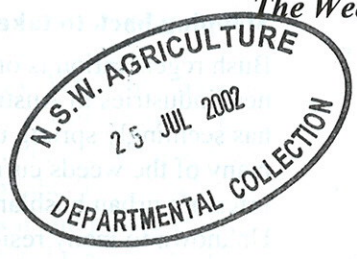


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A Good Weed



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Broadleaf privet *Ligustrum lucidum* (see page 5)

WEED SOCIETY EXECUTIVE

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Melinda Ierace
Toni Nugent
Luc Streit
Val Stubbs
Jim Swain
Gordon Tink
Birgitte Verbeek

NSW Agriculture, Orange Agricultural
Institute, Forest Road, Orange NSW 2800
Ph: (02) 6391 3800
Fax: (02) 6391 3899
dowlingp@agric.nsw.gov.au

Secretary: Leon Smith
8 Darwin Drive
Lapstone 2773
Ph/fax: (02) 4739 3564
nswweedsoc@bigpond.com.au

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GUEST EDITORIAL

Bushland regeneration

Jeff Burton

Stepping back to take a look

Bush regeneration is one of the new industries in Australia that has seemingly sprung up like many of the weeds currently infesting urban bushland. Unknown to many residents, over the past 20+ years, much has been achieved in the Sydney basin relating to natural resource management, and in particular, bushland regeneration. There is/are:

- bush regeneration courses designed and implemented,
- an industry professional association,
- companies specialising in bushland conservation,
- land management agencies employing specialist staff,
- many land managers and supporting volunteers.

Bush regeneration is a multi-million dollar investment in the future of our natural resources. What are some of the community perception barriers that are restricting the industry from achieving its potential and how can we add value to this investment?

“I love living here but when are you going to get rid of the weeds”

Funding for natural resource management has always seemed relatively low (from within the industry). But well placed votes by thousands of

amazing volunteers and concerned residents has started the surge that is gaining political recognition and dollars are starting to flow to bush regeneration programs. Community surveys consistently indicate that natural resource conservation should be a priority for land management agencies. In addition, moving to and living near bushland is considered a valuable asset when choosing a place to live. Bushland is considered to be a scenic, recreational, conservation and lifestyle asset, but only a relatively small percentage of the population is aware of bushland degradation, how it occurs and how they can easily contribute toward the health and preservation of their asset.

Goal

The snowball of community support has started and whilst residents generally recognise bushland as an asset the majority are unaware of the causes of degradation and how they can actively help conserve an asset they consider valuable. We need to inform residents that their asset is under threat from numerous causes that have serious consequences for the future.

The degradation of our natural resource asset is not just a problem for the responsible land management agency, it is a community issue that requires widespread community involvement and understanding. The weeds and subsequent degradation have been caused by cumulative impacts from urban development and the community has a

vital role to play in its restoration and the ongoing protection of their asset.

“Can’t you just come and do some bush regeneration?”

For the majority of Australians, bush regeneration generally refers to knocking down whatever vegetation you have started with, spraying what’s left and mass replanting native trees. For this reason it is often expected that bush regeneration is a rapid solution to a bushland weed problem and once it is done you can walk away and forget about it. While this may be the first step in revegetating a severely degraded landscape, it is a far cry from replacing the species, genetic and structural diversity required to sustain biodiversity in the long-term. It is generally not understood that bush regeneration is an intensive process that requires a long-term commitment of resources to assist the bushland to essentially recover from a weed ridden disease.

Goal

Inform people of the regeneration process, tell them that it is intensive and that results cannot be achieved overnight. In many cases the degradation and subsequent weed invasion has taken place over 50 or 100+ years, it is impossible to reverse it over a weekend. Everybody can play a role in the restoration process from joining a bushcare group, doing the right thing in their own garden or by voting for conservation funding.

“The nursery man said.....”

While some of the bushland weeds are declared noxious and

are being dealt with by local control authorities, there seems to be a constant flow of garden plants making their way onto environmental weeds lists. They are sneaking through (or over) fences, establishing in vacant niches at the edge of reserves, and before you know it they have penetrated deep into the bush and are rapidly making their way to the next waterway. While the nursery industry is well aware of these issues and is addressing them through labelling guidelines, education and policy etc, the industry (like every other industry) is essentially driven by consumer demand and marketing forces.

Goal

The customer must be informed of the plants weediness instead of its vigour and offered an attractive locally indigenous or ‘bushland safe’ alternative. Native plants need to be commercially available and encouraged to the public through the media. The public must want to buy them for their beauty and growth features as well as the environmental benefits. If market forces demand quality native plants, the nursery industry will naturally adjust to market forces.

“I’ve already got a native garden”

Well meaning gardeners, that want to do the right thing and create a native garden for beauty, habitat and lower water usage, often go to their local nursery and end up coming home with a variety of “non-local natives” that will thrive in their garden environment. Unfortunately many of these

become weeds in Sydney bushland, have the potential to cross-pollinate with local natives or affect native fauna. Some of these include Cootamundra wattle (*Acacia baileyana*), Orange wattle (*Acacia saligna*), Queensland silver wattle (*Acacia podalyriifolia*), Grevillea “Robin Gordon”, *Grevillea robusta*, etc. While the community have partially embraced natives and native gardens, unless it is done with responsible guidance using locally occurring natives we are essentially taking one step forward and two steps backward, creating longer term problems not to mention public confusion.

Goal

Ensure that a wide selection of local natives is commercially available and well publicised. Educate and clarify what is, and what is not, a local native. Publicise the beauty and hardiness of natives as better and more attractive alternatives than introduced species.

“But I’ve never heard of it”

Land management agencies are developing, circulating and spreading well produced and informative publications concerning their programs and how the community can assist, in addition to this, several television and radio stations are giving ‘air time’ to conservation issues. Despite the increased coverage it remains that a large proportion of the population is still unaware of programs to conserve biodiversity and what they can do about it. Are we preaching to the converted, and more importantly, how can we

spread the word further and initiate the desired response?

Goal

The terms 'bush regeneration' and 'bushcare' should be as common, well understood and highly regarded as 'salinity', 'greenhouse gas', 'blue green algae' and 'woodchip'. If you look at these issues, they have all gained their recognition through the media at considerable cost, but with fantastic results. Spread the word through the media, relate the importance of bushland health to a communities value with long term implications for everybody.

The Future

The future I believe looks good and I can only be optimistic regarding the long term security and health of our natural resources. Essentially we know:

- what to do
- how to do it
- what it costs
- the implications and costs of not doing it, and
- what help we require.

Natural Resource Managers and Volunteers are the unsung heroes in the conservation of remnant community bushland and hold the key in halting the degradation process, not just with their time but also their votes. In order to tip the balance back into the favour of our flora and fauna, more needs to be done and much of it lies in a change in behaviour and attitude by the wider community. The time invested by volunteers, contractors and professionals is too valuable to have somebody on the other side of the reserve dumping

garden clippings and planting environmental weeds along their bushland boundary. Even a small change in community attitude, support or participation will add value to the time already invested by volunteers and land managers.

While I don't have any quick fix solution to the problems, nor do I wish to ramble on about more money and staff being allocated for natural resource management (although it would certainly help), there are a number of things that can make the long term goals of bush regeneration a little easier to achieve.

From the examples outlined above, much of what we can do lies in developing and delivering a clear concise message free from misconception to the community, to improve their awareness and to initiate active support of bush regeneration. The bush regeneration industry has 'large scale' concepts, values and information that need to be, and can be, sold to the wider community, perhaps via 'large scale' media !

Large scale media attention has the potential to clarify the misconceptions and perhaps achieve enough community support and understanding to add value to every hour invested by a volunteer and every dollar invested by land managers. We don't need everybody to become a volunteer, but just being aware of the things that help protect our community asset like not dumping, having a responsible garden, being aware of the impacts on bushland and the healing process, will be a major step forward.

As anybody in the industry knows, there is something in this work that keeps us coming back, day after day, a value that we treasure and want to conserve, protect and improve. As the community become more aware their diminishing asset, we need to help them find what gives them that sense of ownership and protection. What buttons need pushing to initiate a passion for the conservation of their bushland asset? It will be different things for different people, but if each person could just identify with one feature of their bushland that gives them that warm fuzzy feeling all over, the huge job ahead of us would be much easier.

Jeff Burton

*NSW Agriculture and CRC
Weed Management Systems
Orange Agricultural Institute
Orange*

Our guest editorial this issue has been written by Jeff Burton, Communication Officer with the CRC. Jeff recently took up this position after gaining considerable experience in urban weed control working with Hornsby Shire Council. He is based at Orange Agricultural Institute.

TECHNICAL REPORTS

New herbicide permit for serrated tussock and glyphosate

Jim Dellow

Based on trial data conducted on the Southern Tablelands by New South Wales Agriculture ('Good Weed' No 19 p 5), a Permit has been issued by the National Registration Authority. The Permit (PER 2036) is in force to 31st December 2000.

Details of Permit (in brief)

Spot spray serrated tussock

- glyphosate 360g/L product - 1L product per 100 L water
- glyphosate 450 g/L product - 800 mL per 100 L water (plus wetting agent @ 160 mL/100L water)

Boom spray serrated tussock

- glyphosate 360 g/L product - 2.5 to 15L product per hectare
- glyphosate 450 g/L product - 2 to 12L product per hectare (plus wetting agent @200 mL/100L water)
- glyphosate 490 g/L product - 1.8 to 11L product per hectare

For full details of use pattern and critical comments, a copy of the full Permit (PER 2036) may be obtained from the National Registration Authority or New South Wales Agriculture.

Jim Dellow
NSW Agriculture
Orange

Privet - some aspects on human health and seed banks

Jim Dellow

In the latest edition of "Plant Protection Quarterly" Vol. 14 (4) 1999. John Swarbrick *et al.* review the biology of two species of privet *Ligustrum lucidum* and *Ligustrum sinense*. The following brief extracts are on aspects of the plants' seed physiology, germination and soil seed banks and human health problems associated with hay fever and asthma.

(a) *Seed bank*

Privet seed bank of 292 to 557 seeds m⁻² have been observed in Sydney soils. Anecdotal observation suggests that the seed bank of Chinese privet in moist soil decreases rapidly after one year. Good germination of both species has been observed after dry storing seed in the laboratory for two years. Refrigerated broadleaf privet seeds may remain viable for up to two years, although similarly stored Chinese privet seeds lost viability after the first year. Further studies indicated broadleaf privet seeds mostly germinated within a year of deposition, although some may germinate after two years.

(b) *Human health*

Both species have been implicated with allergic reactions leading to hay fever and asthma, but this is difficult to prove. The pollen of both privet species is adhesive and mainly

transported by insects, and is unlikely to be present as free-floating grains in the air in sufficient quantities to cause allergic reactions. The review points out that plants of the *Oleaceae* family are insect pollinated and have no wind borne pollen. It is contended that the association of privet with hay fever and asthma is due to mistaken identity brought on by the showy and notably smelly flowers occurring at the same time as less conspicuous but more highly allergic grasses.

The review quotes Dr Dianna Bass as believing the pollen of the two privet species is not strongly allergenic, but a cross-reactivity occurs and grass sensitive people may also become sensitive to the pollen of Chinese privet. Since the pollen is seldom air-borne, it is suggested that significant privet pollen allergy is unlikely. Dr Bass further suggests it may be the perfume of privet flowers which already sensitised people find irritating rather than the pollen.

Finally, Dr Bass suggests to cover all eventualities, all privet species should be excluded from low allergen gardens.

Jim Dellow
NSW Agriculture
Orange

Reference: J.T. Swarbrick, S.M. Timmins and K.M. Bullen. Review "The Biology of Australian Weeds. 36. *Ligustrum lucidum* Aiton and *Ligustrum sinense* Laur. Plant Protection Quarterly Vol. 14(4) 1999 pp. 121-130.

Survey of herbicide resistant weeds

Ian Heap

Twenty three weed species are resistant to herbicides in Australia. There are over 200 resistant biotypes worldwide (45 countries). Ian Heap is currently updating his worldwide survey of herbicide resistant weeds. The following list summarises the current situation in Australia and when resistance first appeared.

| | SPECIES | COMMON NAME | HERBICIDE | GROUP | FIRST YEAR |
|----|---------------------------------|----------------------|-----------------------------------|-------|------------|
| 1 | <i>Arctotheca calendula</i> | Capeweed | diquat | L | 1986 |
| 2 | <i>Avena fatua</i> | Wild Oat | diclofop-methyl | A | 1985 |
| 3 | <i>Avena sterilis</i> | Wild Oat | diclofop-methyl | A | 1989 |
| 4 | <i>Brassica tournefortii</i> | Wild Turnip | chlorsulfuron | B | 1992 |
| 5 | <i>Bromus diandrus</i> | Great Brome | haloxyfop-R | A | 2000 |
| 6 | <i>Cyperus difformis</i> | Dirty Dora | bensulfuron-methyl | B | 1994 |
| 7 | <i>Damasonium minus</i> | Starfruit | bensulfuron-methyl | B | 1994 |
| 8 | <i>Digitaria sanguinalis</i> | Summer Grass | fluazifop-p-butyl | A | 1993 |
| 9 | <i>Fallopia convolvulus</i> | Black Bindweed | chlorsulfuron | B | 1993 |
| 10 | <i>Hordeum glaucum</i> | Barley Grass | paraquat | L | 1982 |
| 11 | <i>Hordeum leporinum</i> | Barley Grass | paraquat | L | 1988 |
| 12 | <i>Lactuca serriola</i> | Prickly Lettuce | triasulfuron | B | 1994 |
| 13 | <i>Lolium rigidum</i> | Annual Ryegrass | diclofop-methyl | A | 1982 |
| 14 | <i>Lolium rigidum</i> | Annual Ryegrass | chlorsulfuron, metsulfuron-methyl | B | 1984 |
| 15 | <i>Lolium rigidum</i> | Annual Ryegrass | simazine | C | 1988 |
| 16 | <i>Lolium rigidum</i> | Annual Ryegrass | amitrole | F | 1988 |
| 17 | <i>Lolium rigidum</i> | Annual Ryegrass | glyphosate | M | 1996 |
| 18 | <i>Lolium rigidum</i> | Annual Ryegrass | glyphosate | M | 1998 |
| 19 | <i>Lolium rigidum</i> | Annual Ryegrass | trifluralin | D | 1984 |
| 20 | <i>Lolium rigidum</i> | Annual Ryegrass | metolachlor | K | 1984 |
| 21 | <i>Phalaris paradoxa</i> | Annual Phalaris | Fops | A | 1997 |
| 22 | <i>Raphanus raphanistrum</i> | Wild Radish | chlorsulfuron | B | 1997 |
| 23 | <i>Rapistrum rugosum</i> | Turnip Weed | chlorsulfuron | B | 1996 |
| 24 | <i>Sagittaria montevidensis</i> | Arrowhead | bensulfuron-methyl | B | 1994 |
| 25 | <i>Sinapis arvensis</i> | Charlock | SU's | B | 1990 |
| 26 | <i>Sisymbrium orientale</i> | Indian Hedge Mustard | chlorsulfuron, metosulam | B | 1990 |
| 27 | <i>Sisymbrium thellungii</i> | African Turnip Weed | chlorsulfuron | B | 1996 |
| 28 | <i>Sonchus oleraceus</i> | Sowthistle | chlorsulfuron | B | 1990 |
| 29 | <i>Urochloa panicoides</i> | Liverseed Grass | atrazine | C | 1996 |
| 30 | <i>Vulpia bromoides</i> | Silvergrass, Vulpia | paraquat | L | 1990 |

Dr Ian Heap (Corvallis, Oregon, USA) has posted the "International Survey of Herbicide Resistant Weeds" on www.weedscience.com, which lists all herbicide resistant occurrences worldwide.

Summarised by Jim Dellow, NSW Agriculture, Orange

UPDATE ON FLUPROPANATE

As reported by Dr Malcolm Campbell in his article in the February issue of A Good Weed, a great deal of work has been put into producing a replacement herbicide for Frenock® which is now out of production. The latest news is

that the National Registration Authority has given approval for the production of a replacement flupropanate which will be marketed under the name Taskforce®. Formal registration procedures are now being processed. More

information should be available by next issue of A Good Weed.

Bob Trounce
NSW Agriculture

Proposed safe grazing management strategy for the control of St John's wort

Chris Bourke

St John's wort is a noxious weed that is potentially poisonous to grazing animals. Recent research carried out by the CRC Weeds - NSW Agriculture at Orange has been directed at determining times of the year when the poison in wort is at its lowest level, as well as determining how much of this poison sheep can tolerate before it will affect their health and well being. The guidelines that follow are drawn from the findings of this investigation so far. They are a suggested approach for the relatively safe grazing of this plant and in addition, are designed around the use of sheep as a cheap form of wort weed control in non-arable hill country. Goats could also be used, but cattle are NOT recommended.

1. Identify the wort to be grazed; is it a broadleaf type or a narrowleaf type?
2. Use Merino sheep, preferably from a fine (<20 microns) or super fine (<17 microns) bloodline
3. The sheep must have at least four months wool growth cover
4. The sheep must be adult wethers or dry, non-pregnant ewes
5. Use a high stocking rate during the period of wort grazing
6. For broadleaf wort infestations, start grazing on 1st May and continue

grazing until the 14th October

7. For narrowleaf wort infestations, start grazing on 1st July and continue grazing until the 14th September
8. In subsequent years, as less and less wort remains, grazing can gradually be increased by starting at an earlier date and ceasing at a later date. However, once the new spring flower spike shoots reach a height of 5-10 cm, move the sheep off the wort otherwise poisoning may occur
9. Repeat this process every year and try to replace the diminishing wort infestation with more appropriate pasture species
10. If possible, fence off very heavy wort infestations so that very heavy stocking rates can be used during the safe grazing period
11. If possible, make sure sheep grazing wort have easy access to good shade, even during the winter months
12. Never put recently shorn sheep onto wort pastures
13. Never put lambs or weaners onto wort pastures
14. Never put pregnant or lactating ewes onto wort pastures
15. Never graze wort infestations whilst they are flowering or forming seed capsules

Chris Bourke
NSW Agriculture & CRC Weed Management Systems
Orange NSW

extracted from Grassland Society of NSW Vol 15 No 2

Recent weed incursions

Bob Trounce

All members would be aware that there is a strict screening process for the importation and sale of plants, supervised by the Australian Quarantine and Inspection Service (AQIS). In spite of this, some prohibited plants still appear in our nurseries and gardens.

A recent threat has been identified by CSIRO and NSW Agriculture officers where the prohibited plant Orange hawkweed (*Hieracium aurantiacum*) was discovered for sale. Other plants found have been the knapweeds (*Centaurea maculosa* and *Centaurea nigra*) related to the declared noxious weed, star thistle. Procedures are now in place to have these additional species declared statewide to prevent any further distribution of these plants by propagation and sale.

Two plants from Queensland which have also been recognised as a threat to New South Wales are *Ardisia crenata* and members of the *Miconia* genus.

Bob Trounce
NSW Agriculture
Orange

NEW MEMBERS

- Australian Association of Bush Regenerators
- Scott Vaessen

TRAVEL REPORT

Visit to Australia and report on current weed research on the Galapagos Islands

Mark Gardener

With the financial help of the New South Wales Weed Society I attended the 12th Australian Weeds Conference in Tasmania (12-16 September 1999) I gave two papers- "Chilean needle grass (*Nassella neesiana*) – what we know and where to next?" and "Control of introduced plants in the Galapagos Islands". I also presented talks on weed problems in the Galapagos at the Keith Turnbull Research Institute, to the New South Wales Weed Society in Sydney and at the University of New England in Armidale. I have written a summary of the progress of my work in the Galapagos and this is the subject of the report. Our work is funded by various organisations including the Keidanren Nature Conservation Fund Japan, Monsanto USA, The Worthington Foundation USA, the United Nations Foundation and other sources. We are expanding our program with a six year grant from the Global Environment Fund in 2001.

Currently we have several main focuses:

1) **Ecology of key introduced plant species and their interaction with native and agricultural species.** There is an ongoing project

investigating the ecology (reproduction, dispersal, seedbank dynamics) and control of *Rubus niveus* (blackberry) in Santa Cruz and San Cristobal Islands. In these two islands this plant infests many thousands of hectares in national park and agricultural land. Its distribution is still limited in Isabela Island where we hope to eradicate it (see below). Also a project investigating the ecology and control of *Cinchona pubescens* (quinine) is currently underway. This information will form part of the base necessary for its control/eradication in Santa Cruz.

2) **Restoration of native vegetation invaded by introduced plant species.**

This is a new area of research at the Charles Darwin Research Station, and a pioneer project looking at restoration of areas invaded by *Pennisetum purpureum* (elephant grass) has just been completed. Several methods of control, and resowing of native species were investigated and it appears that the most recently infested areas, which still have a residual seedbank, showed the best regeneration. In the near future, experiments will be set up to determine the best

methods to restore highland vegetation in San Cristobal Island invaded by *Rubus niveus*, *Psidium guajava* (guava) and *Furcraea cubensis* (hemp).

3) **Eradication of introduced species which still have limited distributions.**

The object of this project is to completely eradicate a number of introduced plant species that are known from other parts of the world to be seriously invasive but currently have a limited distribution or have not yet escaped from cultivation in Galapagos. Examples of possible plants include *Aristolochia odoratissima* (Dutchman's pipe), *Bryophyllum* sp. (mother of millions), *Urochloa mutica* (Para grass) *Citharexylum gentryi* (timber tree), *Dalechampia scandens*, *Eichhornia crassipes* (water hyacinth) *Leucaena leucocephala* (leucaena), *Mimosa pigra* (giant sensitive plant), *Pueraria phaseoloides* (tropical kudzu), *Rubus adenotrichos* (blackberry), *Rubus glaucus* and *Rubus niveus* in Isabela island. This project will be managed in collaboration with the Galapagos National Park Service.

4) **Eradication of a well-established introduced plant with extensive distribution.** No well-established introduced plant has yet been completely eradicated from the archipelago. As a first example of eradication of a

well-established invasive plant, we propose *Cinchona pubescens* (= *C. succirubra*). This species merits high priority for the following reasons: it is only present on Santa Cruz island (about 5,000 ha); it is invading a variety of native vegetation zones (especially *Scalesia*, *Miconia*, Fern-sedge) and farmland; it is causing apparently large changes in native community structure including shading out native vegetation types; it is a highly visible, easily identified tree; it is readily controlled by a combination of manual and chemical techniques (herbicide trials in progress - see below); and is widely known as an invasive species among the local communities in Galapagos. As the first successful plant eradication, it would have a huge effect on morale amongst land managers and conservationists.

5) Mapping and databasing introduced plants.

Currently, a student is surveying the farms of Santa Cruz island to map distribution of previously unreported species. Since farms often are the source of future invasive plants, this program is tied in with the early eradication program. Also, maps are being made of the most invasive plants to help determine rates of spread and potential distributions. This information can be used to prioritise action plans.

6) Control trials. We are developing chemical control methods for the most widespread invasive plant species with the objective of deriving an effective, cheap, low effort, single application which results in minimal damage to the surrounding environment (see paper in 12th Australian Weeds Conference Proceedings p 396). Currently, we have control trials on *Cedrela odorata* (Cuban cedar), *Cestrum auriculatum*, *Cinchona pubescens*, *Cordia alliodora*, *Kalanchoe pinnata* (air plant), *Lantana camara* (lantana), *Psidium guajava* (guava), *Rubus niveus*, *Syzygium jambos* (rose apple). These results will be used to develop a control manual and the most successful methods will be used in large scale demonstration plots. An explanation of methods etc. is in the Proceedings. I have described the most successful treatments for each species: *Cedrela odorata*- hack and squirt application of 50% Tordon 22K (excellent); *Cestrum auriculatum*- hack and squirt application of 100% Roundup (poor because of regrowth); *Cinchona pubescens*- hack and squirt application of 100% Garlon 3A (good but some survivors); *Cordia alliodora*- hack and squirt application of 100% Roundup (poor because of regrowth); *Kalanchoe pinnata* foliar application of 5% Roundup (good but needs further treatment);

Lantana camara- basal bark application of 30% Garlon 4 (good but whole stem needs treatment); *Psidium guajava*- basal bark application of 20% Garlon 4 (excellent); *Rubus niveus*- basal bark application of 15% Garlon 4 or foliar application of 2.5% Roundup (excellent); *Syzygium jambos*- hack and squirt application of 50% Tordon 22K (excellent).

7) Control and Identification manual.

Ms. Ursula Taylor, a member of the New South Wales Weed Society, has worked in the Galapagos, helping to establish a control and identification manual for the most serious weeds. This information will be a resource for farmers and park guards.

8) Large scale control demonstrations. Using successful results from the above control trials, several large scale (up to 10 ha) demonstration plots for chemical and manual control will be established. This includes a large trial using triclopyr ester (e.g. Garlon 4) mixed with diesel to treat *Psidium guajava* in Isabela Island and plots using different chemicals and application techniques for the control of *Cinchona pubescens* in Santa Cruz. In the agricultural zone, a 4 ha area will be fenced off so that high densities of goats can be used to reduce the population of *Rubus niveus*, with the aim of

replacing with pasture species.

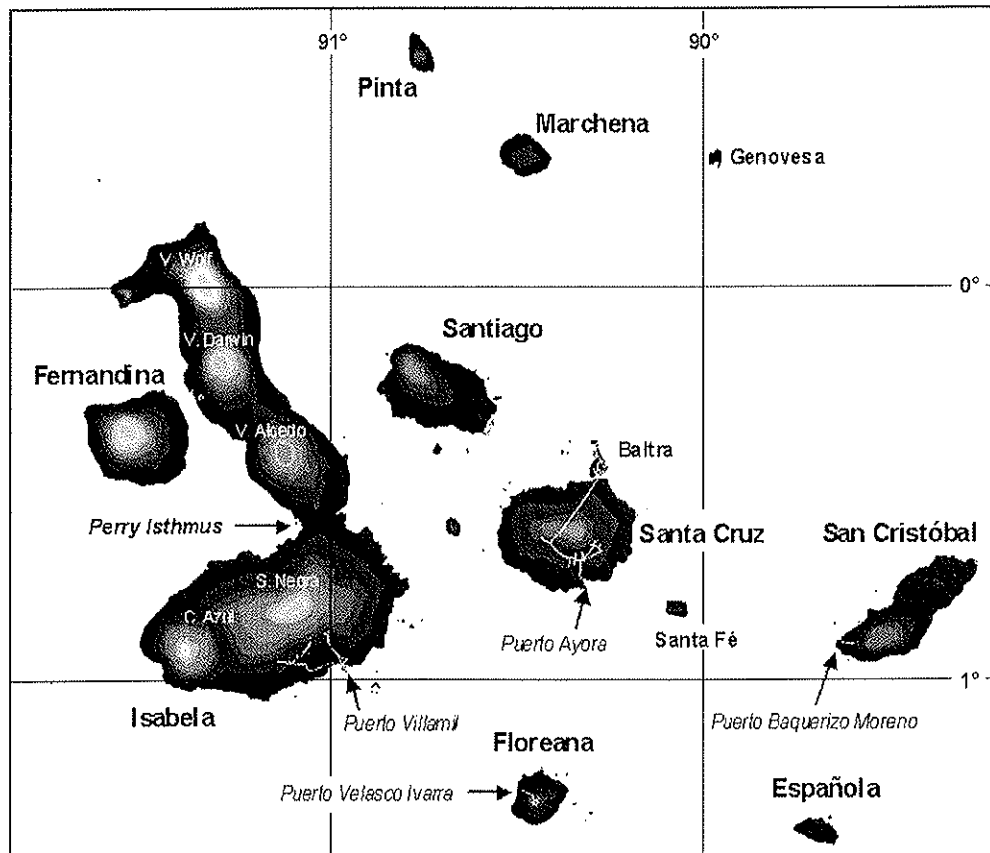
- 9) **Communication and collaboration.** Currently, we are employing a manager in the Galapagos National Park Service (GNPS) to facilitate better transfer of information between the Charles Darwin Research Station (CDRS) and the GNPS. The GNPS is a government body and is responsible for all management activities in the national park. The CDRS is a non-government research organisation and

our role is to provide information to GNPS on more effective weed management practices. This manager will also help prioritise the park's introduced plant control program. In 2000, we are also planning more field days for farmers and training days for park guards.

In February, I presented a paper at the 40th Weed Science Society of America meeting in Toronto entitled "Saving the Galapagos Islands- collaboration and partnership

in weed management". The purpose of this paper is to invite the scientific community to participate in long term research in all aspects of weed management in the Galapagos. I would like to extend this invitation to all the members in the New South Wales Weeds Society.

*Dr Mark Gardener
Area de Plantas e Invertebrados
Estación Científica Charles Darwin
Casilla 17-01-3891
Quito Ecuador
markg@fcdarwin.org.ec*



Report on Second World Congress on Allelopathy

Jim Pratley

The Congress was held at Lakehead University, Canada, in August 1999. One of the major challenges was the travel program where, with aircraft leaving late, all connections were missed and missed again. Fifty-six hours later, Lakehead was found.

The papers at the Congress were a mixture of very exciting and uninspiring. What was clear was the substantial progress being made in some areas with understanding, identifying and utilising allelochemicals.

The most advanced work is that of Dr Robert Dilday and his colleagues in Arkansas with rice and that of Dr Marie Olofsdotter and her colleagues from IRRI in the Philippines. Following extensive screening of rice accessions, Dilday had demonstrated in the field the capability of particular rice varieties to control duckweed, a major weed in their rice crops. Their work also showed that allelopathy was heritable (heritability of about 0.68) and probably polygenic in nature. Olofsdotter indicated that phenolics were not responsible for the allelopathy in rice.

The second plant with advanced research was the work on sorghum by Dr Leslie Weston of Cornell University. She and her co-workers have worked on sorgoleone which is released in large quantities shortly after germination. Ultrastructure studies suggest

that root exudates are produced and released by root hairs.

Three significant Australian contributors added value to the Proceedings. Dr Rick Willis from Melbourne University gave a comprehensive review of the history of allelopathy explaining in large part why allelopathy has had such a poor professional image. It is to be hoped that his paper is published for all to read and understand. Dr Scott Matner presented an excellent paper which showed that perennial ryegrass, when infected with rust, exuded allelochemicals that inhibited the associated white clover from out-competing the grass. Mr Hanwen Wu also gave an excellent presentation on his PhD work at Charles Sturt University where he has been investigating the allelopathic capability of seedlings of wheat varieties to inhibit the development of annual ryegrass.

A paper by Dr Steve Schmidt, University of Colorado, suggested that allelochemicals would not build up to any extent in the soil. He indicated that even very toxic chemicals tend to be less toxic in soil because of slow diffusion rates from the site of release to the site of uptake, thereby allowing microbial populations to break such compounds down. Professor Udo Blum, North Carolina State, has indicated that phenolics become more of a problem in soils where pH is more acidic.

On the final day, there was a forum to discuss the status of allelopathy. Previously in the

Conference, Dr Andrew Watkinson, UK, challenged allelopathists to prove conclusively that allelopathy did exist. At the forum, a clear distinction was made between phytotoxicity and allelopathy. The former was represented by many papers where plant material was ground up and plant toxins demonstrated usually on obscure test species.

Allelopathy was the natural production of toxins which has impact on some associated species in the field.

Dr John Romeo, co-editor of *Chemical Ecology*, indicated that the *Journal* would no longer accept papers which demonstrated that ground up plant material produced a toxin to, for example, lettuce. There was a clear need to demonstrate that allelopathy did in fact occur in the field and there needed to be associated chemical analysis undertaken showing the relationships.

In summary, there were some good papers that answered the challenge. There were many, however, which reinforced the sceptical view put forward by Andrew Watkinson.

This was the first "dry" conference I had attended. The Canadian campus did not allow alcohol and there was not a watering hole within walking distance – how dedicated were we? The Conference Dinner was held off-campus, allowing us to sample Canadian brewing technology and grape treading outcomes.

For my sins, I am the Australasian contact for the International Allelopathy

Society. We at CSU are considering holding a National Conference in mid-2000 ("The Allelopathy Olympiad") and would be interested in hearing from anyone interested in attending. It won't be dry.

*Jim Pratley
Charles Sturt University
Wagga Wagga*

NEW SPONSOR

The Weed Society welcomes a new sponsor to this issue of "A Good Weed".

Bayer Australia Ltd has joined with Luhrmann Environment Management Pty Ltd, Dow AgroSciences Australia Ltd and Novartis to enable us to produce this newsletter for members. Our thanks to Bayer for their support.

CAWSS REPORT

Summary of the CAWSS Meeting held in Hobart on 13 September 1999 on the occasion of the Twelfth Australian Weeds Conference

This is a very short summary of the main points discussed at the meeting.

- A Northern Territory Weeds Society is in its initial start-up phase; CAWSS welcomes this development and will support the setting up of the Society with a start-up grant of \$1,000.

- CAWSS handbook of plants of economic importance: The lists are almost complete. R Shepherd and B Richardson will cross check the common and scientific names, as there are a few issues with these.
- Australian Weeds Database: \$10,000 was allocated for the development of a pilot system.
- Liaison between CAWSS and the Nursery Industry Association: It was proposed that B Richardson and K Blood write to the NIA and Weeds CRC and express concern at the lack of progress in finalising a draft strategy.
- A special executive meeting on the 12th of September reviewed the SWOT analyses undertaken by the State societies. Queensland is to develop a business plan, with help from anyone else interested.
- A proposed joint meeting with the Weed Science Society of America was (unfortunately) knocked back by a majority of the delegates.
- Western Australia was successful in its bid for the venue of the next Australian Weeds Conference.
- South Australian Weedies have decided to secede from the Crop Science Society and form a South Australian Weed Society. This society was formed with the proceeds from the Weed Risk Assessment Workshop.
- CAWSS acknowledged the valued service provided by Leon Smith over the past 17 years (Leon recently retired as the NSW CAWSS delegate).

- Office bearers: President: Bruce Wilson (Qld), Vice-President: Mark Boersma (Tas), Secretary/Treasurer: Salvo Vitelli (Qld).

ADVERTISE YOUR SOCIETY

To keep the Weed Society membership strong, it is necessary to encourage new members to join, to replace those who retire from membership from time to time.

There may be people you know or colleagues you work with, who would benefit by joining the society.

To help you spread the word about the benefits and activities of the society, a colour poster is available in A3 size to place on notice boards or other prominent display areas.

To obtain a poster, contact the Secretary or other executive officer. The poster is also available through our website <http://nb.au.com/nswweedsoc>

TRAVEL STUDY GRANTS FOR 2000/2001

Applications are invited for Study Grants, funded by the Weed Society, to financially assist individuals to attend conferences or to travel on specific interstate or overseas study tours. Grants are for the period from 1 July 2000 to 30 June 2001, and must be

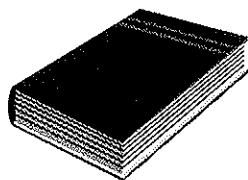
taken up during the stated period.

The grant is open to persons over 18 years of age who are involved with weed research, extension, regulation or practice. Studies of limited interest to the Society will not be considered. Applications will only be considered from persons who reside in NSW or the ACT.

Members of the Society may be given preference. Rarely will the grant meet full expenses of travel so applicants must arrange additional funds from other sources. Applicants attending conferences are expected to contribute to the conference.

Grantees are expected to return to service within NSW/ACT. They will be required to submit a succinct written report for publication in this newsletter soon after returning to duty and/or pass on the results of the assignment to other workers in an appropriate manner, e.g. seminar or meeting.

Applications are to be forwarded no later than 31 March 2001 to: The Secretary, The Weed Society of New South Wales Inc., PO Box 438, WAHROONGA NSW 2076. Application forms are available from the Society by telephoning Leon Smith (02) 4739 3564.



OTHER 'GOOD READS'

A Census of the Vascular Plants of Victoria

6th Edition. H.H. Ross, 2000. Royal Botanic Gardens, South Yarra. 265 pp., spiral bound. \$30 + \$10 post & handling from Royal Botanic Gardens Bookshop, Birdwood Ave., South Yarra, 3141 or \$30 + \$5 p&h from NRE Info Centre.

If you need to know the correct botanical name for a native or naturalised plant in Victoria, this is the book! The *Census* lists the names of all the native and naturalised vascular plants (not algae, fungi, lichens, mosses, liverworts) recognised as occurring in Victoria as at mid-January 2000. No common names, no descriptions, no illustrations, just lists of names, the authors of those names and reference to the original publication.

Willow Management for Australian Rivers

Special issue of Natural Resource Management Journal, December 1999.

Available from the Australian Association of Natural Resource Management for \$5 including postage and packaging. Contact: Baden Willians, ph/fax: 02 62474137, email: badenw@ozemail.com.au

Feral Future. The Untold Story of Australia's Exotic Invaders.

Tim Low, Viking (Penguin), 380 pp. ISBN 0670 88456 0 \$24.95.

Flora of Victoria Volume 4. Dicotyledons: Cornaceae to Asteraceae.

N G Walsh and T J Entwistle, National Herbarium of Victoria, Royal Botanic Gardens Melbourne, Inkata Press, Melbourne, 1999. ISBN 0 409 30853 6 \$325.00. Available from the NRE Information Centre.

Natural Resource Monitoring Guide. A Practical Guide for Detecting Change Occurring at the Property or Catchment Level.

Compiled by Max Smith, Department of Natural Resources, Qld, 154 pp., spiral bound. ISBN 07242 74440 5 \$15.00 from the NRE Information Centre.

Host Specificity Testing in Australasia: Towards Improved Assays for Biological Control.

Papers from the "Introduction of exotic biocontrol agents - recommendations on host specificity testing procedures in Australasia's workshop, Brisbane, October 1998. Edited by T M Withers, L Barton Browne and J Stanley. Department of Natural Resources, Qld, 1999, 104 pp. ISBN 0 7345 16169. \$30 + \$4 post and handling. Scientific Publishing, Natural Sciences Precinct, A Block, 80 Meiers Rd, Indooroopilly, Qld, 4068.

Tooth and Nail: The Story of the Rabbit in Australia.

Brian Coman, Text Publishing, Melbourne, 1999. 241 pages. ISBN 1876485 08 6 \$24.95 from the NRE Information Centre.

Tasmanian Bushcare Toolkit

1999. \$35 including postage and handling from the Mail House, phone 03 6272 5526, fax 03 6273 3655, email mailhouse@oakenterprises.com.au.

This comprises a set of native vegetation management materials that provides landowners, community groups and extension staff with a comprehensive guide to the management and conservation of native bush.

COMING EVENTS**2000**

August 17

Weed Society NSW, Seminar on Weed Management 2000

Venue: Hawkesbury Conference Centre, University of Sydney, Richmond, NSW.
Contact: Mike Hood
Tel: (02) 9439 9501
email: agrisyd@ozemail.com.au
Further details and program on website
<http://nb.au.com/nswweedsoc>

November 9

Weed Society NSW, Annual Dinner and AGM

North Ryde RSL and Community Club
Speaker: Dr Richard Groves.
Further details and program on website
<http://nb.au.com/nswweedsoc>

2001

January 28 - February 1

10th Australian Agronomy Conference

Venue: Wrest Point Hotel Casino Convention Centre
Hobart Tasmania

February 11-15

Weed Science Society of America

Venue: Holiday Inn
4 Seasons Hotel Greensboro
NC USA

February 10-21

19th International Grassland Congress

Venue: College of Agriculture, Piracicaba, State of Sao Paulo, Brazil
Contact: ESALQ, Ave. Padua Dias 11, 13418-900 Piracicaba SP, Brazil
Ph: (55) (19) 429-4134
Fax: (55) (19) 429-4215
email: igc2001@esalq.usp.br

March 15

Weed Society NSW, Seminar on Current Standards of Weed Management - are they BMP?

Venue: State Forests Pennant Hills.
Contact: Mike Boulton
(02) 6881 0475
email: mboulton@dlwc.nsw.gov.au

June

18th Asian-Pacific Weed Science Society Conference

Venue: Beijing

2002

Feb 10-13

Weed Science Society of America Meeting

Venue: Reno Hilton Hotel,
Reno Nevada

June 24-27

12th EWRS Symposium 2002

Venue: Wageningen, The Netherlands
Contact: EWRS Symposium 2000, C/- Organization Bureau ISA, Markweg 17, NL-6871 KW Rendum
email: Ingrid.Sanders@wxw.nl
<http://www.ewrs.org>

July 11-12

California Conference on Biological Control II

Venue: Riverside California, USA
Contact: M Hoddle, Dept of Entomology, University of California, Riverside, California 92521, USA
Tel: 1-909-787-7292
email: ccbc2@cnas.ucr.edu
<http://www.sss.isn.net/-ppb2000/>

September 6-8

11th International Conference on Weed Biology

Venue: Dijon, France
Contact: J Gasquez/
J P Lonchamp, INRA Mailherbologie et Agronomie, BV 1540. 21034 Dijon Cedex, France
Fax: +33-03.80.693262
email: gasquez@epoisses.enra.fr
lonchamp@epoisses.inra.fr

September 8-12

13th Australian Weeds Conference

Venue: Sheraton Perth Hotel, Perth WA
Contact: Sally Peltzer
Tel: 08 9892 8504
Fax: 08 9841 2707
email: spelzer@agric.wa.gov



THE WEED SOCIETY
OF NEW SOUTH WALES INC.

Invites you to a seminar

WEED MANAGEMENT 2000

A review of weed control and weed management at century's turn.

August 17th, 2000 from 0930-1700

at

Hawkesbury Conference Centre, University of Western Sydney, Richmond, NSW.

Topics include:

| | |
|---|--|
| <ul style="list-style-type: none">• Weed management strategies and planning• The introduction and use of herbicide tolerant crops and varieties• Use of satellite technology• Regulatory changes impacting on weed control - Noxious weeds legislation, the revised Pesticide Act NSW, permits for small crops, the introduction of GLP for residue data generation, Native Vegetation Act• Flame weeding | <ul style="list-style-type: none">• New herbicides and new ways of using them• Alternatives to herbicides for weed control in natural areas, cropping and pastures – competition, mulching, mechanical weeding, hand weeding and other methods• Environmental considerations in herbicide use – atrazine as a case study• Herbicide application refinements• Precision weeding using site-specific information and factor-adjustment of dose |
|---|--|

Speakers include: Dr. Chris Preston from the CRC Weed Management Systems, Ms. Robin Buchanan from TAFE, Dr. Andrew Leys from National Parks, Dr. Dick Medd, Mr. Richard Carter and Mr. Andrew Storrie from NSW Agriculture, Dr. Luc Streit from Novartis Crop Science, Mr. Peter Alexander from Tee-Jet Australasia, Dr Richard Graham from the Eastern/Western Riverina Noxious Weeds Advisory Groups, Mr. Colin Sharpe from AVCARE, Mr. Tony Atkinson from Gameco and Ms. Cheryl Bate from the Sydney North Noxious Weeds Committee.

Weed Society members and students \$70 Non-members \$90
Inclusive of a light lunch, morning and afternoon teas

To register, send your details and cheque to The Weed Society of NSW, P.O. Box 438, Wahroonga, NSW 2076 by **August 10th, 2000.**

Enquiries: E-mail us on - nswweedsoc@bigpond.com or phone Mike Hood, Seminar Co-ordinator, 02 9439 9501 or check out our Website <http://nb.au.com/nswweedsoc> .

A Good Weed

the NEWSLETTER of
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