

## ‘To declare or not to declare? That is the question’

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**Summary** State weed legislation has undergone substantial review over the past five years. Queensland, the Northern Territory and Tasmania have put in place new legislation, while other States are reviewing their statutes. New weed legislation in most States acknowledges the impacts of weeds on the whole environment, rather than the previous narrow focus of ‘noxious’ production weed legislation. This legislation seeks to include public benefit weeds while removing private benefit production species. Although important, legislation should not be seen as an end in itself. Legislation can be used strategically to support other measures such as planning, research and extension. This paper will discuss why it is likely that spaces on declared lists will increasingly be filled with names unknown to most landholders, either because they are not yet in the state or they impact on biodiversity.

**Keywords** Legislation, declaration, tool, review, weed management.

### INTRODUCTION

Declared plant legislation is one means of reducing the impacts and rate of spread of weeds. The historical approach to weed control is to make it mandatory to control certain species through legislative proclamation. Problems with this approach are that it: i) is species centric, ii) imposes responsibilities on certain landholders, iii) depends heavily on undertaking compliance activities to ensure control, and iv) generally has not worked and instead it has been seen as a problem for better weed management (Commonwealth of Australia 1997).

The aim of this paper is neither to say which species should be listed in each state nor what system should be used to list them. These topics are better covered by other papers at the conference and as part of the implementation of the various state weed strategies. This paper asks instead – Why do governments declare weeds? Is weed declaration required? Are declared weeds better managed than non-declared species?

### WHY DECLARE WEEDS?

A weed problem needs to be carefully and accurately defined before declaration occurs otherwise the regulation may not adequately deal with the real issue. Firstly why is the plant a problem? Is it a symptom of land use or is the plant itself a problem because if its

biology i.e. do you need to manage the land or control the plant? The existing research or science surrounding the species needs to be thoroughly investigated and any gaps in this science may need to be filled before the problem is addressed. Is the problem that we do not know how to control the species?

Public opinion is often part of the problem as well as part of the solution so it needs to be considered when formulating a response or strategy to address the problem. Public opinion can sometimes limit or negate the solutions put in place e.g. environmental weeds that are planted in gardens may be hard to control as you may need to convince the community to change its behaviour as well as control the species. The politics of the day can also lead to complications in weed management as some of the methods or techniques used may lead to public displeasure, which can bring pressure upon elected officials.

In a similar vein, the solutions proposed may conflict with the policies of political parties or not reflect the priorities for funding allocations of the government. The resources required for a certain action or actions may be beyond the capability of the stakeholders, from governments to individuals, and so may be impractical. The current economics of particular industries or sections of the community also need to be considered. There are also a myriad of legislative restrictions or compulsions that shape weed control programs including controls on town planning, herbicides, pollution, conservation, trespass and criminal acts. It is apparent that there is a variety of options available for a variety of weed problems of which weed species declaration is only one tool.

All States and Territories have the ability to list weed species under legislation of some form, imposing management requirements on landholders. However the legislation differs between jurisdictions in a number of ways including the classes of weeds, the recognition of lists from other States and the foci of industries covered. Weed declaration is only one form of legislative intervention. Others include controls on plant imports and controls of seed contaminants.

There are many forms of government intervention in weed management other than legislation. These include research, information and awareness activities, financial assistance, control on government lands, planning and coordination, resolution of sectoral

conflicts and monitoring and evaluation. It is likely that in many instances other activities undertaken both by government and the community may be more effective than legislative intervention.

The question then is why and when to declare, i.e. is a legislative tool required to help tackle the weed problem?

A discussion of the advantages/disadvantages of declaration and historical case studies of successful legislation will then help answer the question i.e. what makes legislation effective?

The advantages of declaration include the following:

- it provides assistance to those landholders who are making an effort to control by enforcing the adjoining landholders to also carry out control;
- it provides an agreed-to list of problem species;
- it assists in sourcing funds for research, extension and on-ground control by highlighting important species;
- it provides publicity and awareness;
- it limits or slows the spread of some species;
- it allows for action on new species or on species at new sites; and
- it may provide a barrier to entry.

The disadvantages of declaration include:

- it often specifies control actions/inputs rather than outcomes with little flexibility;
- it assumes that the benefit of policy intervention will be the same across all land uses, regions or tenures when it is unlikely that this will be the case for many weeds;
- regulation of a pest that impacts on one industry;
- highly apparent species can be declared over high impact species;
- management of declared plants may be ineligible for funding under some national programs;
- weed legislation regulates control of weeds by landowners (if the State does not take on its responsibility as a land owner, regulation of weeds on public lands is ineffective); and
- once a species is declared it is very difficult to remove from the list.

#### THE NEED FOR GOVERNMENT INVOLVEMENT

Governments get involved in production weed management due to market failure. In most situations weed management on an agricultural property is incentive itself, as the long-term benefits from weed management activities are greater than the costs of these activities e.g. it pays to control weeds as more cattle can be

supported in weed free pastures. Benefits that accrue directly to a landholder from undertaking some form of pest management activity are called private benefits. When a landholder does not undertake the 'socially optimal' level of weed management it is often because the private benefits are insufficient to justify the activity, e.g. I am not going to kill the weeds, I can not afford it! This is considered market failure. Weed legislation can be used to overcome the problems neighbours experience when an individual fails to control weeds. Weed management that advantages other landholders or the broader community is called public benefit. The greatest problems for weed management arise from weeds which are not on private lands. For these species it is the government who is the landowner and so public funds need to be expended although this may provide private benefits to neighbours.

Legislation does have to be invoked whenever there is market failure. If this failure has arisen because the weed does not have an impact on the landowner's property (e.g. grass weeds in crop headland), the species is new to the area and so control methods are not known (e.g. sleeper weeds or new weed incursions) or it is beyond the landholder's capacity (e.g. large but strategic weed infestations) then there may be a public benefit in government assisting a landholder with pest management activities. In the examples above, planning, research and/or extension, and financial incentives or assistance are all possible forms of intervention.

Also notwithstanding economic drivers, discussed below, government decisions are often affected by non-market factors e.g. political gain, lobbying from interest groups and historical precedence (Pannell 1994). Weed declaration often reflects societal pressures. In Australia major factors have been the development of animal grazing in the late 1800s, extensive agriculture following the Second World War and the growing concerns of biodiversity and conservation management in the 1980–90s. As culture changes so do the pressures on government to declare weed species. One of these pressures was a legal decision relating to common law.

The common law principle of private nuisance allows the individual to take action to prevent the '*unlawful interference with a person's use or enjoyment of land, or some right over, or in connection with it*'. Legislation is required as the common law principle was found not to apply to weeds in the 1908 High Court case *Sparke vs. Osborne*. The ruling laid down that '*an occupier of land has no duty at common law to control a noxious weed growing naturally on his land so as to prevent it from spreading or extending to his neighbour's land*'. The judgement continued that

a person was only liable for damage due to weeds if the 'damage was encouraged by the intervention of his human act'. Since the common law assigned no liability on an owner of weed-infested land, this liability must therefore be assigned by statute e.g. being a good neighbour under common law does not mean you have to stop weeds spreading to your neighbour (Menz and Auld 1977).

Government intervention can generally not be justified if the private benefits outweigh the public benefits, unless a government decided that funds are to be expended on weeds instead of other public priorities such as hospitals and schools. A recent study on the economic benefits of a number of weed management activities in Queensland has shown, however, that every dollar spent on all pest management initiatives, averages up to \$6.40 in benefit, implying a net return of up to 540% (AEC 2002). As expected some activities provide a greater return than others; education and awareness activities return a Benefit Cost Ratio (BCR) of 43.8, research 18:1, prevention 31:1 and eradication of new weeds 16:1. Even the control of established production weeds was shown to return a BCR of 2.3:1 at a 6% discount rate. In contrast Roberts (1987) found that there was no economic justification for government intervention on saffron thistle or blackberry in Western Australia, as the economic impacts of the species were not great enough to warrant control actions, although this study did not include various external costs and benefits of government intervention.

In Queensland the government also gets involved in the management of weeds of society and the environment. Impacts and benefits of this management can be hard to measure but more importantly it is impossible to apportion costs. Government funds for activities on these species are currently limited so it is likely actions will only be undertaken in specific circumstances. There can be economically valid reasons for this public expenditure. The Queensland report concluded that the public benefit of pest management outweighed the private benefits by a ratio of 1.5:1 across the suite of pest management activities assessed, including pest containment and control of environmental weeds. Public benefits accounted for in this study included reduced health impacts, retention of visual impacts, prevention of fire increases and reduced threat to biodiversity, using proxies for forest management and ecosystem services.

This study showed there was return on investment of public monies from pest management but this return was least for widespread species. Management of established weeds could result in a positive return especially after specific programs. However, action had to be sustained so that the situation does not revert to

the previous level. Legislation for these species can result in both public and private benefits as long as all landholders are involved, which emphasises the need to ensure compliance by those landowners who do not undertake adequate control. Following through with compliance has often been the problem with species declaration. Amor and Twentyman (1974) noted that a weed law that relies on a high proportion of prosecutions could not achieve its objective.

Government should only be involved with the production of good legislation but what is good weed legislation? Legislation to prevent the spread of weeds has a long history in Australia. It has been over 152 years since the passing of an Act to prevent the further spread of Scotch thistle was assented in South Australia (1852) and Victoria (1856). Smith (1987) noted that legislation appears to have had little effect on the weed as it is still found throughout both States and has spread to others. Review of pest legislation in Australia has shown that most legislation that focused on unachievable outcomes of eradication or even control of widespread species has been wholly ineffective and often undermined by lack of science, key ecological and economic principles being ignored, and was predominantly influenced by politics and public pressure (Amor and Twentyman 1974, Menz and Auld 1977, Auld 1987, Roberts 1987, Smith 1987, Panetta and Scanlan 1995). Similarly, legislation for native species has also been unsuccessful in reducing impacts. Menz and Auld (1977) highlighted that requiring a native species, galvanised burr, to be eradicated under legislation, rather than controlled, bore little resemblance to either a practicable or desirable outcome, i.e. landholders were unable to meet the unrealistic responsibilities imposed. The ineffectiveness of various State Acts led Moore in his 1975 paper to suggest removing 80–90% of the plants on noxious weed lists and starting over.

At the same time legislation has been useful in helping to eradicate some weeds and slow the rate of spread of others, e.g. kochia in Western Australia (Smith 1987, Dodd 1993, Panetta and Scanlan 1995). The recent economic analysis in Queensland confirms that control of new species is the most cost effective pest management activity. Control of invasive species was listed as a priority action in the National Objectives and Targets for Biodiversity Conservation (Environment Australia 2001). Control of invasive species was shown by Possingham *et al.* (2002) to be one of four areas of investment that, above all others, is likely to return greatest benefit by halting the decline of Australia's natural systems and biodiversity (Anon 2002).

The National Weed Strategy identified the need for effective State and Territory legislation as a component

to Goal 1. This document listed a number of problems with current State weed legislation but it also went on to suggest 10 principles for better State declaration. In a recent review John Thorpe has refined these to create nine core principles of weed legislation (Thorpe 2003) to provide direction for State legislation.

Green (1965) noted that good weed legislation depended on community goodwill. It is important therefore to recognise that although societal input is not easily measured it must be included in the decision-making processes leading to declaration, along with issues such as the ecology of the species to be declared. What is important however is that there be balance between community perception and impacts. This has often not been the case in the past. Melding science and people is the art of making good policy, including good weed legislation.

In summary, 'good weed legislation' will be that which not only gives people responsibilities but which also empowers them so that they can meet their responsibilities.

#### TO DECLARE OR NOT TO DECLARE?

As stated earlier, legislative actions need to be evaluated along with the other forms of government intervention in weed management: research, information and awareness activities, financial assistance, control on government lands, planning and coordination, resolution of sectoral conflicts, and monitoring and evaluation. If a weed problem is a result of market or common law failure, there will be a positive return from the investment of public and private monies and it will be covered by good legislation. Then there may be a case for species declaration to help address the weed problem. Recognising that a variety of weed problems provide a variety of options may mean that the option for one State or region differs from the option proposed for another.

Consistent with the thoughts of other workers (Amor and Twentymen 1974, Smith 1987), I believe that species should be prioritised depending on the seriousness of the species, both in terms of potential and current impacts. Major classes of weeds should be prohibited plants and priority plants. Other workers have discussed a third group, well established noxious plants, but these are often the species for which legislation, although raising the profile of the species, also raises community expectations of greater activity than government is generally able to deliver. Queensland, as described below, has decided to add a third group of species, weeds primarily affecting environmentally significant areas. Plants that affect local human and ecological communities, but not the whole State, can also be declared under local laws in

a number of States. For other species, research, extension and possibly codes of practices, as developed for leucaena (*Leucaena leucocephala* (Lam) De Wit.) in Queensland and olives (*Olea europaea* L.) in South Australia, will be used rather than declaration to reduce impacts.

Before declaration, the outcome of the regulation must be considered. If eradication is the target then questions need to be asked about the facts of 'is this feasible?', 'are the resources required available to the landholders?' (including government if it is to play a role in the program). Is there a timeline associated with the declaration – when will it be reviewed and what is the outcome if eradication is not delivered? If a decrease in impacts is the outcome expected can the landholders realistically meet their responsibilities? In the case of private benefit, landholders with weeds can be sensibly required to follow-up control activities or remediate the land affected. The cost of control of follow-up for public benefit weeds may be harder to assign. The new Queensland legislation has created a class of environmental weeds but recognising this problem has constrained the application of programs on these species to environmentally significant areas. The expectation is that these areas are under active management, but this will rely on the State as a major manager of protected areas having adequate funds to undertake this work.

#### QUEENSLAND LEGISLATION – A NEW APPROACH

Queensland proclaimed a new Act in July 2003, the 'Land Protection (Pest and Stock Route Management) Act 2003'. The Act attempts to put legislation in place which overcomes problems of the past and which can meet the problems of the future. The legislation includes a mix of species and site led approaches while also including elements of empowerment, planning, weed seed spread prevention, and the ability to legally manage species by harvesting (NRM and E 2004).

The Act creates a framework for pest management in the State. Rather than focusing on pest species it sets out principles of pest management including integration, public awareness, commitment, consultation and partnership, planning, prevention, best practice and improvement. The Act enshrines the need for planning requiring a State weed strategy and pest planning by all local governments and all State government agencies with land management responsibilities. Consultation on all plans is an essential activity and legislatively required by the Act. These plans must include actions to deliver on all the principles of pest management.

The Act simplified the classes of declared species, from five to three. Recognising the importance of

preventing new weeds, 35 taxa are listed Class 1: weed taxa that are not yet present in the State or, if present, are under eradication. The declaration of this group of plants allows the State to rapidly respond to new weed incursions. Many of these species are unknown to most people in the State. They may even be hard to source photos for. The State has found that 'forewarned is forearmed' as seven of the previously declared species have been found in the state since listing in 1994 (Csurhes 2000). Australian Quarantine also regulates most of the species listed and a number are on the Northern Australian Quarantine Strategy list of priority species. Species listed include a number of Weeds of National Significance and eradication targets, bitou bush (*Chrysanthemoides monilifera* (L.) Norl.), witch weeds (*Striga* spp. Lour), miconia (*Miconia* spp. Rúiz & Pavón), and Siam weed (*Chromolaena odorata* (L.) R.King & H.Robinson).

Class 2 are established weeds; those species that require management to either control the spread or decrease the impact. Similar to the new Northern Territory and Tasmanian legislation, the Act requires the development of management plans for these species; these are called species guidelines. The idea behind the guidelines is that while previous legislation focused on declaration as an action in itself, this Act seeks to be flexible and focus on the weed management outcome. They include both statutory and non-statutory operational actions (public awareness, planning, research and mapping) that are consistent with the eight principles of pest management. The guidelines, although not the product of public consultation, do reflect the actions on pest species in local government pest management plans. A number of widespread species now controlled by biological controls were undeclared. These include Noogoora and Bathurst burr (*Xanthium occidentale* Bertol. and *X. spinosum* L.), mistflower (*Ageratina riparia* (Regel) R. King & H. Robinson) and annual ragweed (*Ambrosia psilostachya* DC.). Class 2 species include rubber vine (*Cryptostegia grandiflora* R.Br.), prickly acacia (*Acacia nilotica* subsp. *indica* (L.) Del.) and hymenachne (*Hymenachne amplexicaulis* (Rudge) Nees).

Class 3 species are weeds with most impact on the environment and society. The idea behind the Class 3 species is to create a 'Worlds Best Practice' process for environmental pests through a site management approach for environmentally significant areas. Enforced control of multiple weed species at a single site is an innovative concept in weed management. Queensland is the first State to implement this form of ecologically based management. Traditionally, enforced weed control focuses on a single species and tends to overlook the potential for other weed species to take over after

removal of a dominant weed species in some situations. As part of this Act, control of non-declared species may also be enforced if they threaten the site. Twenty species were listed as key environmental weed species, any of which if found in an area would indicate the need for some form of control. Species listed include lantana (*Lantana* spp. L.), cat's claw vine (*Macfadyena unguis-cati* (L.) Gentry), privets (*Ligustrum lucidum* Aiton and *L. sinense* Lour.), and Singapore daisy (*Sphagneticola trilobata* (L.) O.Hoffm).

The system being developed for weed declaration in Queensland, while not yet implemented, prioritises species by their impacts on and benefits to economic production, the environment and society. The system is consistent with National Technical Specifications for Post-Border Weed Risk Management developed by the Weed Management CRC. It requires risk assessment of the species and predictive mapping. Species that are already widespread are unlikely to be declared, as current species impacts are compared to potential impacts and if these are under a threshold the species is not ranked for declaration. Prioritised species are assessed further through evaluating the non-science components of coordinated control. This assessment looks at factors like community and landholder support, resources required for control, availability and effectiveness of control methods and comparative assessment with other species. This assessment system is an attempt to integrate politics and community concerns into the declaration process rather than allowing it to drive the process. The system is transparent in that all scores will be available for review.

Most of the weeds declared in Queensland are not solely weeds of primary production. The species now cover the range of ecosystems at risk from weeds and many of the Class 2 species are still considered to possess potential to spread significantly within the State. In order to decrease spread, specific offences relating to the deliberate sale of material contaminated with seeds of declared species or the movement of machinery and vehicles that may be contaminated with seeds has been included. This includes the need for a weed hygiene declaration form for any material that may be contaminated with any of seven declared species. It is also illegal to sell or trade all declared species. Compliance activities have also been increased on these species with the use of a departmental compliance unit, removed from the general agency staff, to undertake some compliance measures, as well as providing training to regional staff and local government operatives. Softer compliance activities, awareness raising, education and training are also being improved to decrease the need for 'big stick' actions.

## CONCLUSIONS

One of the principles of the National Weed Strategy is:

*'Successful weed management requires a coordinated national approach which involves all levels of government in establishing appropriate legislative, educational and coordination frameworks in partnership with industry, landholders and the community'*.

Declaration has for too long been seen as the end of the process rather than one of a range of tools leading to better weed management. It is paramount that governments improve the declaration process and link it with other educational and coordinated weed management activities.

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