Lantana Survey Analysis

Final Report

Department of Natural Resources and Water

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Executive Summary

Purpose of Study

Lantana is now a major weed in over 60 countries and is recognised as one of the ten worst weeds worldwide. In Australia, lantana is recognised as a Weed of National Significance (WoNS) due to its invasiveness, potential distribution range and impacts on primary industries, conservation and biodiversity.

Lantana is a brittle, multi-branched, thicket-forming shrub, normally 2-4 metres tall but capable of scrambling over other vegetation to 15 metres high. It is an aggregate species derived from natural and horticultural hybridisation, and has the ability to cross-pollinate with other weedy and ornamental varieties to form new, more resilient strains (CRC for Australian Weed Management, 2003).

This document examines and compares two surveys of land holders and managers (primarily in New South Wales and Queensland) conducted by NRW regarding the spread and impact of lantana on their properties. These two surveys were conducted in 2003 and 2006.

The purpose of the analyses is to report key outcomes and implications of the survey results.

Summary of Findings

Impacts of Lantana

- The majority of land managers believe that lantana has either a significant or major impact on their property.
- Lantana is most commonly reported to impact on property by invading native vegetation / riparian areas and increasing weed control costs.

Control Method Preferences

- A high proportion of land managers do not control lantana in non-productive areas of their land.
- Survey results suggest that manual removal techniques are more commonly utilised on small lantana infestations, largely reflecting the time intensiveness of manual removal, while mechanical control techniques are more common for larger infestations where these techniques are more economical.
- Herbicide is generally more commonly used to control lantana infestations in readily accessible areas of land used for primary production purposes.
- Fire is more commonly utilised to control lantana infestations in difficult to access areas of large primary production properties.
- Grazing is generally used as a control technique where it is not economical to employ other methods.
- Land managers are more likely to follow up or monitor treated sites on an ongoing basis in land used for conservation or primary production purposes.
- Measures to prevent regrowth after treatment are more commonly undertaken on smaller properties, likely reflecting the lower cost and time requirements and differences in land manager attitudes between small and large properties.
- Revegetation with pasture and follow up with herbicide are considerably more prevalent techniques for preventing lantana regrowth in productive land, while

continual removal by hand or slashing and revegetation with native plants are relatively more common prevention techniques in land used for conservation purposes.

Factors Limiting Adoption Control

- Major limiting factors to adoption of control methods include lack of available time, density or access restrictions and costs of control.
- Land managers indicated that incentives such as financial packages, herbicide assistance and new biological control agents would encourage them to improve their lantana control effort.

Control Costs

- In general, the time spent controlling lantana increases in line with the size of the property, and is higher for land used for primary production purposes.
- Total costs of control generally increase in line with increases in property size, although at a decreasing rate, reflecting the "lumpy" nature[1] of expenditure items such as capital costs and machinery.
- The average cost of control almost doubled between 2003 and 2006, with labour expenses almost tripling over this period. This increase in expenditure is likely a reflection of both increasing labour and input costs, as well as an increase in control efforts.

Effectiveness of Control

- Over three quarters of land managers are satisfied with the results of their control effort.
- Management of lantana is easier and more effective on smaller sized properties, as evidenced by smaller properties generally reporting a lower extent of infestation and higher proportions of respondents indicating that the spread of lantana has been decreasing.
- Overall, management of lantana appears to be effectively reducing the spread of lantana, with a higher proportion of respondents indicating the spread of lantana is decreasing rather than increasing in both the 2003 and 2006 surveys.
- The extent of lantana appears to be receding more rapidly in land used for recreation and conservation purposes than in primary production land, as indicated by a comparatively larger proportion of respondents reporting a decrease rather than increase in spread. This may be a reflection that lantana is more invasive in disturbed areas.
- The following can be noted relating to the effectiveness of regrowth prevention techniques in reducing the spread of lantana:
  - Revegetation (with either pasture or native plants), shading out new lantana infestations, continual removal by hand or slashing and follow up with herbicide were generally associated with a decrease in spread of lantana; and
  - Preventing animal movements over the treated area and other prevention techniques were generally associated with an increase in spread of lantana.

[1] "Lumpy costs" are costs that involve purchases of whole units that are not readily divisible.

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