

## Executive Summary

### 1.0 Background

Although a familiar and often well-loved icon of the Australian landscape, willows (*Salix* spp.), are a Weed of National Significance and among the most serious river bank and wetland weeds in temperate Australia. At least 32 naturalised and 47 cultivated willow taxa (species, varieties and hybrids) are present in Australia and there is a need to understand the distribution, invasiveness and impacts of these willows in order to make informed decisions to better manage willows.

This project is sponsored by the Australian Government Department of Environment, Water, Heritage and the Arts and Department of Agriculture, Fisheries (through the Defeating the Weed Menace Program). It is administered by the Department of Primary Industries Victoria on behalf of the National Willows Taskforce and addresses high priority actions in the National Willows Strategy by:

- determining the current distribution of naturalised willow taxa,
- producing risk assessments and interactive maps of the current and potential distribution of all willow taxa present in Australia for state and national planning,
- developing a national prioritisation matrix based on risk and feasibility for coordinated control; and
- establishing a process for monitoring change across Australia.

The following report details the course of this project, development of the process, results and how to use them. It clearly outlines **national priorities** for willow management, including priority areas and willow taxa, that will provide the basis for future directions set by the National Willows Taskforce.

### 2.0 How willow management priorities were developed

Comprehensive surveys and a series of workshops were conducted across Australia to **determine the extent of willows across Australia**. Twenty-nine willow workshops, attended by a total of 576 people, were held across 29 regions in Victoria, New South Wales, Tasmania, South Australia and the Australian Capital Territory between September 2006 and March 2007. Presentations were given in Queensland and Western Australia to raise awareness of the potential threat of willows and detailed on-ground mapping occurred in these states. As a result of the workshops extensive on-ground mapping also occurred in South Australia.

All the data collected during these phases of the project was collated, digitised and added to a GIS database. This data formed a basis for our current knowledge on willow distribution across Australia and provided input for the weed risk assessment.

The **willows weed risk assessment** was conducted in order to objectively rank the weediness of willow species more specifically than previously done. Thirty-five willow taxa, including the three major groups of willows, the subgenera *Salix* (tree willows), *Vetrix* (shrub willows) and *Chamaetia* (alpine/mountain willows) were assessed, based on three major components:

- invasiveness, or potential rate of spread
- current and potential distribution and
- the current and potential impacts of the plant on land use and ecosystems.

### 3.0 Willow management priorities across Australia

As a result of this project we now have a sound process for setting on-ground priorities for willow management at state and local scales and the toolkit to do this. Every region in Australia now has a matrix prioritising willow taxa for management based on risk. This information is accompanied by a series of maps with current and potential distribution of willow taxa. These maps are scalable to the local level and developed to determine which areas management should focus on.

**National willow management priorities** (by taxa) include:

- Very high priority: *S. triandra*, *S. daphnoides*, *S. glauca*, and *S. exigua*. These are not known to have naturalised in Australia.
- High priority: *S. x rubens*, *S. nigra*, *S. cinerea*, *S. alba*, *S. babylonica*, *S. purpurea*, *S. x sepulcralis*, *S. viminalis*, *S. fragilis*, *S. x pendulina*.

The information derived from this project will also enable legislative decisions to be made, focussing on willows with the greatest or lowest risk. Making legislative changes can more effectively manage conflicting views and uses of willows and the willow problem. This evidence-based approach will help build credibility in future decision making and management activities at the local through to the national level.

### 4.0 The way forward - recommendations

From the results and evidence derived throughout this project, a number of recommendations have been made for both on-ground management and legislation. On a National scale recommendations for **very high and high priorities include:**

#### Very high priority taxa:

- Encourage removal from gardens to reduce the chance of them becoming weeds in Australia.
- Establish a monitoring and incursions response program for Very High risk willow taxa, targeted to areas with suitable climates and habitats for these species, to respond to the establishment of these taxa in Australia, should this occur.
- Develop and provide information on identification of little known highest risk species to improve awareness of state, regional and local land managers to these species.

#### High priority taxa:

- Target for eradication as a focus of control programs, in regions where this is feasible.
- For willows in this group that are beyond eradication, inform management priorities by the risk they pose to national assets.
- Conduct further mapping of *S. cinerea*, *S. babylonica* and *S. nigra* to determine the feasibility of their focus for national eradication.

A number of recommendations are also made within the report for moderate and low priority taxa as well as seeding and hybrid willows, and each state.

**Legislative recommendations** from the national perspective include:

- With further research, *S. chilensis* 'Fastigiata' and *S. alba* var. *caerulea* from subgenus *Salix*; *S. integra* 'Hakuro-nishiki,' from subgenus *Vetrix*; and *S. x* 'Boydii' and many of the subgenus *Chamaetia* (except *S. glauca*) could be removed from the WoNS listing as well as state or local legislation.
- *S. babylonica* was found to be a high risk willow and should be added to the WoNS listing, and considered for declaration as noxious under state and local laws.
- Regional rankings and management priorities identified in this report may be used to declare *Salix x reichardtii* and *S. x calodendron* as noxious under state or local laws, where appropriate.

This project enables a more objective, scientific process to willow management than was previously possible. It allows willow managers at all scales to set priorities for on-ground management that provide the greatest environmental and economic benefits and provides a means of altering legislation to more effectively manage conflicting views and uses of willows and the willow problem. Although, through this project, we have significantly improved our knowledge of the extent and potential impacts of willows, there are clearly still knowledge gaps. We need to continue to improve this knowledge and adapt our priorities as it becomes available.