Willow management developments across New South Wales

Bob Trounce
NSW Department of Primary Industries, Locked Bag 21, Orange, New South Wales 2800, Australia

Summary Willow trees have long been regarded as an acceptable and beneficial feature along stream banks in south-eastern Australia. During the 1990s some people realised that *Salix* species were beginning to spread, not only from broken branches taking root but also from viable seed produced from cross pollination and self fertile new *Salix* imports. Many landholders and groups are now waging a war against these invaders, which in some areas have caused erosion and damage by blocking stream channels and diverting the flow outside traditional water courses. This paper records some of the work that has been done to control rampant willow growth, sometimes in extremely remote and relatively inaccessible areas. It lists some of the resources and innovative methods used to reach and control the weeds.
Keywords Willows, willow management, streams, rivers, *Salix*.

INTRODUCTION

The recognition of willow naturalisation and the related issues of flooding and erosion led to individuals and community groups lobbying for willow management. In 1997, industry workshops were conducted by the (then) Department of Land and Water Conservation to discuss the impact of willows on riverine environments. The Noxious Weeds Advisory Committee also sought public opinion on possible actions to reduce the impact of willows growing along streams.

As a result of this public consultation, the NSW government drafted the 'Interim Willows Strategy for NSW'. The purpose of the strategy is to: (i) describe actions to restrict further natural spread of willows; (ii) outline a coordinated government policy on willow management for NSW; and (iii) outline a process for the development of regional strategies.

DEVELOPMENTS

The management of willows across the river systems of New South Wales has been collated and mapped. The data captured includes:

- the length of stream banks where survey and removal has occurred;
- the costs of allocated resources;
- the number of people involved; and
- the species of vegetation used as replacements.

Community groups, government departments and landholders have since implemented strategic and often innovative ways to remove and manage willows avoiding serious stream bank damage.

Methods of propagation and replacement Some Landcare participants were contemplating how stream banks could be stabilised without willows. One such person was Bill Hicks. His goal was to produce a native tubestock that could establish easily, grow quickly and produce an extensive deep root system with some resistance to eroding by high water flows. The result was the development of the long stemmed native tubestock using up to 27 species of Australian native plants. This method of replacing unwanted willows now has a valued place in our riverine environment.

Access and control methods While many situations provide easy access to willows growing above the high water level on river banks, some sites have required innovative techniques and skills to carry out the work.

One intriguing project was conducted by the 'Friends of the Colo'. It started with the observation of a willow infestation by a bush walker. Involvement of the National Parks and Wildlife Service (NPWS) resulted in a helicopter drop for a survey party of six people. Using three canoes they mapped the infestations on the Colo River and Wollemi Creek and from this a group called 'Willows Out of Wollemi' was formed. A three year grant from the Environment Trust supported later refinements to this project involving training of volunteers at the Penrith Olympic Whitewater Stadium in using rafts to access the difficult infestation sites.

Resources Statistics collated so far indicate work has been carried out on at least 40 streams, under the direction of over 20 coordinators and using well over $1.5m in grants. This is the tip of the iceberg and does not account for additional resources applied by councils, other government departments and private landholders.

CONCLUSION

Some willows threaten flow in streams; corrective action has commenced; huge resources will be required to prevent further spread of willows.

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