The Bridal Creeper

newsletter of the national asparagus weeds management committee

back copies available from www.weeds.org.au/bridalcreeper/

November 2008 vol. 4 no. 2

Weed Alert- *Asparagus falcatus*

A newly emerging Asparagus weed, *Asparagus falcatus*, has recently caused a stir amongst weed managers on the east coast. The weed, commonly known as sicklethorn, is known to occur on the mid north coastal region of NSW and south east Queensland (in riparian areas of suburban Brisbane).

Sicklethorn is a robust climber that prefers moist, semi-shaded growing conditions[1] and as it looks unlike other Asparagus weeds that have naturalised in Australia it may not obviously strike people as a member of the *Asparagaceae* family.

Introduced into Queensland as a garden plant (which has since escaped in waterways), *A. falcatus* is native to western, eastern and southern Africa, Sri Lanka, the Canary Islands and the Mediterranean.

Leaves are shiny, dark green, often sickle shaped (hence the name!). Woody stems have hard, hooked thorns and are light grey in colour. Small white flowers are followed by fruit that ripens to red. Whilst literature describes the plant as growing 2.5 – 3 m tall in its native range, anecdotally it grows to 6 metres in Australian conditions. Although originally from sub-tropical regions a quick 'google' reveals it will survive overnight temperatures of 2 degrees and 'will grow for anybody'.

If you have seen this species and can comment on its ecology, distribution or effective control techniques then the Coordinator would love to hear from you!
(contact details below)

[1] Environmental Weeds of Australia DVD, University of Queensland

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newsletter supported by : -

Government of South Australia
Department of Water, Land and Biodiversity Conservation

national asparagus weeds management committee
A.asparagoides
A. africanus
A.densiflorus
A.declinatus
A.plumosus
A.scandens
A.virgatus

An Australian Government Initiative

DEFEATING THE WEED MENACE

Progress in 2008

Biological control

2008 sees the wind up of the national biological control release program. The program has been in place since 2000 and has been one of the most effective mechanisms available to land managers and community groups to manage established bridal creeper infestations. Since its inception the CSIRO and DPI Victoria managed project has resulted in over 3000 releases of rust fungus and leaf hoppers. Approximately 12 500 leaf beetles were also reared and released in 2008. The rust fungus has been shown to significantly reduce both the cover and tuber biomass of bridal creeper (Louise Morin, CSIRO).

Although nationally coordinated agent distribution will no longer occur, a number of community groups and land managers have continued to actively spread biocontrol agents, including:

- Aerial application of rust fungus in threatened coastal Moonah woodlands on the Bellarine Peninsula in Victoria.
- Spore water distribution throughout vulnerable coast Banksia woodlands and coast tussocky grasslands at Venus Bay in Victoria.
- Community workshops demonstrating how to make and distribute spore water and recognise Asparagus weeds.
- Integrated weed management programs, including the use of biocontrols for bridal creeper in Western Australian regions.

Photo: leaf beetle (*Crioceris* sp.) CSIRO

Control of newly emerging Asparagus weeds

- Land managers and community groups continue to vigilantly manage and monitor isolated infestations of Asparagus weeds, including:
- Management of *A. scandens* to prevent further invasion into Bramley National Park and the escape of the species from reserves in the Augusta- Margaret River shire.
- South Australian NRM Boards are continuing to implement local management strategy for *A. declinatus* in affected regions. Efforts have focussed on herbicide trials, mechanical control and protection of high value natural assets.
- NRM regions in Tasmania have mapped *A. scandens*. Control of small infestations has occurred, however large infestations on King and Flinders Islands continue to prove challenging.

Eradication programs

- Progress towards eradication of bridal creeper in Tasmania continues, with all NRM regions investing in surveying and mapping, followed by best practice control at all known sites.

  Mapping data for bridal creeper and *A. scandens* will be collated to improve existing state distribu tion maps and assist future control programs.
- Queensland's roadside occurrences of bridal creeper have been controlled by local council authorities, with Biosecurity Queensland developing a project to rise awareness and support for eradication.
- Two projects to contain the Western Cape form of bridal creeper have now undertaken 2-3 years of control work. This form of bridal creeper, resistant to biocontrols, is found near Adelaide and in the south-east of SA and over the border into Victoria.

Western Cape re-shooting post control

Western Cape growing with common

Western Cape seedling carpet in *Dianella*

Research update

A barrier to the recovery of bridal creeper (Asparagus asparagoides (l.) Druce) infested sites: The residual impacts of the root system.

Peter J Turner, John K Scott, Helen Spafford, John G Virtue, & Shauna Potter

Bridal creeper's extensive rhizomes and storage tubers form underground mats that comprise up to 87% of total plant biomass. Even after control, the dead root system can remain in the soil for many years. Peter Turner, as part of his PhD, ran a study that aimed to i) measure the quantity and decomposition of the belowground biomass of bridal creeper; and ii) determine the impact of both live and dead root material on early plant growth.

In Western Australia, the belowground dry weight of bridal creeper was estimated at approximately 3 kg per square metre. In the first three months about 40% of bridal creeper's belowground biomass was lost. However after thisperiod the decomposition rate slowed dramatically, indicating that this process may take many years following weed control. At a site of earlier impact trials in South Australia, the belowground biomass was measured at 1.4 kg m-2, some nine years after herbicidal control.

In an experiment using potted plants, results indicated that bridal creeper roots did not affect the relative growth rate of a native vine, however its root growth was compromised when grown in the presence of either live or dead bridal creeper roots.

From this it appears that impacts after control (ie from dead tubers) are largely due to space limitations and not chemical suppression (ie allelopathy).

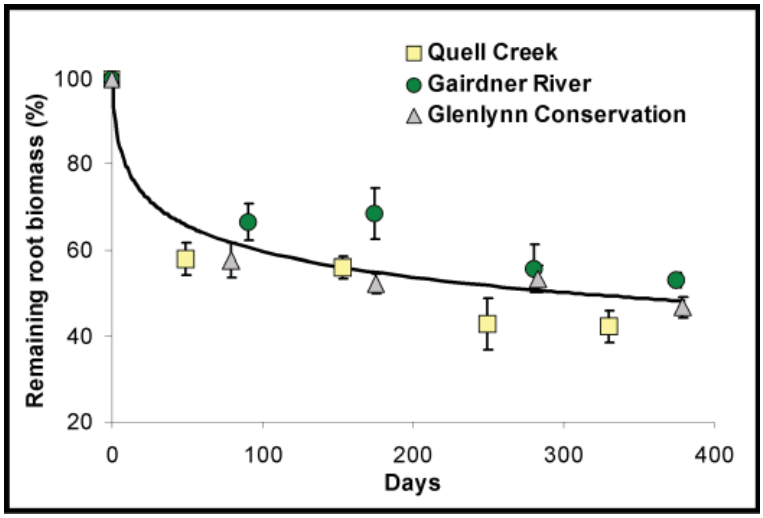


Figure 1-Decomposition of bagged bridal creeper belowground biomass across three W.A. sites

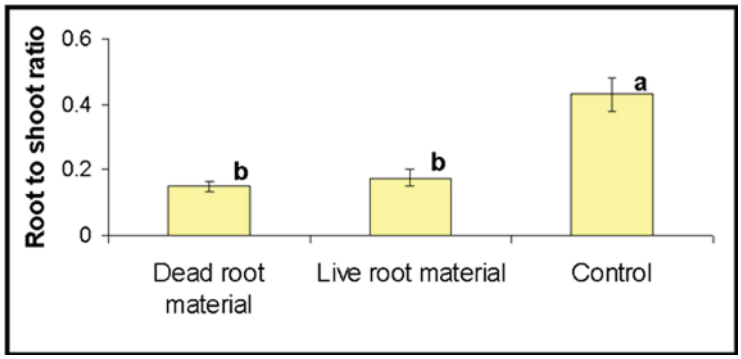


Figure 2- Average root to shoot ratio of a W.A. native plant when grown in pots with or without the presence of bridal creeper roots.

The above studies show that the root biomass can persist in an ecosystem for many years after control and that the dead bridal creeper roots can still have an impact on other species. Restoration of sites with older infestations can be assisted by using the biological control agent, the bridal creeper rust, which acts as a resource sink and has been shown to reduce bridal creeper's belowground biomass.

More bridal creeper research- impacts on plant diversity and structure.

Plant Protection Quarterly has published research by the University of Adelaide. The article is the 'Impact of bridal creeper (*Asparagus asparagoides*) on native ground-cover plant diversity and habitat structure', Claire J. Stephens, José M. Facelli and Andrew D. Austin. 2008, 23(3), p. 136.

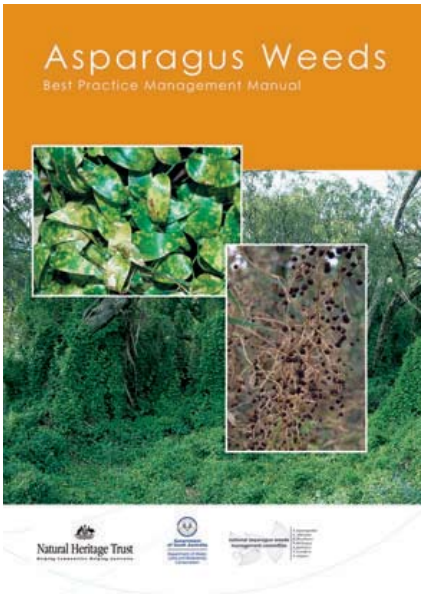
Check out the September edition (Volume 23 (3) 2008) for full article.

Latest News

New chair for national committee

The national Asparagus weeds committee has a new chair! Penny Paton hails from Adelaide and has been involved in Asparagus weed management for a number of years. Active in NRM all her working life, Penny has focussed on avian ecology and more recently grassy woodlands.

The restoration of sites post control remains a research priority for the National Asparagus Weeds Management Committee and Penny is well skilled to guide the committee towards this goal.



Review of the best practice manual

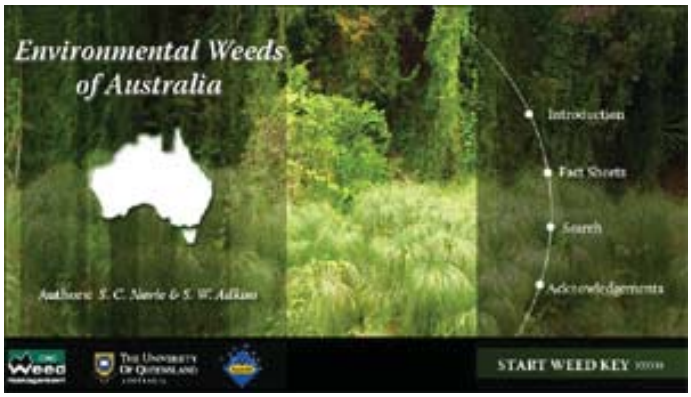
The Asparagus weeds best practice management manual was developed in 2006 to provide readers with an understanding of current best practice methods for a number of Asparagus weeds. Information includes weed identification, distribution, legal status, mapping & planning, effective herbicide types, rates and application advice, how to re-distribute biological control agents and other control techniques.

As there are only a handful of the original 2000 copies remaining it is time to do a re-run. A review of the manual is planned to capture recent advances in knowledge.

Two workshops will be held – one in southern and one in northern Australia- to collate this data. **If you would like to participate in a workshop or provide information on effective management techniques, control costs, lessons learned, general tips, or (hopefully not!) a new and emerging Asparagus weed, the coordinator would like to hear from you.** Contact details are on the front page of the newsletter.

New identification tool - Environmental Weeds of Australia

The University of Queensland has recently released the Lucid key to Environmental Weeds of Australia. The CD-ROM allows interactive identification of over 1000 invasive plants, as well as stand alone fact sheets and photos.



The resources features 9 Asparagus weed species, including many excellent photos and notes on distribution, biology, impacts and similar species.

Asparagus articles wanted

If you would like to submit an article on your Asparagus weed project or promote a local event please send the details to the coordinator by 16th February 2009.
Email: potter.shauna@saugov.sa.gov.au