Lantana – at WONS with the community?

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Summary Lantana (Lantana camara L.) is one of the 20 Weeds of National Significance (WONS) in Australia. Landholders and communities feel its impacts across a range of land uses, topographies and climatic zones, and its potential to spread further is apparent. However lantana is considered a low priority in many areas despite the fact it has been in Australia for 160 years and caused millions of dollars of damage. The need for heightened awareness and exchange of information is an essential first step to understand that this problem weed can be better managed.

The WONS lantana projects have assisted in reducing these impacts by coordinating national priorities, proposing consistent legislative frameworks, developing integrated controls and improving the sharing of information across communities, local governments, state agencies and landholders. The extension challenges faced included how to address the range of target sectors, each with varying attitudes, awareness and needs; and how to maximise the benefits of integrated control across the wide range of land uses affected by lantana.

This paper discusses how the WONS lantana project has helped build community capacity in the transition from accepting lantana as part of the natural landscape to providing useful motivation, information, management tools and directions to assist with managing this weed.

INTRODUCTION

Lantana (Lantana camara L.) is regarded as one of the world’s worst weeds (Holm et al. 1991) and probably the worst weed along the eastern Australian coast due to its extent, impact and likelihood of increasing its distribution. It infests natural ecosystems, reducing biodiversity, and out-competes pasture species, reducing productivity and causing livestock deaths (Swarbrick et al. 1998). Lantana also restricts access to specific areas, thereby affecting forestry industries and negating opportunities for eco-tourism and community recreation activities.

Regardless of these impacts, lantana management is often prescribed with a low priority, resulting in less than ideal control measures being undertaken. There is also a strong political reluctance for enforcement with landholders neighbouring major infestations being the only driver for any enforced compliance. As a result, lantana has become one of the largest social issues with regard to weed management. Now 160 years after its introduction, infestations have expanded to 4 million ha (Culvenor 1985) affecting areas throughout the coastal and subcoastal regions of eastern Australia from Cape York to the Victorian border. Based on 1985 figures, lost production is now estimated to be more than $22 million annually, not including environmental impacts.

Lantana camara is a species complex (Day et al. 2003), amplified by the extensive number of varieties in Australia which do not match the native varieties from tropical America (Scott et al. 2002). The varieties introduced to Australia were varieties grown and hybridised for several centuries in greenhouses in Europe. There are now possibly more than 30 different varieties in Australia (Smith and Smith 1982), with some easily recognised by varying flower colour, but others generally indistinguishable to land managers and scientists alike.

The distribution of this weed across Australia has increased with different varieties surviving in a range of climate zones and vegetation ecosystems, and at varying rainfall levels, elevations and topographies. Furthermore, these different varieties respond differently to control methods such as herbicides and biocontrol agents (Day et al. 2003).

The need for increased commitment has been recognised as essential to overcome this social stigma and reduce the impacts of major infestations. A concerted effort is required now by landholders, communities, regions and governments alike to prevent a worsening of the current problem and increasing further spread. Needs include:

• a re-evaluation of attitudes to lantana to ensure a renewed diligence;
• improved awareness and exchange of information;
• integration of control methods and prioritisation of actions to achieve better control results; and
• strategically coordinated management to secure on-ground results.
WHAT SOCIAL ISSUES?
Acceptance by many people over the last 160 years has reduced the effort to control this weed. Growing numbers of people see lantana as part of the landscape. Often lantana infestations are too large or too inaccessible to control using conventional means, and there is confusion about control when ornamental varieties are sold in some states and public plantings by gardeners, local councils and businesses are apparent. In many areas, these perceptions have led to apathy. These perceptions need to be overcome before real change can occur and before adaptive management can review past control options and renew vigour with better integrated management.

The lack of action in regard to this weed is hard to understand considering its impacts. While the possibility of eradication is remote, prevention of spread and control at local and regional levels are possible, depending on the level of active management applied. What is needed is involvement by community groups and landholders to drive behavioural change programs to increase the priority given to lantana relative to other weeds, and to increase exploration of integrated control methods to achieve strategic control.

Voluntary actions are the first step to begin building community capacity.

What will motivate landholders to undertake lantana control? A number of positive and negative factors affect the way action on-ground is undertaken. If outcomes meet the landholder’s expectations, they are generally continued. Achieving motivation may be influenced by the six factors.

1. **Active land management** Land that is actively managed for a specific land use is more likely to include lantana as part of a control program. Actively managed productive land will ensure lantana infestations are removed to increase productivity values, and actively managed natural areas will ensure lantana removal to increase conservation and biodiversity values. Neglect of lantana will increase the impacts of the weed and decrease the value or ‘use’ of the land.

2. **Committed attitude and priority** A committed attitude towards lantana control will be more likely from those individuals with an environmental awareness. If combined with a priority towards lantana there is an opportunity for landholders to reach sustainable farming or restoration of natural bush blocks. Land managers who view lantana as a weed problem will include lantana as a priority in integrated weed management on their property and realise successful control requires action, follow up and monitoring over a number of years, and not by just undertaking one-off and mostly ineffective controls. Voluntary community groups are committed to doing more than they are required to do for the sake of the environment. Their priorities will ensure that environmental weeds are effectively controlled to enrich conservation values and community image at a local level.

3. **Access** Easy access to infestations makes control of lantana much easier. While production areas and edges of natural areas are usually accessible, there are many steep inaccessible areas or dense infestations that make control difficult. These difficulties may prevent the faint-hearted from tackling the problem. Positive motivation needs to be encouraged by ensuring the right control methods are acknowledged and used for these specific situations.

4. **Available resources** The availability of resources in terms of timing, funding, equipment and personnel has a positive effect on control efforts whether through favourable cost/benefit ratios for well-managed grazing property, incentives offered by local government for landholders to undertake control actions, or available sources of public funding for preserving important areas. For unused lands and vacant lands, few resources are usually devoted to management, and therefore there is little active control creating a negative motivation.

5. **Available information** People may become motivated when they have information and expertise to support decisions about lantana control. The provision of best practice information and integrated lantana control will help ensure effective on-ground control. This is essential to prevent landholders wasting time and resources in applying ineffective single control methods on an ad hoc basis. Actively promoting and sharing information will provide a better understanding of the suite of options available to manage lantana.

6. **Legislation and compliance** While enforcement of legislation can be a powerful tool to regulate the control of lantana, there still needs to be voluntary cooperation of landholders and land managers to abide by those regulations and cooperation from state and local government to enforce them. The negative side is that without enforced compliance there is an opportunity for landholders and land managers to ignore their responsibility in terms of ‘stewardship’ and not actively treat lantana infestations as a part of a weed management plan for their properties.
The National Weeds Strategy identified lantana as one of the 20 Weeds of National Significance (WONS) because of its widespread distribution and impacts. The project has contributed to renewed on-ground lantana control by building the capacity of landholders, communities and regions to adequately deal with the issues surrounding it.

The lantana WONS project has brought about a positive change in attitudes towards lantana, providing useful motivation, management tools and directions that will make the process of managing lantana easier in Australia.

Five component projects were funded through the Natural Heritage Trust (NHT).
1. National coordination.
2. Extension and promotion.
4. Community biological control.
5. Southern NSW control.

These components were implemented from January 2003 to re-focus efforts against lantana through the implementation of a national strategy and ensure national direction via a working group, the National Lantana Management Group (NLMG). This was assisted by the development of new information tools, raising awareness, involvement in training programs, and the commitment of individuals, community groups, local governments and state agencies towards improving strategic control of lantana.

The project has brought the topic of lantana back into discussion. While there are still gaps in our knowledge and vital control tools yet to be developed, this project will have a vital role to play.

1. National coordination

Through the development of a national strategy document, a group of 12 members helped scope and review the range of issues and strategies necessary to reduce the impacts of lantana. The lack of consistent declaration levels throughout the states and territories of Australia made it very difficult to have a consistent approach to government legislation. Some states allow the continued sale of ornamental lantana even though these sources of lantana have been shown to contribute to the gene flow in the lantana complex and are likely to make control even more difficult. Some states have minimal levels of declaration, while other states ensure regulatory control of lantana in specific areas. The NLMG has helped create the understanding that the supply and sale of lantana needs to cease to reduce likely further expanded gene pools and also that there is a need to raise levels of legislative declaration to prevent spread to areas not yet infested to potentially save millions of dollars later on control.

The NLMG attracted input from state agencies, local government and the community to help build a dataset of and map known lantana infestations, prioritising areas of high impact.

The work of the group has brought to light several new infestations in areas previously thought not to have lantana. This information has been essential in stating the case for taking action now to prevent major infestations later.

2. Extension and promotion

Raising awareness of lantana amongst a diverse audience of people at all levels of government and rural and urban communities was always going to be a challenge.

The emotive issues surrounding lantana have created some opposing views, which in turn have been part of the drivers to promote opportunities for action. This was the reasoning behind the development of a colourful series of public relations materials to spearhead the focus on the danger of ignoring the impacts of lantana.

The focus of the extension and promotion items produced under this project was to attract attention to the impact of lantana and provide an understanding of what was expected of individuals with lantana. Good graphics, bright colours and short sharp messages gave the desired effect. While these materials were primarily directed towards Queensland and New South Wales communities, there was also an opportunity to use them in other states as an awareness tool to show the sorts of impacts that could be experienced through not acting quickly to reduce small infestations.

Other information items produced covered the identification of lantana varieties, effects of lantana poisoning, lantana biological control agents and lantana as a WONS.

The information helped fill gaps in general knowledge as well as provide a focus for the overarching message that lantana is a weed, not a desirable plant.

3. Best practice

There was a need to revisit the current practices available to control lantana. A survey of landholders and land managers across a range of land use types, regions and property sizes provided a valuable source of data concerning current practices in Australia. This was supported by information from published papers and interviews to develop the Lantana Control Manual. This publication reviewed current control options for various land use situations and identified appropriate actions to ensure long-term success in various on-ground endeavours dependent on local circumstances. While not necessarily considered to be best practice, there are facets of integrated control with an emphasis on followup, monitoring and
revegetation as essential to successful control, and an acknowledgment that limited commitment to followup will reduce the success of any initial efforts.

By looking at the principles of adaptive management, there is an opportunity to build and improve on previous operational efforts. There needs to be a new set of controls that will integrate methods to push lantana ‘over the edge’, instead of relying on single control options such as just ‘spraying herbicide’. There needs to be a full understanding of the suite of options and applying the best options within the context of land use. Therefore further trials for best practice will be necessary to ensure controls are cost-effective, meet the needs of landholders, and are undertaken in environmentally acceptable ways. This project will continue to focus on new research in this area.

4. Community biological control This program directly involved communities in a ‘release and monitoring’ program for biological control agents at specific sites, but it also drew the attention of community groups and local government officers to other aspects of lantana control. The program was important in securing effective linkages with community, local government, regions and state agency representatives for the distribution of information, obtaining advice and undertaking training and field days. It also motivated people and gave them confidence to do on-ground work.

5. Southern NSW control This activity aims to strategically reduce the southern spread of isolated infestations of lantana. Small isolated infestations were targeted for eradication to gradually push the southern most containment line as far north as possible to meet up with the major lantana infestations.

These cleanup measures were achieved through the devolution of funds to local landholders through local government.

CONCLUSION

The lantana WONS program is only at the beginning of developing national direction and commitment for managing lantana, but completed projects have positively influenced commitment towards this weed from a number of agencies, communities and landholders.

By coordinating national priorities and improving the sharing of information across communities and regions there have been opportunities to collate and expand on available sources of knowledge as well as explore some of the benefits of integrated control through targeted research.

Ultimately it will be the responsibility of landholders, land managers and communities to take action with available resources, and for all levels of governments to ensure appropriate frameworks, incentives and researched methodologies are available to continue the on-ground efforts. The benefits of better decisions concerning lantana control will become apparent in increased productivity, better conservation of biodiversity, reduced risks of hazardous fires, and improved access to some inaccessible areas. These are benefits that will be felt by all Australians.

The Lantana WONS project will continue to support national strategies (through the national management group), strategically prioritise efforts and issues needing attention, and lobby regions and catchments to ensure lantana remains a part of effective planning.

REFERENCES


