Sutton reported a young bronze-cuckoo being fed by two Yellow-rumped Thornbills and he thought the bird was an HBC (Sutton 1922).

For more reading on John Sutton (1865-1938) I recommend an excellent series by a Friend of WCR, Philippa Horton (Horton 2013a,b and Horton 2014a,b). Philippa, Belinda Cale and I are currently writing a paper based on Sutton's records at and around his home at Netherby from 1918 to 1938. As well as bird observations made within his own property, John often included birds heard in surrounding gardens or sightings passed on by neighbours. In April 1937 Sutton began to take regular walks through the nearby extensive grounds of the Urrbrae estate and the Waite Arboretum.

Penny Paton

Fan Tailed Cuckoo

Photographer: JJ Harrison (jjharrison89@facebook.com) - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=12200793

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Enid Robertson Memorial Plaque

When you catch your breath half-way up the steep climb in Wild Dogs Glen and gratefully slip onto the wooden bench, you may notice to your left a discreet bronze plaque set into a lichen-encrusted rock, bearing the words:

In fond memory of Enid Robertson (1925-2016) who was instrumental in the formation of the Friends of Waite Conservation Reserve in 1997. Enid surveyed the flora and trained bush carers.

Enid was a much-loved botanist and bush carer, who pioneered minimum disturbance techniques of restoration of native vegetation, culminating in her ground-breaking publication on Grassy Woodland Restoration at the 32 hectare Watiparinga National Trust Reserve. After her retirement in 1987, Enid was just as busy with on-ground care of precious remnant vegetation, overseeing others in the field and advising various custodians of native vegetation.

Enid also delighted in the role of mentor to students and practitioners who were passionate about the study and conservation of native flora. I was one such lucky person. At Waite Conservation Reserve bush regeneration began in 1992 with five students supervised by Enid and, later, teams led by two of her 'trainees', Phil Shearman and Bryan Both (Jennifer Gardner pers. comm.). After this the University of Adelaide became more involved in the commission of the on-ground works.

On 10th September 2017 there was a ceremonial unveiling of the plaque, which our President, Peter Bird, had cunningly hidden behind a drapery of eucalypt and acacia leaves. We were fortunate to have two of Enid's children, Beth and David Robertson, to do the honours (Photo 1) and who joined us afterwards for a light lunch on flatter terrain.

We are indebted to Innovation Engineering for their careful construction of the plaque and to long-time Friend, Andy Baker, who very professionally installed it in April this year (Photo 2). He took great pains to secure it in a manner we hope will make it vandal-proof. As Beth said, Enid was not a great one for memorials, but she thought her mother would make an exception for this modest but appropriate reminder of her great love of the Australian bush and its uniqueness.

Penny Paton

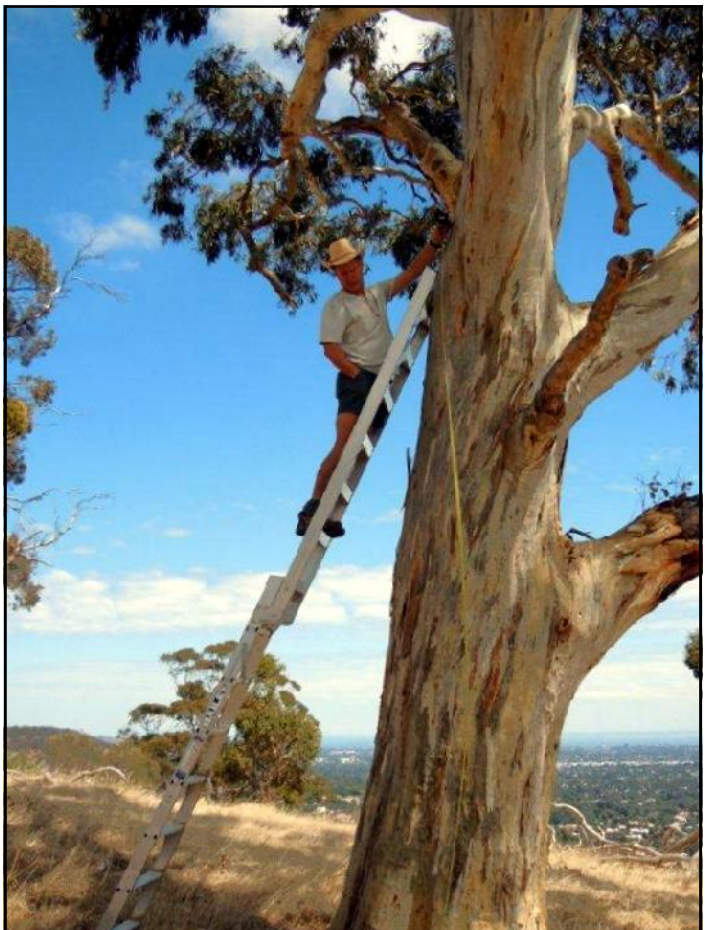
Bat Boxes

Remember when we built and erected bat roosting boxes as a Friends project? That was back in 2012! At the time I was doubtful that the boxes would be used as the reserve is chockers with natural bat-sized tree hollows.

Imagine my surprise then when on checking the 14 nest boxes in June I found 4 Marbled Geckoes and 3 Huntsman Spiders in residence. Plus 2 Gould's Wattled Bats in the Koala Gully box. Not much evidence of long-term usage by bats in any other roosting boxes but exciting nevertheless.

The bat boxes were still in good condition, except for one which was lying un-ceremoniously at the foot of its host blue gum. A highway of koala tracks leading up the trunk and over the box told of a challenging life culminating in its demise. The box is back up but with longer screws.

Peter Bird



Peter Bird putting up a bat box on Netherby Spur

Working Bees

Notwithstanding the problems with deer dispersing olive pits discussed elsewhere, we are on track to complete our annual pass across the reserve removing olive seedlings. In fact we should even have time to complete a few other tasks. University contractors did a great job last year carving off another chunk of mature olives in Stone Reserve but always at the cost of a fresh germination of seedlings. Thankfully most were concentrated in a circle around each ex-tree which made them relatively easy to find. Still, it took three working bees to pull the 10,000-odd seedlings that emerged. Many hundreds of Cottonbush and African Daisy were also either pulled or sprayed.

In a departure from our usual tasks, Meg B, Tanja and I recently tackled a population of Boneseed at the big quarry at Peregrine Point. This area does not usually attract our attention because it has treated for mature olives. But increasing numbers of Boneseed seedlings throughout the reserve, presumably transported from here by deer, foxes and birds, demanded that we intervene. Their bright yellow flowers assisted greatly in locating and removing 1500 or so from the otherwise healthy bush.

In the final two October working bees accessed from Springwood Park, I hope to finish the boneseed, target Perennial Veldt Grass on Quartz Hill and complete seedling olive removal in Stone Reserve, Quartz Hill and Pultenaea Hill. Thereafter it is back down to Springfield Gate for the final three working bees in November and December. Hope to see you there.

Peter Bird

WORKING BEES

OCTOBER	NOVEMBER
Saturday 7th	Saturday 4th
Sunday 15th	Sunday 19th
DECEMBER	
Saturday 2nd	

Seedling Olive Control 101

They say you need to do 10,000 repetitions to develop muscle memory and become an expert at something. Using this definition I can safely say I am an expert at finding and pulling seedling olives.
Here are my olive control tips.

When
easiest to pull winter/ spring when ground is moist;
easiest to see summer/ autumn when less cover;
year-round works for me – as in voting get them 'early and often'

Travel light
-carry secateurs ± mini-mattock ± multigrips;
- turn any walk into any olive hunt

Where - olive seedlings occur <u>everywhere</u> but are most abundant:
in areas recently cleared of mature olives;
near other seedlings – if you find one, look carefully within 1-2 metres – olive seeds are dispersed in multiples by birds, foxes & deer;
under trees – birds sit in them, deer rest under them & 'disperse' seeds;
amongst fallen branches – young seedlings are protected from grazing, are more difficult to see & easily missed by past olive hunters

Know your target – other plants can be confused with olive seedlings
eg. bursaria, hopbush & raspworts;
olive leaves are dark green above, pale green below;
olives have entire (non-serrated) leaf margins & are hard to the touch

Work systematically
select an area & cover it all;
walk upslope - less likely to slip; less distance to bend; easier on the back

Pull out seedlings if possible
pulling lessens risk of re-growth;
bend knees, keep back straight, lift using legs to avoid back injury;
grasp as low as possible to ground – less likely to break stems;
if stem breaks – pull out root or cut below ground to stop re-growth

When you come to a dense patch
place pulled seedlings in a pile to distinguish from un-pulled ones;
put on clear ground/ logs out of the way;
view from different angles & heights to find those last couple;
step back to review cleared area – there is always one you've missed

Options for larger seedlings
dig around base, cut side roots and/ or main root & pull out, or:
dig a hole on one side and snap off main roots below lignotuber by pushing the tree towards the hole with your boot, or:
grasp the entire plant & use it as a handle to twist the plant out of the ground;
remove all traces of the lignotuber or dab with 1:5 glyphosate

Avoid pulling re-growth (suckers) from treated olives
these need chemical treatment either by spraying or 'drill & fill';
regrowth occurs next to old stumps, is often very dense and/or multi-stemmed, and has no 'give' when pulled

Even experts miss some
don't worry, we all miss lots – small ones, hidden ones, obvious ones; that's why we go back every year

Peter Bird

Multi-stemmed regrowth olives after Peter's spraying

From the Committee

Meg Robertson, new committee member, Friends of Waite Conservation Reserve

My career has been in various studies of native vegetation, particularly in grassy ecosystems, after studying science at the University of Adelaide, where I majored in botany. I was introduced to the grey box grassy woodland in the "Waite Hills" by the late Enid Robertson while doing vegetation surveys in the region, and I became aware of how rare and valuable- such a remnant is.

I joined the Friends to help care for the Conservation Reserve a few years ago and have enjoyed many walking bees since then. My first season was a wet winter and my daughter and I were fascinated to notice the diversity of fungi around the reserve, including many that live on the living and dead grey box trunks. As well as meeting the dedicated band of Friends, one of the most rewarding things for me, in pulling out those pesky olives, is to catch sight of the native understorey plants and seedlings that often hide amongst the weedy annual grasses and other weeds.

I have a dream – which was a motivator for producing the handbook "Stop Bushland Weeds" for South Australia - that one day we will be able create the conditions that help the natives to win. On their side, their incredible diversity in form and function, while against them are the many changes that have been made to their environment; changes which unfortunately generally favour the introduced plant species. I look forward to being part of the Friends Committee.

Meg Robertson

Meg Robertson

Diuris behrii.
This year is a poor season for orchids, however there are some of this species in flower
Photographer: Clint Garrett

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