

## THE AUSTRALIAN NATIONAL WEEDS STRATEGY

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*Summary.* The National Weeds Strategy document outlines the extent, the economic and ecological impact, and potential of weed problems in Australia. It discusses the main issues of weeds, which confront governments, landholders, weed scientists and the general public today. It proposes five main recommendations to improve the effort in weed management in Australia: i) review of Commonwealth quarantine legislation (import of plants); ii) review of State and Territory legislation relating to noxious weeds, sale and transport of weeds and weed-contaminated produce; iii) education support and community involvement re the economic, social and ecological impact of weeds; iv) a catchment management approach to weed management. A policy and operations structure is proposed which includes (v) the appointment of a National Weed Management Coordinator to help implement the Strategy with advice from a weeds research and development working group to prioritise R and D effort.

### INTRODUCTION

A National Weed Strategy document was prepared in response to community, landholder and government concern that a better way was needed to manage weeds in Australia. A taskforce under the auspices of the Standing Committee on Agriculture was set up within the Australian Weeds Committee framework to prepare a draft document for public comment.

The taskforce considered 98 initial submissions and Dr L Smith met with State Government departments and others interested in weeds before a draft document "Towards a National Weeds Strategy" was released for public comment in October 1992. There were 570 requests for the draft which elicited almost 100 written responses for consideration. The majority (80%) were responses from government, local government, companies and community groups such as Landcare and wildlife societies.

The strategy documents the impact of weeds on all sectors of Australian society. Weeds occur in rangelands, cropping and pasture land, aquatic and semi-aquatic systems, conservation areas, plantation forestry and urban and industrial sites with varying effects. Many weeds have not reached their ecological limit. Weeds reduce yields of crops and pastures, lower value of plant and animal products, affect human and animal health, contaminate water supplies, act as hosts for insects and diseases, cause fire hazards, alter the structure, composition and function of natural ecosystems and interfere with sustainable land use practices. They can be a major influence on land degradation to the detriment of native flora and fauna (3).

It is estimated that weeds cost Australia over \$3,000 million annually (1) yet only land managers or policy analysts with direct experience of these problems appreciate their full impact.

There are many exotic species known to be weeds which are not recorded in Australia and every effort must be made to prevent their entry. Of the 17,000 plant species occurring in Australia, 11% are introduced and about half of these (approximately 900-1000 species can act as weeds). New plant species are being introduced at 4 to 6 species per year. Of the 220 introductions

proclaimed noxious, 46% were brought in when there was less appreciation of the latent ability of plants to express a disproportionate vigour in another environment. The Strategy recognises that undesirable plant growth, in the form of weed infestations, has adversely affected our quality of life and economic and ecologically sustainable weed management systems must be developed and implemented for our well being.

## CURRENT ISSUES

### Role of Government

*Philosophy.* The role of government in natural resource management is to define, assign, promote land stewardship and enforce rights of ownership and use of resources in the interest of society as a whole. This has not been done effectively with weeds at all levels of government and is one of the main reasons why a National Weeds Strategy is required. The principle to be followed in assigning action is that of Ecologically Sustainable Development.

For sheer geographic scale weed issues in the arid and semi-arid rangelands qualify as the most serious and intractable problems (3). In these areas some weeds such as *Acacia nilotica* (prickly acacia) in western Queensland are symptoms of unsustainable grazing pressure and a remedy will require attention to social as well as weed control issues.

*Legislation.* The *Quarantine Act, 1908* regulates the import of plants into Australia and although the Australian Quarantine and Inspection Service (AQIS) carries out its duties diligently, plants are sometimes imported which become weeds. This was highlighted when *Kochia scoparia* was introduced into Western Australia for revegetation of salt affected land. A risk assessment system is needed which evaluates proposed plant introductions as to their potential to become invasive in both agricultural and conservation areas. The *Wildlife Protection (Regulation of Exports and Imports) Act, 1982* also regulates entry of plants into Australia and there is a need to rationalise the import control and quarantine functions of both Acts so that the risk of potential weeds entering Australia is minimised.

At State level there are numerous pieces of legislation which deal with weeds, but there are anomalies or a lack of consistency in areas of sale and transport of weeds and weed-contaminated produce, especially noxious weeds. In some cases there is a lack of legislation altogether.

Community involvement. The community can be a powerful force for managing weeds in local areas, but the problem is how best to harness and maintain their enthusiasm. It is necessary to engender a sense of stewardship of the land and its problems in the community. Expansion of Landcare programs to cover all weeds issues is necessary.

The use of a regional or catchment management approach to weed control enables the community and government to achieve a more balanced and coordinated effort in weed management. Control of weeds can be integrated with control of feral animals and with soil conservation strategies.

Sanctions in the form of penalties are already in place under State/Territory legislation but are not always enforced, usually for valid reasons. Incentives and sanctions will be more effective if

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the community is aware of the social, economic and ecological implications of not controlling or not preventing the spread of weeds.

Research and development. No formal mechanism exists for setting national research priorities and while some States and industry bodies do set priorities the methods used are not consistent and involve little community consultation. Blacklow (2) concluded in 1984 that weeds research in Australia was essentially carried out by part-time researchers with insecure funding.

The present level of research in the taxonomy, biology and ecology of weeds is considered to be inadequate, yet these disciplines are fundamental to the development of integrated weed management systems. Quantitative data of the economic and ecological impact of weeds, especially on biodiversity, needs attention for priority setting purposes. Pooling and sharing of resources should be promoted and Cooperative Research Centres developed for weeds as with other disciplines.

Herbicide strategies should be aimed at increasing efficiency of herbicide use, increasing environmental and human safety and creating an awareness in the community that herbicides are an essential component of good vegetation management. Specific areas of concern are i) over-use and persistence in soil and water (surface and groundwater), ii) herbicide resistance, iii) registration for minor crop use, and iv) over regulation of use.

Education and training. There is concern about the run down in weed science training at university level and the lack of opportunity for post graduate training of weed specialists. Training of weed control operators and practitioners is essential and there is a need for a TAFE level training course which will license these people at a uniform standard.

## RECOMMENDATIONS

1. Structure. Any strategy is required to document a process for analysis of the problem, priorities for action, management, feed-back and response to project outcomes. The NWS recommends problem analysis and priority setting through a series of workshops and conferences to be organised by the National Coordinator, assisted by State and Territory Department representatives. The recommendation is for the Coordinator to be appointed within the Bureau of Resource Sciences to drive development of an operating plan, the development of more stringent plant introduction legislation, a model action plan for weed outbreaks and act as convener of the working groups. An initial term of three years is proposed.

For effective recommendation on research and development, the Strategy proposes a segmentation into ecosystem or land-use categories each with a specialist working group appointed to be responsible for recommendations for action. The categories proposed are:

- tropical and subtropical crops, pastures and plantations,
- temperate crops, pastures and plantations,
- aquatic habitats and ecosystems,
- tropical and subtropical native forests, rangelands and nature conservation areas, and
- temperate native forests rangelands and nature conservation areas.

Initiatives in research should include prediction and prevention of spread; integrated weed management with a view to reducing reliance on herbicides; research policies for herbicide

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resistant cultivars of crop and pasture species; monitoring herbicide residues in soil, water and the environment; development of weed management policies based on ecological and economic principles; and revegetation and rehabilitation of ecosystems.

The Strategy does not specify the priorities for research or implementation of current knowledge against particular weed problems. It is expected that this detail will occur as a result of group consultation.

2. Legislative action. Since weeds to a large extent are a legacy of deliberate plant introductions which possessed unsuspected abilities for invasiveness in alternative environments, more rigorous screening procedures are an obvious first step in a Strategy.

*Review of Quarantine Legislation.* Evaluation of plant introductions requires a risk analysis assessment method based on their potential to become invasive in both agricultural and conservation areas. The *Quarantine Act*, 1908 and complimentary legislation must be reviewed to ensure a more stringent plant introduction procedure, with denial of automatic entry for plants that may pose a risk and with the cost of risk analysis assessment borne by the importer.

*Review of State/Territory Legislation.* A working party is recommended to review existing Commonwealth, State and Territory legislation on weeds with a view to eliminating anomalies and implementing more uniform systems. Legislation should bind governments to control noxious weeds on public lands.

3. Public Awareness and Education. Weed management must be promoted as part of ecologically sustainable development (ESD) with increased public awareness, educational support and community involvement to ensure that the economic, ecological and social impacts of weeds are recognised. Specific awareness and education programs to focus on the benefits of preventing entry of new weeds to Australia, weed seed hygiene, the significance of weeds in relation to land degradation, and to address public concern about use of herbicides are required.

## REFERENCES

1. Combellack, J.H. 1989. *Plant Protection Quarterly* 4, 14-32.
2. Blacklow, W.M. 1984. *Proc. 7th Aust Weed Conf.*, Perth. pp 186.
3. Humphries, S.E., Groves, R.H. and Mitchell, D.S. 1992. *Kowari* 2. pp 156.