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Report on the 11th Australian Weeds Conference, 30 September - 3 October 1996, Melbourne, Victoria

by

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1. The Conference

The Australian Weeds Conference is held every three years and organised by the Council of Australian Weed Science Societies. This year the aim was to evaluate past weed research and look at its relevance to land managers today. Appropriately, the 350 attendees came from a variety of disciplines, agencies and perspectives: scientists, managers, policy analysts, government agencies, local bodies, universities, chemical companies, agriculture, forestry, and conservation. Ninety seven oral and 48 poster papers were presented over three days, a third of them in the Public Lands and Forest category. The papers represented a lot of useful information and ideas (some of the relevant titles are given in Appendix 1). Several field trips were run on day four.

2. My participation

I greatly appreciated the opportunity to participate in the conference

I prepared a poster paper, co-authored with S.J. Owen and Carol West, on 'Scoring the weediness of New Zealand's ecological weeds". This complemented the oral paper given by S.J. Owen. The two papers generated a lot of interest in the Department's strategic approach to weed control and methods for prioritising weeds (see next point).

In addition to active networking at every opportunity, a two hour informal gathering of all those working on environmental weeds was an excellent chance to share information and make useful contacts for future exchanges. Since the conference I have corresponded with 35 people seeking and sending relevant material.

I attended a meeting to progress the suggestion of an international workshop in late 1997 to develop best practice quarantine procedures for weeds, i.e., inclusion of weeds on national exclusion lists and deciding which new weed incursions warrant co-ordinated control. The meeting appointed three people to write a background paper by 30 November 1996.

Another fruitful meeting brought together those working on bitou bush and bone-seed. The latter is a growing problem on sand dunes and coastal cliffs in New Zealand. In Australia, such is the magnitude of the bone-seed problem, a biological control programme has been established.

3. Selected notes from Weeds Conference papers

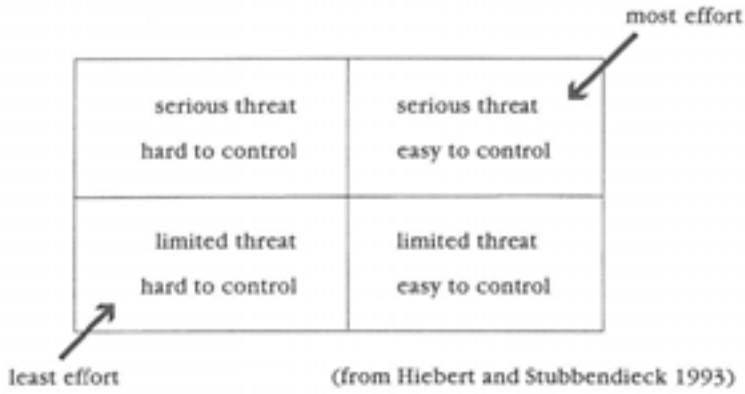
3.1 PRINCIPLES OF WEED MANAGEMENT

Several papers stressed the importance of strategic weed management; the need to treat the underlying causes of weed problems rather than simply trying to control individual species. Five steps are recognised:

- Prevention - control importation, education and public awareness
- Surveillance and early intervention -routinely monitor high risk sites
- Identify plant communities prone to invasion
- Decrease susceptibility to invasion -minimise disturbance
- Manage existing weeds - co-ordinate resources, control offsite effects

3.2 CONTROL EFFORT TRIAGE

Most effort should be put into controlling those weeds which pose a significant threat to conservation values, but are more readily controlled.



The degree of intervention should reflect the conservation values of the site and proper management should mean less weeds. If weeds are increasing and conservation values reducing, perhaps it is appropriate to let the reserve go.

The decision about the feasibility of weed control should include consideration of the need for revegetation.

3.3 PREDICTING AND PROTECTING AGAINST ENVIRONMENTAL WEEDS

Predictive power for weeds is poor, especially for weeds of nature conservation. That a species is a weed elsewhere in the world is the best predictor that it might be a weed in another country. Commercial conflict is reduced if environmental weeds are identified early. A useful pasture plant is almost bound to be an environmental weed.

The best legal protection for environmental weeds is the prohibition of their introduction, sale and distribution. Weeds spread fastest from several small populations rather than one large infestation.

3.4 INVOLVING THE PUBLIC

The importance of informing others of the magnitude of the environmental weed problem and involving them in control efforts was stressed by many papers. We may think we are communicating, but perhaps we are just talking to ourselves and not really getting the weed message across to the rest of the community.

3.5 THE SHOE APPLICATOR

Bottles with a sponge end used for wiping on liquid shoe polish are adapted to apply chemicals such as glyphosate. This applicator is easy to use, especially for volunteers.

4. Two lessons

Two of the papers struck me as timely reminders of how big is the environmental weed problem and how important it is to follow the principles listed above.

One paper described the undetected invasion and spread of *Praxelis clematidea*, a South American species closely related to mistflower and devil, both environmental weeds of New Zealand. *Praxelis clematidea* was overlooked in several surveys in northern Queensland because of its superficial resemblance to another related species. It was suggested that the weed may be present, but unrecognised, elsewhere in the Asian-Pacific region. The prospects for eradication reduce, and the cost of control increase significantly, the longer any new weed species goes unrecognised.

A student studying smilax *Asparagus asparagoides* explained why this species is so difficult to kill. It has 90-95% of the plant biomass in the root structures. Much of the root biomass is mature tubers, perhaps 15-20 years old. Smilax, an environmental weed of northern New Zealand produces 1,000 fruits per m^2 and has very few weak links. As if contol *per se* of this species were not problematic enough, what happens after spraying a blanket cover of smilax?

5. Recommendations

1. That department botanists and weed managers are actively encouraged to spend a proportion of their time in the field looking for new records of known weeds and occurrences of new, potential environmental weeds.

2. That the Department strives to increase public awareness of the environmental weed problem in New Zealand.

3. That the Department increase public awareness of what actions private individuals can take to prevent and contain weed introduction and spread.

4. That departmental weedy people peruse the 11^{th} Weeds Conference proceedings, published in September 1996, prior to the conference. Copies of proceedings may be obtained from Weed Science Society of Victoria, PO Box 987, Frankston, Victoria 3199, Australia. A copy may be borrowed from Head Office.

Appendix 1

List of papers delivered in the Public Lands and Forest Sessions, plus a few of the relevant papers presented in other sessions at the *11th Australian Weeds Conference*.

Copies of individual papers available from Diane Gardiner, Planning and External Agencies, Head Office, Department of Conservation, Wellington.

Lovett and Knights: Where in the world is weed science going?

Virtue: Improving the assessment of new weed threats: developing techniques with cruciferous weeds of cropping.

Webber: Managers' perspectives of weed management within rangelands management systems.

Looker: Assessment of the outcomes of weed management technology in urban areas.

Nazer: The current status of weed management technology in urban situations.

Rawling: Managing bushland remnants in the urban environment.

Beck, Noble, Miller: Marketing weed awareness to urban audiences.

Vitelli, Bryannah, Reberger, Noble: Eradication of alligator weed in Queensland with (ethnic) community support: current progress.

Bass: Pied currawongs and invading ornamentals: what's happening in NSW.

Rees and Smith: Volunteers — can they make a difference? The value of volunteers in rehabilitating urban bushland — survey and case study.

Wood: Urban weed control: an approach to address the issues confronting the practitioner in the field.

Thompson, Toth, Meszaros: Effect of soil and soil substitutes on herbicide efficiency.

Thompson, Toth, Meszaros; Selective control of weeds in native forest.

Burke: The good neighbour program.

McKenzie: Alligator weed — a new dilemma.

Ladson and Gerrish: Managing willows along Victorian waterways.

Weaver and Adams: Horses as vectors in the dispersal of weeds into native vegetation

Panetta and Lane: Managing weeds in Australia's public lands and forests.

Keighery: Weed management technology on public lands and forests.

Storrs, Kenyon and Lonsdale: Strategic weed management for the aboriginal lands of the top end.

Waterhouse and Corlett: Overlooked but still invading, *Praxelis clematidea* the unknown weed [relative of mistflower and Mexican daisy].

Hardwick and Waterhouse: Siam weed outbreak in far north Queensland: progress report on eradication effort [relative of Mexican devil].

Scott and Neser: Prospects for the biological control of the environmental weed, *Zantedeschia aethiopica* (arum lily).

Weiss: Control of horehound, *Marrubium vulgare* L., in Wyperfield NP, Victoria.

Raymond: Geophytes as weeds: bridal creeper (*Asparagus asparagoides*) a case study.

Pritchard: Bridal creeper [smilax] control with herbicides.

Leys: Weed management programs in New South Wales national parks.

Stockard: Restoration of Wingham Brush 1980–1996.

Montgomery, Colgan, Armstrong and McNee : Invasive species program.

Adair and Neser: The potential for biological control of the South African weed *Polygala myrtifolia* [sweet pea bush].

Little and Schumann: A new systematic trial design for the optimization of interspecific weed control.

Newton: Effective control of creeping groundsel (*Senecio angulatus*).

Pritchard: Control of *Spartina* with fluazifop-p and clethodim.

Cother, Nikandrow and Gilbert: Indigenous fungal pathogens as potential biological control agents for *Chrysanthemoides monilifera* (bitou bush).

Wilcock and Westbrooke: Factors influencing woody weed distribution in the proposed Creswick Regional Park, Victoria.

Thexton and Hardie: Managing willow (*Salix*) along the upper King river NE Victoria.

Pheloung: Predicting the weed potential of plant introductions.

Walton and Parnell: Weeds as quarantine pests.

Hosking, Sainty and Jacobs: Certainty and uncertainty in plant identification.

Toth, Milham, Meszaros, Kaldor, Fullerton and Burrows: Research on chemical control of bitou bush [related to bone-seed] in New South Wales.

Bass: Relative invasiveness of two woody weeds in northern New South Wales.

Pritchard: Efficacy of herbicides against angled onion [*Allium triquetrum*] in pot trials.

Kerr and Westbrooke: The application of GIS to weed survey.

Mullett: Ecological aspects of sweet pittosporum (*Pittosporum undulatum* Vent.): Implications for control and management.

Campbell and Nicol: Establishing trees on non-arable land to control weeds.

Moore, Fletcher and Rogerson: Golden dodder [*Cuscuta campestris*] in Western Australia — its status and eradication issues.

Miller: Mapping the distribution of weeds with cost effective remotely sensed data.

Armstrong and Keegan: *Celtis sinensis* [Japanese hackberry] and its control.

Evans, Rowland and McLean: Herbicide dependent agriculture: have we gone too far?

Holtkamp: Integrated control of *Chrysanthemoides monilifera* [includes bone-seed] in New South Wales.

Owen and Sheldon: Strategies for ecological weed control on conservation lands in New Zealand.

Blood and Slattery: 'I've got angled onion [three cornered garlic] in my garden and I reckon it's OK!' Environmental weeds and community education.

Phillips and Hocking: Results of trials for replacing serrated [nassella] tussock with weed-free kangaroo grass in degraded native Western Plains grasslands.

Syrett: Insects for biological control of broom (*Cytisus scoparius*) in New Zealand.

Owen, Timmins and West: Scoring the weediness of New Zealand's ecological weeds.

Dare and Hocking: Can serrated [nassella] tussock be controlled in native grasslands?

Puhar and Hocking: The effects of herbicides on in vitro seed germination of native kangaroo grass (*Themeda triandra*) and introduced weed species, serrated tussock (*Nassella trichotoma*) and Chilean needle grass (*Stipa neesiana*).

Norton: A participatory approach to weed management.

Kriticos: The role of ecological modelling in weed management.

McFadyen: Biocontrol of weeds: new approaches in the CRC for Tropical Pest Management.