A Good Weed

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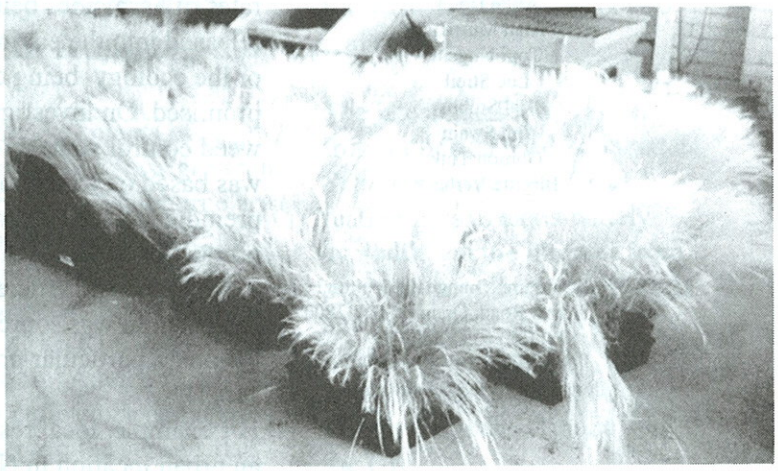
THIS ISSUE



Mexican feather grass surrendered for destruction – see Technical Report page 3 (Photo: Ian Faithfull KTRI)

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GUEST EDITORIAL

Horses for courses

B.G.Ward

The public and conservationist are taking a much closer interest in weed control these days and their views are having a significant influence on what weed control strategy is put in place, particularly in public areas. In some cases when taking their views into account a more environmentally detrimental weed control option is chosen resulting in higher rates of herbicides being released into the environment, or the ecology being compromised. On investigation the weed control strategy chosen was based on a persons prejudice against a certain product or application technique or insufficient information was sourced to counter a particular prejudice.

For example, local residents in an urban location in New Zealand were strongly anti-chemical because they perceived chemical herbicides to be poisons and detrimental to human health but were happy for the local council to use an organic herbicide. On using the organic herbicide, in this case for controlling kikuyu grass, the local council discovered the product needed to be sprayed every 3-4 weeks, at a 10% rate of active ingredient, to maintain the same level of control as that achieved in the past. Prior to the organic herbicide, a 1% glyphosate treatment was applied once every 3 months. On looking at the organic herbicide's Material Safety Data Sheet, it turned out to have a similar toxicology and LD50 profile to glyphosate. So from a human safety perspective, 30 times the volume of herbicide of similar toxicity to glyphosate was now being sprayed into the environment. In this case, public pressure on the local council to move away from chemical herbicides to reduce the potential exposure of herbicides to the public has resulted in the opposite happening.

In a second instance, dense canopies of the invasive vine *Celastrus orbiculatus* (climbing spindle berry) was discovered smothering and strangling native trees in an isolated public reserve. In the restoration strategy to preserve native species in the reserve, the conservation organisation responsible for managing the reserve decided the vine needed to be eradicated. The decision was to spray the vines with glyphosate in an attempt to rid the vine from the reserve. After spraying all vines identified every year for three years, the vine was still prominent throughout the reserve and little progress has been achieved. As it turned out, the foliar application of glyphosate was not effective at killing the vine. Also when spraying the vines, native species were either accidentally sprayed or covered with over-

spray resulting in stunted growth or death of many of these species and the restoration project was going nowhere. The foliar application of glyphosate was chosen over a cut stem treatment because spraying was seen as the easier and cheaper option, but glyphosate was also a broad spectrum herbicide. The cut stem option used a picloram herbicide gel and earlier trials proved this technique to be extremely effective at killing the vine with no off-target effects. The cut stem technique could have been used but was resisted due to the time consuming task of having to physically locate the vine stems before treating. If they had put the time and effort into the cut stem treatment they would have removed the need to go back year after year and in the long-term would have achieved a better result at a lower overall cost and without killing the native species.

In these examples I believe the weed control method chosen was based on a strong prejudice which resulted in the wrong weed control strategy being chosen. As a result more herbicide was applied into the environment than was necessary in both cases and in the second example the foliar application had a detrimental affect on the plant species the organisation was wanting to protect. These situations could have been avoided if a more neutral position was taken by the decision maker concerned and there was more effort taken to source all the efficacy, toxicology and environmental information on the various products and application techniques before a decision is made. It is very easy to make a decision whether to use a particular weed control method based on a single issue but without considering all the facts the results achieved may be the opposite to what was desired.

B.G.Ward
The Horticulture and Food Research Institute, Ruakura Research Centre, New Zealand

TECHNICAL REPORTS

Nursery surrenders Mexican feather grass

In January 320 plants of Mexican feather grass grown in a nursery in the Melbourne area were surrendered to NRE by the nursery operator. The plants were destroyed by officers of KTRI using steam sterilisation. Advice from industry colleagues had alerted the nursery to the serious risk posed by this plant. NRE has issued a public thank you to the grower for being so responsible and undertaking this exemplary action.

Mexican feather grass, *Nassella tenuissima,* was first positively identified in 1996 by Jim Dellow (Weeds Agronomist) Orange as being a major weed incursion. It is a declared weed in NSW but is not a declared noxious weed in Victoria. Under Australian quarantine laws it cannot be imported because of the risk of it becoming a serious weed. Since 1998 it has been offered for sale by a number of nurseries in Victoria and New South Wales and authorities have attempted to recover all the plants sold. Many have been tracked down and destroyed but some have not, despite rewards being on offer. a $100 reward (Victoria only) still stands for information leading to the apprehension of Mexican feather grass. The grass is not yet known to exist in naturalised populations but it may have been overlooked because of its close similarity to serrated tussock, *Nassella trichotoma.* It seeds freely, so plants grown in gardens are a dangerous potential source for future infestations and pose a real threat.

The latest batch was grown from imported seed, labelled as *Stipa temissima.* Mexican feather grass seed is widely available via the internet from overseas suppliers. Two years ago an internet survey identified 24 such suppliers in a few hours, mainly in the USA but also in Belgium, Canada and the UK.

Mexican feather-grass is potentially a worse weed than serrated tussock. Where it originated, cattle find it less palatable than serrated tussock and it grows in a much broader climate range. In Australia it could occupy a greater range of territory than serrated tussock and spread through the south eastern corner of the mainland as far as southern Queensland, as well as in large parts of the inland. If naturalised in large

areas, it would cause major economic and environmental damage, mainly by impacting upon pasture production and by invasion of natural vegetation.

KTRI "Under Control" No. 15

CONFERENCE REPORTS

Weed management 2000 seminar- outstanding success

The Weed Society Seminar held at University of Western Sydney (Hawkesbury) on 17 August 2000 could only be described as an outstanding success. As with any function, early fears of low attendance put pressure on the Executive and Organising Sub committee to work hard to publicise the event. This was done through every affordable channel with the result that the booked venue (the conference centre) was not large enough for the 160 delegates and a late venue change placed the event in the Memorial Hall.

Speakers gave a varied and interesting range of weed control options and demonstrations of some equipment was possible during the tea breaks. Reports from delegates afterwards indicated the content of the Seminar provided both useful data to work with as well as some interesting new options for attacking problem weeds. The quality of the speakers was also reflected by the fact that orders for proceedings have been received from as far afield as Western Australia and New Zealand.

The Executive and Sub committee led by Mike Hood can be justly proud of their achievements in making the day a success. Thanks to those members who gave their support and a reminder to check coming events for similar worthwhile functions.

Copies of the complete set of papers will be available soon at a cost of $25. Contact the Secretary to Order.

Report on Seminar Training for Weed Managers State Forests

Research Centre, Pennant Hills Thursday 15 March 2001.
The Seminar was another outstanding success with attendance of 46 people. Delegates included employees of councils, National Parks and Wildlife Service, State Forests, Department of Land and Water, private industry and others. The speakers gave a precise guide to the type of training available in weed control, how previous study can be acknowledged by the issue of a nationally recognised certificate and what training is now legally required before chemicals can be used commercially for weed control.

The success of this venue has supported the view that the Weed Society should investigate the possibility of presenting similar topics at regional centres. This will be discussed at future executive meetings.

The photo page in this issue shows the main speakers at the seminar, Bryson Rees, (Wellington Shire), John Kent (CSU Wagga), Reg Kidd (Orange) and Anna Ernst (EPA Sydney).
The Society appreciates the contribution made by each of the speakers who put a great deal of effort into the day.

Bob Trounce
Weeds Agronomist
NSW Agriculture Orange

OBJECTIVES OF THE WEED SOCIETY OF NSW

1. To ensure that those interested in weeds and their control are able to meet, to exchange their knowledge and experiences, and to learn of new developments and research.

2. To increase the general public and policy makers awareness of the effects of weeds and their control.

3. To represent the interests of members at State and National levels through full involvement in CAWSS and other organisations.

PO Box 438
Wahroonga NSW 2076

TRAINING FOR WEED MANAGERS

SEMINAR IMAGES

A section of the audience of weed managers who attended the Weed Society's seminar at State Forests Research Centre, Pennant Hills in March, 2001.

John Kent, Charles Sturt University, Wagga Wagga- "there is now much more structure required with training".

Bryson Rees, Wellington Shire Council "Recognition of prior learning (RPL) allows for some or all of the qualifications to be gained through credit for previous experience"

Anna Ernst, Environment Protection authority- "The aim is to help people who apply pesticides as part of their business to keep records to show the pesticides were applied properly".

Reg Kidd, Reg Kidd and Associates- "A Conservation and Land Management package will subsume ... over 80 different 'Land Management' courses to provide a national approach".

TRAVEL REPORT

WSSA Meeting and Mid-west USA Visit, February 2001

Clare Murphy

Weed Science Society of America (WSSA) meeting, Greensboro, North Carolina USA (11-14 February 2001).
Approximately 600 delegates attended the 2001 WSSA meeting and there were 97 poster and 216 oral presentations. There were a number of concurrent sessions on biology and ecology of weeds, herbicide technology, soil and environmental aspects, extension and regulatory aspects pertaining to agronomic crops, horticultural crops, turf, pastures and rangelands and natural ecosystems. I presented a paper – "Does parental environment influence wild oat (*Avena* spp.) seedling growth?". Unfortunately as is often the case with large conferences, the concurrent sessions were disappointing – information overload! More inspiring were the symposiums, which focussed (for longer than 15 minutes!) on themes ranging from: Gene Flow: Implications for Weed management; Dormancy in Seeds and Vegetative Propagules; Grower Forum on Sustainable Weed management and Invasive Plant Species: Visions of the Future. The Grower Forum was particularly enlightening and introduced me to a range of production systems in the U.S. and their associated weed problems. Farmers were invited to talk about their farms, weeds and issues they felt weed researchers should be tackling (very confronting!). A highlight of the meeting was the conference dinner and award ceremony…the "Academy Awards" equivalent for any American weedie – not to be missed!!

University of Nebraska, Lincoln (15-18 February 2001)
Nebraska farming systems are heavily reliant on glyphosate for weed control, the primary rotation being RoundUp resistant (Roundup Ready) corn and soybean. University of Nebraska is a land-grant university which has a strong research emphasis in precision weed management (headed by Dr. David Mortensen) as well as an eco-physiological approach to understanding crop-weed competition (Dr. John Lindquist). There are also a number of student projects on herbicide technology and application.

Iowa State University, Ames (19-21 February 2001)
Iowa State University was the first land-grant university in the U.S. and currently has 220 undergraduate agronomy students, with approximately 160 faculty members. The weed group has strengths in both research (Drs. Matt Liebman and Jack Dekker) and extension (Drs. Mike Owen and Bob Hartzler).
The predominant farming system in Iowa is RoundUp Ready corn and soybean. Soil fertility is poorly managed in Iowa. A common practice is to apply nitrogen fertiliser (anhydrous ammonium gas) in autumn, 7 months prior to sowing, much of which is then lost over winter. There are also major environmental problems associated with nitrogen fertilisers (e.g. groundwater contamination). The 'straw that broke the camels back' was the recent natural gas shortages that doubled the price of nitrogen fertiliser. All these factors have contributed to a growing interest in soil fertility management (e.g. organic soil fertilisers, clover residues) and its implications for weed management.

University of Minnesota, St. Paul (21-22 February 2001)
State and Federal resources for funding weed research in the U.S. is declining due to the massive adoption of glyphosate resistant crops. Instead, soybean and corn levies are funding other issues such as diseases and insect pests. This has led to a massive reduction in the competitive crops breeding program (particularly soybeans) at University of Minnesota. Farmers are not interested in growing more competitive varieties when they can be subsidised for growing glyphosate resistant soybeans. Recently there has been an increase in U.S. Government funds for invasive species research. Other research areas at UM include Mycorrhizal Fungi (MF) and its feasibility as an ecological way of managing weeds (Dr. Nick Jordan), biocontrol, weed ecology and management and weed extension.

North Dakota State University, Fargo (23 February 2001)

NDSU is a land-grant university, receiving US$400,000 per annum funding from the US Government. However, the amount of investment from chemical companies is declining. There are less chemical companies and they rely on research being done by their own staff. The risk of developing glyphosate resistance from glyphosate-resistant cropping systems is lessened in North Dakota due to diverse rotations in their farming systems and the ability to rotate herbicide groups. However multiple resistance is increasing and management of these weeds is difficult. The research focus at NDSU is on identifying mechanisms of herbicide resistance, herbicide physiology and genetics and application technology. There is now a weed ecologist at NDSU (Dr George Kegode), which should strengthen this area of weed research.

Montana State University, Bozeman (26-28 February 2001)

The average annual rainfall varies from 150 – 450 mm across the farming regions of Montana. As a consequence, cropping is opportunistic and many farmers sow their crop dry and take a chance on growing season rainfall. Dryland crops include cereals, peas, chickpeas and lentils, with a heavy reliance on fallows. Research areas at MSU include precision weed management, the spatial variability in weed competitiveness due to environmental parameters and how this effects weed management (e.g. herbicide performance) (Dr Bruce Maxwell, Dr Lisa Rew). Decision support models are also being developed to quantify the long-term risks of alternative weed management strategies (e.g. broadcast vs precision herbicide application). Other research areas include crop-weed competition and modelling (Dr Marie Jasieniuk) and weed physiology (Dr. Bill Dyer).

Major issues

Glyphosate technology, herbicide resistance and funding consequences

The recent explosion of glyphosate resistant crops in the mid-west U.S. has led to the majority of farmers growing RoundUp Ready corn and soybean in a continuous rotation. The reason for its adoption is:

1) farmers are heavily subsidised by the U.S. Government for growing these crops,
2) it provides excellent control of a broad spectrum of weeds within the crop. The chemical companies have pushed this issue by "guaranteeing" the herbicide will provide a weed-free field regardless of agronomic or environmental conditions, consequently fields can be retreated at no additional cost!
3) lack of public pressure against GMOs .

Weeds are no longer seen as a major issue due to glyphosate resistant crops and there has been a steady decline in State and Federal resources for weed research. There is no money from soybean or corn levies being directed towards weed research. Instead levies are funding research into disease and insect pests.

Farm conglomeration in the mid-west U.S. and environmental costs

Agriculture in the mid-west U.S.A, particularly Iowa, Nebraska and Minnesota has become commercially driven and not consumer driven. Diverse rotations are no longer profitable due to large government financial incentives for growing corn and soybean. Farm size has increased to optimise profits from Government subsidies and consequently, smaller (niche market) farms cannot compete. Farm conglomeration has led to major negative impacts on the environment in terms of intensified herbicide and fertiliser use, as well as the huge selection pressure for herbicide resistance. The heavy reliance on chemicals is also causing considerable contamination of ground and surface water, as well as air pollution problems.

Increasing importance of organic farming

There are a number of issues beginning to emerge in the U.S which highlights the need to shift towards sustainable organic farming systems. Weed researchers are certainly aware that it is only a matter of time before the glyphosate resistant corn/soybean system will 'break down' as a result of herbicide resistance and other associated problems (e.g. gene flow, volunteer crops). Already there are signs that disease problems are

increasing. Furthermore, in response to recent natural gas shortages in the U.S., fertiliser companies sold their natural gas stores on the free market and consequently, farmers are expected to pay twice as much for nitrogen fertiliser in the 2001 growing season.
Despite the current funding bias towards chemical weed control, there are increasing numbers of ecologically-minded researchers focussing on alternative strategies for weed management, including soil amendments such as green manure, mycorrhizal fungi or cultural control methods such as cover crops and allelopathy. This is certainly an exciting and promising area of weed research in the U.S. However the challenge will be to attract funds to allow the research to develop profitable and sustainable systems and most importantly, extend the information to growers.

Acknowledgment
My visit was funded by the Weeds CRC, GRDC, University of Nebraska and The Weed Society of NSW Inc.

Clare Murphy,
NSW Agriculture & CRC Weed Management Systems,
Agricultural Research Institute,
Wagga Wagga

NEW MEMBERS

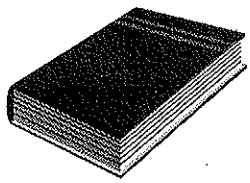
Welcome to:

Allan R Smith
Graham Pritchard
Peter Semple
Bert Jenkins from Greening Australia (NSW) Inc.

CONFERENCE NOTICE

2001 11th Biennial Noxious Weeds Conference
3rd – 6th September 2001-08-22 Moama Bowling Club
Moama, NSW

The Riverina Conference Committee, Murray Shire Council and NSW Agriculture takes great pride in hosting the 2001 Biennial Noxious Weeds Conference, to be held in Moama on the 3rd to the 6th September 2001.
The Conference is expected to attract a strong contingent of Local Government employees, including Weed Inspectors, Managers and Councillors. In excess of 300 people are expected. The Conference will be conducted over four days, and will be officially opened on 4th September 2001. There will be representatives from Federal and State Government departments, key note speakers, technical papers and workshops during the conference which will be an invaluable tool for delegates.
Further information in respect of the Conference can be obtained by emailing us at bbarlow@murray.nsw.gov.au or phone Barry Barlow on 03 58843302.
Registration forms may also be obtained from the website www.murray.nsw.gov.au



OTHER GOOD READS

"Plants of Importance to Australia. A Checklist"

R.C.H.Shepherd, R. G. Richardson and F. J. Richardson

'The authoritative identification of any plant is its binomial botanical name. However, common names are the basis of most communication on plants throughout the community. Thus, linking common names to a botanical identification is critical for this communication. For many plants, there is more than one common name across Australia and some common names are used for more than one species. It greatly assists communication to know this range of common names for a species and to know the range of species for a common name. By providing this information, this book will be invaluable throughout the Australian community.'

The list follows in the tradition of *A Checklist of Economic Plants in Australia* compiled by W. Hartley and published in 1979, which in turn followed the CSIRO booklet *Standardized plant names* published in 1942 (revised in 1953). These books provided standard common names for plants of economic significance

in Australia. In addition, *Plants of Importance to Australia – A Checklist* brings up-to-date the many changes to botanical names and incorporates many new species that are now recognized as either weeds or valuable species in Australia.

Bruce Wilson, President, Council of Australian Weed Science Societies

"Weed Biology and Management"

New International Weed Journal

This journal is aimed at Asian Pacific weed scientists, and will contain original papers and review articles in all areas of weed science including weed biology and control technology, herbicide behaviour in plants and environment, and weed utilisation.

The journal will be published four times a year (March, June, September and December), and issue No. 1 of Volume 1 should appear in March 2001. We wish to invite about twenty weed scientists from the Asian-Pacific region to the editorial board and will use an editor system for editing the manuscripts. Your advice and cooperation as well as paper contribution from members of your Society are essential for this journal to successfully grow up to be an international weed science journal.
Weed problems and their control technology impact on our environment and have been increasing in importance, particularly in the Asian-Pacific region, along with an increasing food demand. The journal, should provide a place to publish research accomplishment, and a forum for the exchange of information and knowledge for weed science in the region.

New publications for weed incursions

It is clear that to have any impact on the vast number of weeds we attempt to control in New South Wales, that a major aim should be prevention of escape of new introductions.

To gain control at an early stage it is necessary to publicise new plant introductions which are potential weeds.

For this purpose a new format leaflet is being developed by NSW Agriculture which will describe these weed threats, and supply enough detail for early identification. The format has been discussed at length and a glossy leaflet format with quality colour photographs of the identifying features is the most favoured. The essential elements of the publication would be:
- attractive full colour brochure
- distinctive banner to identify the series
- weed species in series to be of
- limited distribution in NSW
- disseminated to councils by mail and e-mail
- available via the Weeds Subprogram Webpage
- copies available for distribution to relevant retail outlets such as nurseries, pet shops, flea market operators.

The first two leaflets have been drafted as pilot for the series. These will identify the potential weed species *Asystasia* spp. (Chinese violet) and *Centaurea* spp. (knapweeds) which have been found in small naturalised sites and for sale in nurseries.

Bob Trounce
NSW Agriculture

INTERNET SITES OF INTEREST

Environment Australia, Invasive Species
www.environment.gov.ua/bg/invasive
Pest animals pages include information on the red fox, feral cat, feral goat, rabbit, feral pigs and other vertebrate fauna including the European carp. Weeds material includes National Weeds Strategy link to Weeds of National Significance and Weedbuster Week homepage.

New South Wales Agriculture Pests, Diseases and Weeds
www.agric.nsw.gov.au/ap/weeds/
Animal health, Farm Chemicals, Insect Pests, Scientific Collections, Plant Protection, Vertebrate pests, Weeds. The Weeds Pages include: Publications (Bathurst burr, Crofton weed, Keep NSW Parthenium free – clean your header, Noogoora burr and Californian burr. Parthenium weed, Paterson's curse, Rhus – an urban weed, Water hyacinth), legislation (Noxious Weeds Act 1993, Policies of the Noxious Weeds.

Australian Environmental Pest Managers Association
www.pestworld.org/aepma/welcom.htm
Objective of the Association is to develop and promote the environmental pest management service industry in Australia and coordinate its activities.

ADVERTISE YOUR SOCIETY

If you would like to promote the NSW Weed Society at your work place, at a seminar or other venue, contact the secretary to obtain a copy of the Society's A3 colour poster showing the activities and benefits of being a member.

STOP PRESS

Viva La Lippia

Lippia invasion in France

NSW Agriculture now has an international reputation in regard to lippia control.

Ken Motley (District Agronomist, Forbes) recently received a request for help from Guillemette Husson, Conservatoire des Espaces Naturels du Languedoc-Roussillon, Montpellier, France.

"We are looking for information about invasion of a plant called *Lippia canescens* in Australia; since a similar phenomenon is happening in France."

"The 'Conservatoire' is a regional trust which realises studies or different actions in order to protect natural ecosystems"

"While the problem with lippia in France isn't as heavy as the invasion in Australia, there is a serious risk of aggravation in the next years".

This request is based on research conducted in the Forbes district by Ken Motley and Jim Dellow (Orange) and Andrew Storrie and Jennie Spenceley in the north.

p.s. An Agfact *Lippia* p.7.6.52 is in press.

Jim Dellow
OAI
Orange

COMING EVENTS

September 3 - 6
Biennial Noxious Weeds Conference
Venue: Moama NSW
Contact: Barry Barlow (03) 5884 3302
email: murray@origin.net.au

September 23 – 26
Resistance 2001 Meeting the challenge
Venue: Rothamsted, Harpenden (UK)
Contact: Resistance 2001
IACR-Rothamsted Harpenden
Herts ALS 2JQ.UK
Tel: +44-0-1582-763133
Fax: +44-0-1582-760981
Email: res.2001@bbsrc.ac.uk
www.iacr.bbsrc.ac.uk/iacr/tmeeting.html

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/- Organisation Bureau ISA, Markweg 17, NL-6871 KW Renkum
Email: Ingrid.Sanders@wxs.nl
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
www.sss.isn.net/-ppb2000/

September 8-12
13th Australian Weeds Conference
Venue: Sheraton Perth Hotel, Perth WA
Contact: Convention Link
Ph: 08 9450 1662
Fax: 08 9450 2942
Email: convling@wantree.com.au
www.wantree.com.au/-weeds

2001 11th Biennial Noxious Weeds Conference

3rd - 6th September 2001

Moama Bowling Club

Moama, NSW.

The Riverina Conference Committee, Murray Shire Council and NSW Agriculture takes great pride in hosting the 2001 Biennial Noxious Weeds Conference, to be held in Moama on the 3rd to the 6th September 2001.

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Further information in respect the Conference can be obtained by emailing *us at* bbarlow@murray.nsw.gov.au *or phone Barry Barlow on 03 58843302.*

Registration form may also be obtained from the website www.murray.nsw.gov.au

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SURFACE MAIL

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ORANGE NSW 2800

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