

A GOOD WEED



Newsletter of The Weed Society of New South Wales Inc.

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Secretary: Alan Murphy

Editor: Lawrie Greenup
Assistant Editor: Hanwen Wu

#55 Winter 2011



Madreia vine *Anredra cordifolia*, is an aggressive weed of coastal areas in New South Wales smothering native trees and shrubs. Other names are potato vine and lamb's tail vine.

Top image shows flowering inflorescences hence the name lamb's tail vine.

Bottom image illustrates the aerial tubers and leaf structure

Images: Tony Cook

Article on page 7



Society News

President's Column



The Rural Industries Research and Development Corporation (RIRDC) has funded 33 open-call projects and 20 commissioned projects investigating a wide range of weeds issues. Five of the open-call projects and three of the commissioned projects are being led by NSW researchers;

- Dr Kris French, University of Wollongong - The weight of the vine: Impacts of vine infestations on plant health
- Prof. Paul Martin, University of New England - Innovations in institutions to improve weed funding, strategy and outcomes
- Prof. Brian Sindel, University of New England - Improving regional adoption of weed control- a case study in the New England
- Mr Royce Holtkamp, NSW Department of Primary Industries - Biological control of Hudson Pear in Australia
- Dr David Officer, NSW Department of Primary Industries - Biological control of weedy *sporobolus* grasses by the fungus *nigrosporaoryzae*
- Dr Stephen Johnson, NSW Department of Primary Industries - Future proofing the National Post Border Weed Risk Management Protocol (commissioned)
- Dr Remy Deehan, Charles Sturt University - Use of hyperspectral remote sensing for enhanced detection of weeds (commissioned)
- Dr Paul Weston, Charles Sturt University - Pater-son's Curse as a model to measure impact of climate change on biocontrol for weeds (commissioned)

Nine of the 53 projects are focused on herbicides and eight projects are focused on bio-control, suggesting that there is increasing attention being paid to non-herbicide weed control options. It is also notable that Prof. Martin's project has outcomes that may directly influence the direction of future weeds funding and research. More information on all of the current weeds projects is available from the RIRDC website (www.rirdc.gov.au).

The NSW Biennial Weeds Conference was held in July at Coff's Harbour. Over 250 people from a wide range of backgrounds in weed management attended the conference. The Society has recently taken a more active role in the coordination of these conferences, and it is pleasing to hear that quite a number of the conference delegates have joined the Society. Congratulations to Birgitte Verbeek, Tony Cook and Warwick Felton for their input as part of the NSW conference organising committee, and Birgitte and Tony for their efforts at the conference at the society's display. A full report on the conference can be found in this newsletter.

The Society also held a very successful seminar at Epping on "Environmental Weeds: Current Policies and Practices". Over 50 people attended the seminar and heard an impressive array of speakers at a most enjoyable and informative day. John Thorp delivered the keynote address, speaking on *The Australian Weeds Strategy - Weeds of National Significance and Funding Opportunities*. Many thanks must go to the dedicated and tireless effort made by Mike Barrett, Jim Swain and Lawrie Greenup to bring this event to fruition. Thanks also to Warwick Felton for editing the seminar proceedings. More details on this seminar can be found elsewhere in this newsletter.

As always, I encourage society members to contribute material to the newsletter, as this is the vehicle for disseminating information between members on weeds related matters.

Rex Stanton, President

Annual General Meeting 17 November 2011, Tamworth

Please note in your diary the date and place for this year's AGM. We are always looking for new committee members so if you are interested in being actively involved in the future of the Society contact the secretary

Alan Murphy secretary@nswweedsoc.org.au



Society News

Welcome to New Members

The President and Committee Members welcome the following new members to the Society:

Paul Sullivan – Tamworth
Peter Michael - Pappinbarra
Ben White – Port Macquarie
Royce Holtkamp - Tamworth
Jeremy Crocker - Coolamon
Scott Galbraith - Berry
John Tracey - Belgravia
Alen Urquhart - Urana
Peter Langdom - Canberra
Rod Ensbey - Grafton
Doug Campbell - Scone
Robert Ferguson - Temora
Adam Craig - Koorinal
George Hammond – Nelson Bay
Anthony Berry - Griffith
Brad Davis - Estella

Andrew Petroeschewsky - Grafton
Patrick Minogue – South Corowa
Rodney Anderson - Urana
Bronwen Wicks - Goulburn
Lee Amidy - Gunnedah
Neil Hibberson - Holbrook
Geoff Portbury - Jerilderie
Mark Asquith - Bellingen
Jonathan Lawson - Moree
Paul Marynissen – Watanobbi
James Browning - Armidale
Elissa van Oesterhout - Ulmarra
Annette Beer-Wagga Wagga
Rachel Swindel - Mt Victoria
Chris Dewhurst – South Windsor
Chris Slinger - Junee

16th NSW Weeds Conference 2011 Coffs Harbour



*The Hon. Katrina Hodgkinson
The Minister for Primary Industries
opening the NSW Weeds Conference*

It is pleasing to note that the recent 16th NSW Weeds Conference, held at Coffs Harbour in July was a resounding success. As a major sponsor of the event, the NSW Weed Society can be pleased with their contribution to the event.

Improved number of delegates at the conference was a sign that weed management in NSW has a bright future. Attendance numbers at the Conference was robust with 219 full registrations and 45 day registrations. This is a significant improvement compared to the conference two years ago. Feedback from the conference was extremely positive with 93% rating the Conference as excellent or good on a rating scale of Excellent, Good, Average, Poor and No Comment.

For the first time, a minister opened the conference. The Honourable Katrina Hodgkinson, Minister for Primary Industries and Small Business welcomed the large gathering. She noted the diversity of attendees, particularly at least one delegate from all Australian states and territories and a strong representation from her own departmental staff.

Delegates were kept well informed of new issues.



16th NSW Weeds Conference 2011 Coffs Harbour

Broad topics included; education needs, research needs and results, case studies, strategic weed management on a national, state and regional scale, legislation, herbicide resistance and community partnerships.

Apart from formal presentations, delegates had opportunity to interact with other participants. This is the cornerstone to successful conferences. Feedback and observation indicate that this aspect of conference success was encouraging.

Activities such trade displays, photographic competitions, mid conference excursions, awards night, poster presentations, various breakfasts, lunches, and dinners kept people enthused and upbeat. The venue at Pacific Bay Resort was a perfect back-drop for the event. The weather was fine and seemed rather mild compared to other frost-bitten parts of the country.

The awards night/dinner was a highlight for many. The Buerckner and Stevenson awards for excellence in weed management and control were the pinnacle moment of the night. As a sponsor of the awards, the NSW Weed Society was proud to present Les Tanner, Chief Weeds Officer from the Inverell Shire Council a \$500 prize. Congratulations Les 'Bingara' Tanner.

Chris Clausen, the Senior Weeds Officer at the Clarence Valley Council was presented with the Buerckner award, an excellent effort for his multi-faceted skills in weed management.

With the valuable assistance from the Coffs Harbour City Council, NSW department of Primary Industries and the conference organising committee, the conference operated smoothly. The NSW Weed Society also recognises the numerous gold, silver and bronze sponsors that provided financial support and trade displays. The committee hopes to support future conferences to ensure the future weed managers and various stakeholders get maximum value from their conference.

Tony Cook

16th NSW Weed Conference Organising Committee
NSW Weed Society Committee

Thanks to Birgitte Verbeek, Tony Cook and Warwick Felton for their input in to creating a very successful conference and for representing the interest of the New South Wales Weed Society. Birgitte and Tony were also representing the NSW Department of Primary Industries

16th NSW Weeds Conference 2011 Coffs Harbour

Attendance numbers at the Conference was good with 219 full registrations and 45 day registrations. Feedback from the conference was extremely positive with 93% rating the Conference as excellent or good on a rating scale of Excellent, Good, Average, Poor and No Comment. Comments included "Thanks for the great experience. Well planned and fro creating a fabulous networking opportunity. I look forward to future conferences" and "One of the best conferences I have attended". Fifty five Conference evaluation forms were received which equates to 25% of full registrations.

The NSW Weeds Society had a strong presence at the Conference promoting membership and involvement in the Society. Thirty two new members joined the Weeds Society at the Conference.

A question was added to the Conference Evaluation Form with regard to the Society. This was "The

Weed Society of NSW Inc. is having a greater role in the organisation of the NSW Weed Conference, sponsors a student travel award, the Buerckner and Stephenson awards and regularly organises weed seminars. Are you supportive of these initiatives? Are there other activities you'd like to see the society support?

Most importantly the feedback from this question will be discussed and addressed at the upcoming Weeds Society Executive meetings to ensure the Weed Society keeps track of contemporary needs of NSW weeds management professionals and the community.

Birgitte Verbeek

16th NSW Weed Conference Organising Committee
NSW Weed Society Committee



16th NSW Weeds Conference 2011 Coffs Harbour

Buerckner Award

Five nominations were received for the Buerckner Award:

Maria Edmonds Weed Officer, Cessnock City Council

Stephen McLeod Environmental Projects Coordinator, Maitland City Council

Brett Paddon Noxious Weeds Officer, Far North Coast Weeds

Les Tanner Chief Weeds Officer, Inverell Shire Council.

The winner of the 2011 Award was **Chris Clausen**.



Chris has been involved in weed control for over 12 years where he has developed a positive, calm and highly professional approach to his work.

His recent achievements include the adaptation of spray equipment to control water weeds, the development of a shrouded boom to minimise spray drift during broadleaf weed control, leading the rapid response to tropical soda apple in the Clarence Valley and delivering noxious weed extension to school groups.

His initiative and willingness to tackle any problem, and his ability to calmly negotiate conflict has won him the trust and respect of colleagues and landholders.

CONGRATULATIONS CHRIS & LES ON YOUR AWARDS

Stephenson Award

The 2011 Stephenson Award winner -**Leslie Tanner**.

Les is the Chief Weeds Officer, Inverell Shire Council. Les has already had his 52 years of work in the world of weeds recognised in his nomination for the Buerckner Award. He has also been nominated in the Stephenson Award illustrating the breadth of his recent contributions.

He has an infinite knowledge of his trade and is always willing to pass on information and assist those needing his help. He is passionate about biological control and its many benefits, and is well respected in the industry both by his peers and by landholders in his region. His commitment and contribution to weed management over his long career are unparalleled.



Les Tanner receiving award from Birgitte Verbeek

Other nominees were:

Robert Ferguson, Chairperson of the Western Riverina Noxious Weeds Advisory Group

Mark Daly, IT Manager, Liverpool Plains Shire Council,

Mike Whitney, Weeds Inspector, Liverpool Plains Shire Council

Kim Hignell, Vegetation and Pest Management Coordinator

Stephen McLeod, Environmental Projects Coordinator, Maitland City Council

Peter Schweitzer, Noxious Weed Officer, Far North Coast Weeds.

Les Tanner as a member of the Weed Society of NSW received \$500.00 to attend the next conference.



NSW Weed Society Environmental Weeds Seminar - Epping

Keynote Address (abstract)

The National Weeds Strategy – Weeds of National Significance (WoNS) and Funding Opportunities

John Thorp National Weeds Management Facilitator



John Thorp delivering the Keynote Address

Prior to the National Weeds Strategy (1997), now the Australian Weeds Strategy (AWS) since 2006, environmental weed management had limited funding. Implementation of Weeds of National Significance (WoNS) in 2000 resulted in both corporate and government support for the environment. The AWS links to a number of other national and state strategies and is a component of Australia's national biosecurity system.

The vision for the AWS is to ensure that *Australia's economic, environmental and social assets are secure from the impacts of weeds*. It provides a framework to establish consistent guidance for all parties and identifies priorities for weed management across the nation with the aim of minimising the impact of weeds on Australia's environmental, economic, and social assets.

The Australian Weeds Strategy is based on seven key principles:

1. Weed management is essential for the economy, environment, health, and amenity.
2. Combating weed problems is a shared responsibility.
3. Good science underpins development, monitoring, and review of management strategies.
4. Investment priorities require an informed risk management approach.
5. Prevention or early intervention are the most cost effective approaches for managing weeds.
6. Weed management requires coordination among all levels of government in partnership with industry, land and water managers and the community, regardless of tenure.
7. Building capacity across government, industry, land and water managers and the community is fundamental to effective weed management.

Three goals underpin strategic actions:

- 1: Prevent new weed problems**
- 2: Reduce the impact of existing priority weed problems**
- 3: Enhance Australia's capacity and commitment to solve weed problems**

Applying for Caring for our Country Funding

The Caring for our Country Business Plan 2011-12 requires proponents to talk to WoNS coordinators early in the process to ensure that proposals are consistent with the national strategic plan for each WoNS species, adopt nil-tenure weed management approaches, align with the AWS, and identify priority national assets such as threatened species and ecological communities.



NSW Weed Society Environmental Weeds Seminar - Epping

Keynote Address (abstract) Continued

Priorities for each WoNS species across Australia based on the 56 NRM regions can be viewed at: www.weeds.org.au/Wons_National_Priorities_by_NRM_Region_March-2011.xls. More extensive information for each WoNS species can be accessed through the species links at www.weeds.org.au. There are national management action maps for each WoNS species that have been published as part of the Caring for Our Country annual business plans.

Applicants are advised to consider the following:

1. Demonstrate links to AWS at www.weeds.org.au/publications/strategies/weed-strategy.html.
2. Link to Caring for our Country national priority areas and targets (described under Reducing the Impact of Weeds of National Significance under the Caring For Our Country Business Plan 2010-11, pp 47-49 www.nrm.gov.au/business-plan/10-11/).
3. Demonstrate links to the individual weeds national strategy and address priorities through the National Priority Framework.
4. Show how the project will provide input into national mapping.
5. Use www.weeds.org.au/docs/National_Core_Attributes_for_Weed-Mapping.pdf and use the preferred list of attributes for each WoNS if available.
6. Demonstrate the project is landscape scale and collaborating with other stakeholders and jurisdictions.

7. Demonstrate you have a long term possibility of success.

8. Aligned with National Best Practice and Management Guides.

Caring for our Country Community Action Grants target established local community-based organisations that are successfully delivering projects to support sustainable farming or protect and enhance the natural environment. This includes Landcare, Coastcare, 'friends-of' organisations and other local community-based groups. Community Action Grants support both established and emerging Indigenous organisations. Applications close 1 August 2011. Information is available at www.nrm.gov.au.

Sources of funds are available at <http://www.environment.nsw.gov.au/grants/envtrust.htm>.

The widespread establishment of groups targeting restoration of landscape pockets has brought a renewed emphasis on environmental weed management. In excess of 75% of community groups dealing with environmental issues are tackling weed problems.

John's contact details are:

Phone: (03) 6344 9657

Fax: (03) 6343 1877

Mobile: 0419 323 400 Email: jthorp@jta.com.au



*Warwick Felton
First session chair
Proceedings editor*



Tony Cook AV expert & speaker



Warwick Felton thanking Diane Campbell who spoke on the implementation of management plans



NSW Weed Society Environmental Weeds Seminar - Epping

Developing an Improved Management Program for Madeira Vine

Tony Cook Technical Specialist Weeds NSW DPI

Madiera vine (*Anredera cordifolia*) - see images front cover - is an aggressive weed on coastal riparian areas of northern NSW. It can survive as tubers, runners, and seed.



Madiera vine smothering native trees and shrubs

The current control options for NSW are listed in the proceedings. Listed, as well, are the details of the experiments undertaken to determine the best management strategy. All treatments were applied according to commercial standards, as stated on herbicide labels and made on healthy, actively growing vines.

Picloram/triclopyr ± aminopyralid formulations were highly effective on both juvenile and mature forms of Madeira vine and has many advantages over other treatments, namely;

- It is selective and safe to competitive monocots (grasses and rushes)
- Superior efficacy on juvenile vines at reduced dilution rates and kills the tubers attached to these vines.
- Can kill all sizes of Madeira vine tubers - other treatments had lower efficacy.
- Is translocated to aerial Madeira vine tubers following foliar spraying and dramatically reduces their viability.
- Reduced juvenile Madeira vine density by 99.6% over 4 years.
- Has residual active ingredients that may provide residual control.
- Potential to reduce rates in the field.

Suggested management plan: The key to successful long-term control of Madeira vine hinges upon the

persistent treatment of juvenile vines following effective killing of established vines. Control of established vines is generally completed successfully, using a modest range of options. Then the task of depleting the soil of tubers can commence.

Madiera vine tubers tend to persist 4 to 5 years. More regular spraying is required when treating Madeira vine due to faster growth rates. It is estimated that two to three foliar applications of herbicide are required per year to prevent vines getting too large. Therefore, Madeira vine is a weed that requires a great deal of effort due to the need to treat more frequently and for longer periods.

The preferred treatment is a foliar application of herbicide that contains picloram, triclopyr and possibly aminopyralid as their active ingredients. However, people may wish to select fluroxypyr or glyphosate as their herbicide, but are likely to get lower levels of control and will need to spray for more years. It would be prudent to have annual scans of riparian areas once vines density appears non-existent, as one established vine may develop into a significant infestation within a relatively short period of time. A small effort spent treating the occasional vine now is likely to prevent an enormous effort later.

Maintaining control programs to foliar treatment of small vines will be an efficient use of labour. It can be less demanding on staff compared to the physical exertion of cut stump or stem scrape applications. More infested ground can be covered and less herbicide is required each year as vine density reduces significantly with time.

It is recommended to treat upper catchment infestations first. These are a source of seeds/tubers for riparian areas downstream. A logistical problem is the difficult terrain to be traversed to access these weeds, and the shortage of resources to cover large areas.

Research funding provided by the Mid North Coast Weeds Advisory Committee. Valuable assistance from Terry Schmitzer, Paul O'Connor, Grant Taylor, James Browning and Jon Dadd is appreciated.

Email: tony.cook@industry.nsw.gov.au

Phone (w): (02) 6763 1250 Mobile: 0447 651 607



NSW Weed Society Environmental Weeds Seminar - Epping



Australian Government
Rural Industries Research and
Development Corporation

**RIRDC
Seminar
Sponsor**

New Weeds Website started

Welcome to the second edition of Weeds e-news, brought to you by the National Weeds and Productivity Research Program, which is being managed by the Rural Industries Research and Development Corporation (RIRDC).

A regular piece of feedback from the weeds community is the need for a comprehensive weeds website. In this digital age, the possibilities for the presentation of weeds information are endless and the development of a website which provides advice, maps, photos, research reports, blog forums and mobile apps is a big undertaking.

The development of such a full-service website could take several years. However, the first steps towards this long-term goal are now being taken.

Four internet-based weeds projects have been brought together by RIRDC as the beginnings of a new weeds website. When these project are complete, a new weeds website will bring together existing weed research, mapping systems and management approaches in an interactive environment.

Such a site will provide a solid foundation for the development of large-scale weeds website in the longer term.



Hon John Kerin AM
Chairman
RIRDC Weeds Advisory Committee



Seminar Sponsors
Jim Phimister Dow
Ken Moore RIRDC
Jonathan Pearson
ChemCert



Dr Carol Gibson



Belinda Mitterdorfer, Speaker
Jim Swain, Chair, afternoon session



Three relieved speakers at
the end of the day!
Tony Cook, Royce Holt-
kamp & Pete Turner



Diane Campbell, Steve
Pym & Sheila Woods



Janet Rannard, David Kuhle &
Nicola Booth at morning tea



Peter Michael, Society life member
& Jim Swain, Treasurer at the
reception desk

Thanks to the seminar sponsors

- ChemCert Australia
- Dow AgroSciences
- Rural Industries Research and Development Corporation
- Syngenta

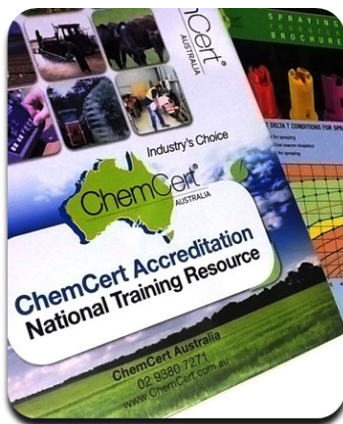


NSW Weed Society Environmental Weeds Seminar - Epping



ChemCert Australia - Seminar Sponsor

ChemCert has widened its scope from an agricultural weed focus to include environmental weeds, given Australia's collective taskforce on Weeds of National Significance (WONS). Courses can now be tailored to the needs of individual workplaces such as local councils and National Parks and Wildlife Services, recognising pest interactions where woody weeds can provide harbour and diet for vertebrate pests.



The ChemCert National Training Resource manual has likewise been updated to reflect the broadened demand for pesticide training from non-agricultural workplaces, echoing public demand for a more holistic and integrated approach to pest management. Chemical use is no longer always a stand-alone pest control method, but weighted against issues of sustainability (resistance management) and effect on non-target organisms, with greater consideration for the preservation of the natural enemies of pest species and the use of other pest control methods involving physical, biological and cultural techniques.

Environmental weeds and introduced vertebrate and invertebrate pest species do threaten Australia's biodiversity and this is further complicated by seemingly greater deviations from climatic norms. In order to provide both current and valid training, ChemCert has recruited trainers with industry backgrounds in Integrated Pest Management and Bush Regeneration for both Pest-led and Site-led management groups. Professional development of trainers now also includes significant sessions on meteorology in order to better mitigate spray drift events (via forecasting and observation) and timing of operations in long term bush regeneration techniques.

All programs require continuity for success, especially the control of environmental weeds, where a cessation of control funds and effort can see areas revert back to high weed pest populations in as little as one to two years, (the hard coated seed of Scotch Broom can remain viable for 80 years, fulfilling the saying "a year's seeding and a lifetime weeding."). The ChemCert Accreditation Program is refreshed every five years for similar reasons, in order to update pesticide users on the latest changes in Best Management Practice, technology and legislation and maintain some continuity of progress.

ChemCert contacts

In order to arrange a customised in-house training session contact Amanda on (02) 9380 7271 or email amanda@chemcert.com.au

For public courses in your area refer to www.chemcert.com.au and click on upcoming courses in the quicklink menu, or alternatively ring the enrolment center on 1800 444 228.

23rd Asian-Pacific Weed Science Society Conference

Weed Management in a Changing World

The Sebel Cairns, Queensland, Australia
25 – 30 September 2011



NSW Weed Society Environmental Weeds Seminar - Epping



Dow AgroSciences Seminar Sponsor

Dow AgroSciences-who are they?

Dow AgroSciences is global agribusiness company which supplies crop protection inputs to farmers and professional land managers.

In Australia, Dow AgroSciences is headquartered in Frenchs Forest, Sydney New South Wales.

The sales and marketing teams are supported by a strong Research and Development team which has two field research stations in key market geographies. The Breeza facility on the Liverpool plains has the capacity to conduct research in high production summer and winter cropping systems and the Halbury site in the mid North of South Australia is strategic for the southern cropping and wine growing regions. Dow AgroSciences has developed and introduced many iconic brands into the cereal and fallow markets (Verdict™, Lontrel™, Broadstrike™, Garlon™, Starane™). They are also significant players in the Horticultural markets with Lorsban™, Success™ and many other products.

It is however in the Woody Weed market that Dow AgroSciences has a clear leadership position. With over 50 years experience in Australian range and pasture markets and the broadest range of woody weed products Dow AgroSciences can rightly claim the title of “The Woody Weed Specialists”.

From its beginnings with a range of Tordon™- based herbicides in the late 1950's to new formulations with the addition of aminopyralid (Grazon™ Extra and Hotshot™), the Woody Weed Specialists have a solution for most of Australia's important woody weeds.



Spraying blackberries Image: Chris Love

Both graziers and professional land managers from local councils to National Parks look to Dow AgroSciences for solutions to noxious and woody weed management.

For further information on Dow AgroSciences, either ring customers services on toll free 1800 700 096 or visit www.dowagrosciences.com.au
™ Trademark of Dow AgroSciences

How well did the Environment Seminar go?

Program	4.2
Theme	4.6
Keynote Address	3.9
Morning presentations	4.2
Afternoon presentations	4.7
Proceedings	4.3
Venue	4.3
Lunch and teas	4.3
Value	4.0

Rating: 1 Poor to 5 Very Good
Number of returns: 32

Thanks go to the Weed Society of New South Wales committee members & others without whom this seminar wouldn't have been possible.

Mike Barrett, co-ordinator and chair
Jim Swain, treasurer, reception desk & chair
Lawrie Greenup, editor, photographer, reception desk
Warwick Felton, proceedings editor

Thanks to Michelle Felton for help with the design of the proceedings.

Thanks to the speakers for their excellent presentations, The Epping Club for a good venue and food & Kwik Kopy Hornsby for all the seminar's printing.



University Research Projects

Competitive interactions among bitou bush and native dune species in a future with less water

Tanya Mason and Kristine French University of Wollongong

Bitou bush (*Chrysanthemoides monilifera* ssp. *rotundata*), a South African shrub in the Asteraceae family, reduces native plant species' diversity and vegetation structural complexity and transforms dune ecosystems in coastal New South Wales. It is a Weed of National Significance and its invasion is a key threatening process under the NSW Threatened Species legislation. At the University of Wollongong, we have been researching the environmental impacts of bitou bush for over 15 years. We are now focusing on potential methods of community restoration and approaches for improving community resilience to bitou bush invasion.

As part of this research, we completed a large glasshouse experiment in 2010 which addressed competition among bitou bush and 17 native species under current and predicted future water availability. It is likely that reduced rainfall will be experienced in NSW coastal regions under future climate change, and while drying trends will undoubtedly affect both native and invader species, the effect on competitive interactions amongst natives and invading species is unclear.

Overall, we found that bitou was a strong competitor under both droughted and non droughted conditions. But the more interesting questions are whether any native species can significantly reduce the biomass of bitou (i.e. compete better) than another and whether this competition is stronger or weaker when there is less water available. Results from our glasshouse trials indicated that bitou bush may do better in the future as competition from native plants had less effect under droughted conditions.

While few native species were significant competitors with bitou bush, some shrubs were more effective in reducing growth of bitou bush than species with herbaceous or graminoid habits. In particular, sea berry saltbush (*Rhagodia candolleana*) was competitive with bitou bush under both droughted and non-droughted conditions. Interestingly two herb species, warrigal greens (*Tetragonia tetragonoides*) and pigface (*Carpobrotus glaucescens*) were also able to reduce bitou bush growth. These species are succulent

which often provides an advantage under water limitation. Grass species had minimal effect on bitou bush growth.



One of the native species (Pigface) growing in competition with bitou bush

Our research provides some insight into how competition may influence dune communities in the future when they are invaded by bitou bush. Other components of climate change such as nitrogen fertilization, temperature changes and carbon dioxide enrichment will be important synergistic factors to analyse in future research and may further improve our ability to predict weed distributions in a changing world.

The research was funded by Land and Water Australia and NSW Environmental Trust. Our UoW website will provide further information on this and related research:

www.uow.edu.au/science/biol/ich/weedecology

Tanya Mason is a Research Fellow at the University of Wollongong interested in plant ecology.

Kris French is a Professor at the University of Wollongong specializing in terrestrial ecology.



University Research Projects

Genes and trichomes can be used to identify silverleaf nightshade

Xiao Cheng Zhu PhD student

School of Agriculture and Wine Science, Charles Sturt University, Wagga Wagga

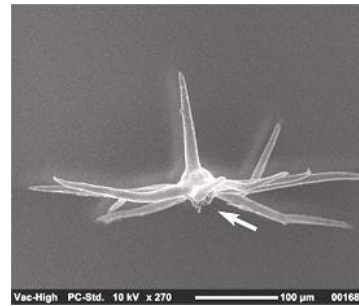
Silverleaf nightshade (*Solanum elaeagnifolium* Cav.) originated in America and is a serious summer-growing perennial weed in Australia. Silverleaf nightshade populations have considerable morphological variation from one location to another. It is often confused with a native *Solanum* species quena (*S. esuri-ale* Lindl.). Correct identification is critical for the successful management of silverleaf nightshade, as different biotypes could vary significantly in their response to control measures such as herbicides and biocontrol agents. Currently, differentiating between the two species is based on morphological characteristic such as stamen length, spine density or fruit shape. However, these morphological traits vary considerably in Australia silverleaf nightshade populations. Identification based solely on morphological traits can be unreliable. In order to improve the identification of silverleaf nightshade, DNA polymorphism and leaf micro-structure of silverleaf nightshade and quena were compared.

Molecular markers, such as simple sequence repeat (SSR), have been widely used in *Solanum* species to delineate species and cultivars. Thirteen cross-species SSR primer pairs were utilized to investigate the genetic distance between silverleaf nightshade and quena. These two species were separated at a level of about 10% similarity (completely different is 0%, while totally the same is 100%), which highlights the genetic distance between them. In addition, three unique SSR alleles were present in quena but not in silverleaf nightshade, which could be used to readily distinguish the two species.

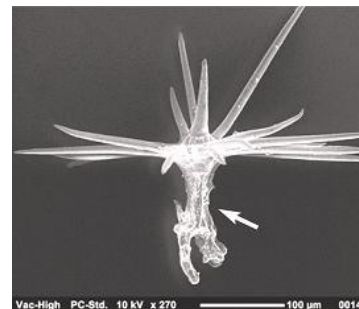
Trichomes, a stellate-shaped hair structure on the leaf surface, are considered as some of the most distinguishing features in *Solanum*. More than 200 trichomes on upper leaf surfaces of these two species were compared using a scanning electron microscope (SEM). This investigation showed that trichomes on the upper leaf surface of silverleaf nightshade had a deep "root" structure penetrating into the palisade mesophyll, while this structure was significantly shorter in quena - see images.

Both of the molecular and micro-morphological

methods delineated some diagnostic features. Combination of molecular phylogeny and SEM will considerably assist in the correct identification of silverleaf nightshade.



Quena trichome with shorter 'root' structure



Silverleaf nightshade trichome with deep 'root' structure

In conclusion, the study illustrates that silverleaf nightshade and quena are two genetically distinct species. However it is often difficult to distinguish them morphologically. The unique alleles found in quena and the significant difference of trichome structure will dramatically assist the correct identification of the two *Solanum* species.

Xiao Cheng Zhu commenced his PhD study on the 'Diversity of silverleaf nightshade (SLN) in Australia' in 2009 with funding from Charles Sturt University. His study aims to determine the genetic diversity of SLN and to understand the potential gene flow between SLN and quena. It will also assess whether SLN populations differ in their trichome density and other morphological traits. He is supervised by Prof Deidre Lemerle, Drs Rex Stanton, Hanwen Wu, Harsh Raman & Assoc Prof Geoff Burrows



Society News

Financial Report 1 October – 28 July 2011

For the period 1st October 2010 to the 28th July 2011 the society has shown a loss of \$11,576.65 which is due to the payment of \$15,000.00 made to the Coffs Harbour City Council as our commitment to the NSW Weeds Conference.

The NSW Weeds Conference was held in Coffs Harbour last week and a portion of the profit will be retained in the NSW Weeds Conference future fund which is being administered by this society.

The Environmental seminar showed held in Epping on the 27th July 2011 is expected to show a profit in excess of \$4,000.00. The final figure cannot be calculated until all accounts are submitted.

The society's financial year ends on the 30th September 2011.

Account/term deposit balances -as at 29th July 2011.

Club Cheque Account \$8551.90

Money Extra Cash Management \$1,357.90

Term Deposits

\$24,825.43– expires 24th September 2012 – 6.0%

\$27,331.05 – expires 24th January 2012 – 6.00%

\$11,430.98 - expires 24th January 2012 – 5.90%.

Membership.

As at 25th July 2011, 109 have renewed for 2011,

there has been 3 resignations; 13 have not renewed for 2010 and 2011 and were removed as members on the 1st July 2011 and 34 have yet to renew for 2011. We have obtained 33 new members as a result of the special offer made at the NSW Weeds Conference where membership for the remainder of 2011 was made available at the special rate of \$20.00.

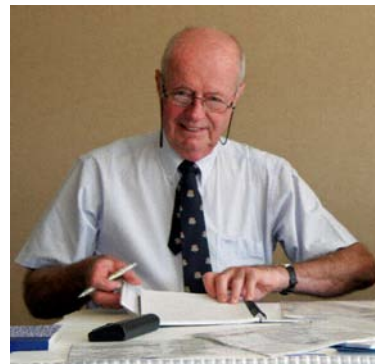
With 2 life members this gives a total membership of 173 after the removal of those overdue for 2 years.

Budget.

A budget for 2010-2011 has been prepared and shows that the society will show a loss of \$6,497.00 for the financial year which is from the 1st October 2010 to the 30th September 2011.

The loss is due primarily to the one off commitment made to the NSW Weeds Conference for 2011.

The budget has adopted a conservative approach in regards to returns from the NSW Weeds Conference and seminars.



Jim Swain, Hon Treasurer.
29th July 2011



18th Australasian Weeds Conference 2012

The Sebel and Citigate Albert Park,
Melbourne, Victoria, Australia
8 October – 11 October 2012

Developing Solutions to Evolving Weed Problems



Society News

Office Bearers for 2010/11

President

Rex Stanton [Wagga Wagga]

Vice President

Birgitte Verbeek [Tamworth]

Secretary

Alan Murphy [Glen Innes]

Treasurer

Jim Swain [Thornleigh]

Public Officer

Mike Barrett [Beecroft]

Committee Members

Newsletter Editor

Lawrie Greenup [Westleigh]

Assistant Newsletter Editor

Hanwen Wu [Wagga Wagga]

CAWS Delegates

Rex Stanton [Wagga Wagga]
Warwick Felton [Tamworth]

Committee

Phillip Blackmore [Armidale]
Tony Cook [Tamworth]
Warwick Felton [Tamworth]
Lawrie Greenup [Westleigh]
Deidre Lemerle [Wagga Wagga]
Brian Scarsbrick [[Dangar Island]
Hanwen Wu [Wagga Wagga]

Contact Details

Postal Address: Secretary
PO Box 438
WAHROONGA NSW 2067

Secretary: secretary@nswweedsoc.org.au

Treasurer: treasurer@nswweedsoc.org.au

Editor: editor@nswweedsoc.org.au

Website: www.nswweedsoc.org.au

Committee Meeting Dates 2011

- 11 February 2011
- 8 April 2011
- 10 June 2011
- 12 August 2011
- 14 October 2011
- 9 December 2011

Annual General Meeting 17 November 2011

'A Good Weed' copy deadlines

#56 Spring 30 September 2011
#57 Summer 30 November 2011

Membership costs (due 1st January each year) are:

Student \$20.00
Ordinary \$40.00

Membership forms are available on:
www.nswweedsoc.org.au

or from Secretary
PO Box 438
Wahroonga NSW 2076

Annual General Meeting & Dinner

Tamworth 17 November 2011



- 1.30 - 3.30 pm Weeds seminar and displays at the Tamworth Agricultural Institute Conference Centre.
3.30 - 4.00 pm Tea and coffee
4.00 - 5.00 pm Weed Society Annual General Meeting
Election of Office Bearers for 2012
6.30 - 10.00 pm AGM Dinner

If unable to deliver return to:

The Newsletter of
The Weed Society of New South Wales Inc.
PO Box 438
Wahroonga NSW 2076

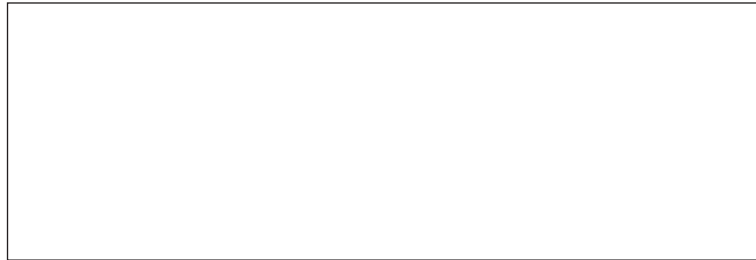
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