

WeedWise

Volume 18 Issue 2, June 2017

Newsletter of the Weed Management Society of SA



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From the President,

In my last article I mentioned that the WMSSA is looking to focus the direction of the society by supporting more biological control of weeds across SA. There are some really good publications available for you to use to help you find out more about a particular biological agent. I have found this site to be helpful to find information on what pest plants have biological control agents available, when to release the agents, when to monitor the agents and how to redistribute the agents.

http://pir.sa.gov.au/biosecurity/weeds_and_pest_animals/weeds_in_sa/biological_control_of_weeds

Recently while driving around I have found signs of cape broom (Montpellier broom) (*Genista monspessulana*) psyllid (*Arytinnis hakani*) having an effect on the broom by defoliating/ or partially defoliating the plants. I have noticed this damage throughout the Mt Lofty Ranges and throughout Clare. There are quite a few other biocontrol agents that are, or will become visible such as:

- Salvation Jane (*Echium plantagineum*) agents Crown weevil (*Mogulones larvatus*) and flea beetle (*Longitarsus echii*),
- Bridal creeper (*Asparagus asparagoides*) rust (*Puccinia myrsiphylli*) and leaf hoppers (*Zygina* spp.),
- Slender thistle (*Carduus pycnocephalus* & *Carduus tenuiflorus*) rust (*Puccinia cardui-pycnocephali*),
- Horehound (*Marrubium vulgare*) Plume moth, (*Wheeleria spilodactylus*) and many more.

So please keep your eyes open as you travel around and inspect properties whether it is yours or someone else's land.

The WMSSA is looking for people who are interested in being on a biological control group to please contact Henry Rutherford, or myself. See back page of this issue for contact details.

Thank you to those members who sent in articles for inclusion in this edition of Weedwise, we really do love to hear from you.

The next State Weeds Conference is in 2018 and as this conference is for you the members, we are also looking for members to play an important part in the planning of this major event. So if you'd like to be involved please contact us. Look forward to hearing from you!

Phil Cramond

WEED ARTICLES NEEDED

Would you like to contribute an article, book review or some of your technical expertise battling a weed in your patch? Is there an event you would like to publicise?

We welcome submissions for the next issue of WeedWise by 30th August 2017

Contact: Leah Feuerherdt
Email: feuerherdt@hotmail.com

Olive control trial summary – Little Para Reservoir

Tom Brookman, David Hughes and Jamie Pook (Natural Resources Adelaide and Mount Lofty Ranges)
Damian Stam (SA Water), Greg Donovan (Donovan's Earthcare) and Josh Noble (Restore Environmental Services)

February 2016 – February 2017

To examine comparative effectiveness of treatment of mature Wild Olives using two different techniques and provide an approximate comparison of cost effectiveness in Olive control management. This cost is inclusive of labour and chemical.

1. Side by side trial plots. One treated by contractors specialising in basal bark control and the other treated by contractors experienced in drill and fill. For the purposes of this trial, labour for both contractors was valued at \$50/hr.
2. Olives of various shapes, ages and sizes distributed across both trial sites; only olives greater than 90 cm tall treated as olive seedlings are generally most efficiently treated by foliar spray.

	CHEMICAL	METHOD
Basal bark method	Triclopyr 35ml/1L Bio Oil	Apply using 5L hand sprayer
Drill and fill	Glyphosate 360gm/L at 20% with water	Using 12 mm drill bit around the lignotuber at a distance no more than 25 mm apart

Results

Basal bark treatment. Includes:

2 operators

Area treated: 0.3 ha of dense, mixed age olives

Terrain: moderate-to-steep slope

Labour: total 12 hours at \$50/hr = \$600

Herbicide: Bio safe and Garlon mix 240 litres (\$5.30/L) = \$1272.00



Basal bark olive control trial demonstration. Photo Credit: D. Hughes

Olive control trial summary – Little Para Reservoir, cont'd

Olive size treated (basal bark)	Approx # trees treated (Feb 2016)	Treated trees retaining any green Leaves (Aug 2016)	Treated trees retaining any green Leaves (Feb 2017)
Small (<8 cm lignotuber diameter)	60	7 (12%)	5 (8%)
Medium (8 – 25 cm lignotuber diameter)	241	79 (33%)	15 (6%)
Large (>25 cm lignotuber diameter)	81	30 (37%)	7 (9%)
TOTAL	382	116 (30%)	27 (7%)

Drill and fill treatment

Includes: 5 operators

Area treated: 0.2 ha of moderately dense, mixed age olives

Terrain: moderate slope

Labour: total 38.5 hours @ \$50/hr = \$1925.00

Herbicide: water and glyphosate mix 60 litres (\$1.50/L) = \$89.40

Olive size treated (drill and fill)	Approx # trees treated (Feb 2016)	Treated trees retaining any green Leaves (Aug 2016)	Treated trees retaining any green Leaves (Aug 2016)
Small (<8 cm lignotuber diameter)	0	0	0
Medium (8 – 25 cm lignotuber diameter)	43	0	0
Large (>25 cm lignotuber diameter)	38	0	0
TOTAL	81	0	0

The nature of this field trial means approximate cost and effectiveness comparisons of the 'basal bark' and 'drill and fill' techniques can be made. However, note that the dense growth of olives and large numbers of seedlings around mature trees means that counts of trees treated may vary between inspections. For a slightly lesser cost, the basal bark method treated between 4 and 5 times the number of olives compared to the drill and fill method. In addition, the olives treated by basal bark included a number of large trees with lignotubers of well over 50 cm in diameter and the terrain was generally steeper.

It is important to realise that each treatment situation is different due to variables including terrain, the olive population/distribution and surrounding vegetation. Consequently, relying on specific ratios from trials such as these to claim that basal bark is "X" times more cost-efficient than drill and fill is not advisable. It is generally considerably more cost effective but how much more will depend on the specifics of the site and the operators involved.

The same can be said of the two techniques' relative effectiveness in terms of a % 'kill rate'; at this stage more data is being gathered through trials like this one. Preliminary, qualitative observations suggest that basal bark control is similarly effective to drill and fill. Observations on 8 August 2016 showed that approximately 30% of olives treated by basal bark retained some green leaves (compared to 1% for drill and fill). The bulk of trees with green leaves were substantially defoliated and retained only a few green-brown leaves. A small percentage still had substantial coverage of healthy, dark green glossy leaves. The presence of green leaves at that stage (~6 months after treatment) was not an indication of control failure, as basal bark can take up to 9-12 months to defoliate olives. Similarly, the absence of green foliage on treated trees (either basal bark or drill and fill) at that early stage is not a guarantee of ultimate success; olives treated with both methods have been observed to re-shoot years later.

As expected, many of the trees that retained green leaves in August 2016 had completely browned or defoliated by February 2017; approximately 7% of the olives treated by basal bark spray still retained green leaves. The only drill-and-fill survivor, as at August 2016, had died by February 2017. The site will continue to be monitored.



Best practice as being effective weed control: conveying the message to decision-makers

By Lynda Tout-Smith, WMSSA member

Most weed managers working at local government level will relate to Ron Taylor's issue with the meaning of 'best practice' somehow being stretched to include 'within insufficient budget'. And with the results often being less 'bangs' for the buck – ie inefficiency.

There are many weeds for which spending a little is almost as effective as spending nothing. Bridal creeper, which grows back after spraying, is one of these. It may be tempting to spray once a season and watch it die to feel that one has 'controlled' it. While this may be apparent to spray operators, one problem is that managers grappling with limited budgets are often simply unaware of the importance of strategic weed control.

One potential solution for this is the use of weed mapping. With before and after maps of bridal creeper following a year of inadequate treatment, management at the council where I work were able to see how bridal creeper had spread without proper treatment. The need for complete twice-yearly spraying of roadside bridal creeper using two operators was conveyed with the accompaniment of the maps.

After twice-yearly spraying with two operators was instituted, maps (GPS-ed inexpensively by the contractors doing the weed control) showed a significant decrease in bridal creeper on our roadsides. The use of mapping has shown that ad-hoc treatment including the use of a sole operator (who has to drive and spot infestations at the same time) cannot be considered 'best practice' – the results were undeniable. And it is now showing the reward for scrupulous work – maps with sparser bridal creeper and lower contractor costs.

Have your say on NRM in SA

The state opposition is giving communities the chance to shape the future of natural resources management in SA, under a Liberal government. Opposition environment spokesperson David Speirs released an online survey seeking feedback on the effectiveness of the NRM structure and funded programs.

The 16 questions also cover how land and water levies should be calculated and where money should be spent. This feedback will be used to develop the Liberals' election policy to be released later this year. Mr Speirs has received feedback that many local communities and volunteer groups are "disenfranchised" with the present system and some vital programs have ceased.

"Obviously we need to raise funds for environmental work but a lot of people are also frustrated by the lack of transparency about where their levies are being spent," Mr Speirs said. He particularly wants to hear from the state's landowners, recognising the importance of "getting them on-side". "We need to work together to rebuild trust and transparency," he said. "Unless we can empower the people who manage the land on a day-to-day basis we will not get good environmental outcomes."

Opposition agriculture spokesperson David Ridgway said should the Liberals win government, the feedback obtained in the survey would help them "work on fixing this system from day one".

Visit <https://www.surveymonkey.com/r/nrmsurvey> to have your say.

New weeds declared in South Australia

The State Government has declared an additional five plants as weeds and prohibited their sale across South Australia in order to protect our State's biodiversity.

These latest declarations and changes follow consultation with communities and industry and are the final step of a five-year review of the state's weed management framework by Biosecurity SA, a division of Primary Industries and Regions South Australia, and the eight NRM regions.

There are now 161 weeds declared under the Natural Resources Management Act.

The newly declared plants under the Natural Resources Management Act are alisma, coastal tea-tree, dune onionweed, giant reed and parrot feather.

Parrot feather (*Myriophyllum aquaticum*), which is a popular aquarium plant, interferes with water flow, competes with native water plants and can inhibit fishing and other recreational activities. Parrot feather is unfortunately becoming established in ponds and streams and is also a risk to the River Murray.

Coastal tea-tree (*Leptospermum laevigatum*), a small tree native to sandy coasts in Victoria and New South Wales, is now starting to invade native vegetation in South Australia.

Alisma (*Alisma lanceolatum*) is an emergent aquatic perennial that forms dense stands and has the potential to interfere with stream flow and reduce biodiversity by excluding other vegetation. It occupies the zone between the channel bank and taller aquatic plants.

Dune onion weed (*Trachyandra divaricata*) is highly suited to coastal environments where it can become dominant.

Policies on an additional eight declared weeds have been updated, including those for willows. Tree and shrub willows, apart from the common weeping willows, are now all prohibited from sale across the state. In addition, control of four highly invasive willows – black, crack, goat and hybrid willows - is now enforceable in Adelaide and the Mount Lofty Ranges, South East, and SA Murray Darling Basin Natural Resources Management regions.

Further information on the new policies and declared weeds is available from:

www.pir.sa.gov.au/biosecuritysa/nrm_biosecurity/weeds/pest_weed_policies or regional Natural Resources centres or Biosecurity SA on 8303 9620.

Coastal tea tree. Photo credit: Brian Walters, www.anpsa.org.au



Dune onion weed. Photo Credit: weeds.brisbane.qld.gov.au



Parrot feather (*Myriophyllum aquaticum*). Photo Credit: weeds.brisbane.qld.gov.au



Prickly pear and cochineal in South America

From Barbara Benshemer, WMSSA member

We were in Peru in June 2016, and in the western Andean foothills (about 1500 metres above sea level) at San Bartolome we saw vast cultivated acreages of prickly pear covered in cochineal beetles, the beetles being the 'crop'.

Our observations were that the prickly pear was spreading uphill into clear areas, and the cochineal beetles were doing precious little towards control. Maybe it might work better in the Mt Lofty Ranges, but take care!

Editors note: Cochineal is local to both South America, mainly in the Northern area as well as Southern parts of the USA particularly around Mexico. The problem with cochineal is that there are a lot of gene types so in Australia we need to try and match the right cochineal species with the prickly pear species, e.g. cochineal that is effective on tiger pear will not work on common prickly pear. There are over 15 species of prickly pear in SA!



Above: Prickly pear spreading into the foothills. Below left: Cochineal (*Dactylopius coccus*) on prickly pear. Below Right: The crop of cochineal. Photo Credits: B. Benshemer



Electronic Weedwise

Thank you to those who have nominated to receive your Weedwise electronically. We now have 25 people receiving the electronic version. Go you good things!! Just a reminder that you can contact us at any time to advise you would like the electronic version. Weedwise will be sent to your email address as a PDF, suitable for screen viewing. We are working towards sending you a link to the Weedwise newsletter on the WMSSA website, to avoid clogging your inbox.

The printing and postage of Weedwise newsletters costs the Society over \$500 each issue, so if you would like to assist the Society by receiving your Weedwise electronically, please call or email Leah at 8429 0374 or leah.feuerherdt@sa.gov.au.

Biocontrol agents in SA

The President's welcome, and a spare page in the newsletter- a perfect opportunity to share some more information about some of the biocontrol agents mentioned by Phil. The photo below right is crown weevil (*Mogulones larvatus*) damage to Salvation Jane. Larvae bore into the crown. Attacked plants can be identified by a black discharge oozing from the crown of the plant. Adult weevils emerge in late spring, feed on the leaves and flowers of Paterson's curse until the plant is dead.

Horehound plume moth (*Wheelaria spilodactylus*) caterpillars begin feeding in the developing shoot tip. When they have grown larger they move out and feed on the leaves, working their way down the shoot, progressively defoliating the stem. The plume moth usually has three generations per year.

The most obvious symptoms of the presence of the slender thistle rust (*Puccinia cardui-pycnocephali*) are very dark brown-black pustules or spots on leaves and stems of infected plants. These are often more prominent on the underside of leaves. Heavily infected leaves dry up and wither prematurely.

The bridal creeper rust fungus (*Puccinia myrsiphylli*) attacks leaves and stems, reducing the amount of green plant material. It can produce many generations a year, resulting in large amounts of wind dispersed spores.

If you see weed biological control agents as you go about your business then you can record and share your observations and experiences with others using the site below and help to build our knowledge of these community assets. The website also has more details on the agents and to see records of where agents are currently found. <http://root.ala.org.au/bdrs-core/wbiocont/home.htm>



Mogulones larvatus damage on Salvation Jane. Photo Credit: T Morley



Plume moth caterpillars camouflage well on horehound. Photo Credit: T Morley

Left: Slender thistle rust. Photo credit P. Steverns

Right: Bridal creeper rust. Photo credit: K. Roberts



Weed Management Society of SA Membership Form

The Weed Management Society of SA Inc. was formed on 15th October 1999, bringing together people actively involved in managing weeds and researchers with interests in protecting our agricultural and natural environment. The Society is a forum to share knowledge, debate issues and generate ideas, drawing on practical weed control experience and the latest research.

New members are always welcome, or simply come along as a visitor to public meetings. The Society's newsletter *WeedWise* is distributed by mail to all financial members.

Please tick relevant boxes, fill in your contact details and send to the address below (Note: GST is not charged by the Society)

Annual Membership:

- \$30 standard, \$15 Concession/Student, free for community groups

I want to become a member of the WMSSA and would like to receive the society's newsletter *WeedWise* by: mail email

I enclose a cheque for \$ ____ (payable to Weed Management Society of South Australia)

I have made an electronic payment of \$ ____ to the WMSSA Account.

Account Name: Weed Management Society of SA

Institution: Peoples Choice Credit Union

BSB: 805-050 **Number:** 2378 7221 **Reference:** Your surname
Payments by electronic transfer from accounts with People's Choice Credit Union will need to use: **Account number:** 2349916,

First three letters of account name: "wee".

Name: Mr/Mrs/Miss/Ms/Dr

Address:

Telephone Work:

Mobile:

Facsimile Work:

Home:

Email:

Forward with payment to:

Secretary, WMSSA c/- Henry Rutherford, PO Box 517, Torrens Park, SA, 5062

Upcoming Events

WMSSA meeting
Waite Campus, Urrbrae
Thurs 29th June 4pm

Thompson Beach Revegetation
17th June 9 am -1 pm
Contact: Linda Durham
Telephone: (08) 8273 9117

Horse owners land management
workshop (free)
22 June, 7.30 pm - 9.30 pm
Wilabalangaloo, 1582 Old Sturt
Highway, Berri
To register Helga on 0490 787 495

NZ Plant Protection Society
Conference
8-10 August 2017
Tauranga, Bay of Plenty
<https://www.nzpps.org/conference.php>

State Landcare Conference
11-13 September 2017
Clare
<http://landcaresa.asn.au/event/2017-state-community-landcare-conference/>

26th Asian Pacific Weed Science
Society Conference
Sep 19-22 2017
Kyoto Japan
<http://www.c-linkage.co.jp/apwss2017/>

19th NSW biennial Weeds
Conference, Armidale
16-19 Oct 2017
<http://www.nswweedsoc.org.au/common/programs/EventItem.asp?id=875>

21st Australasian Weeds
Conference
Sydney, September 2018

www.wmssa.org.au

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