

# Towards a conceptual model of the role of *Phalaris* in Australian ecosystems

Laura Williams, Tim Cavagnaro, Paul Reich and Sam Lake<sup>1</sup>

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**Abstract:** *Phalaris* is a conundrum: a very valuable pasture species that can be a very serious environmental weed. *Phalaris aquatica* (Toowoomba canary grass)—a perennial from the Mediterranean region—was first introduced into Australia over 120 years ago. While scientists work to develop new and better cultivars of *P. aquatica* for improved pasture, these cultivars are probably leaking, as new and improved weeds, into riparian zones across southern Australia. Once established, *P. aquatica* has deleterious impacts on native plant and animal diversity and can alter ecosystem function. Although a considerable amount of research on *P. aquatica* has been undertaken, there has been little effort to compile and summarize this information in a readily accessible format. The effective management of *P. aquatica* poses a substantial challenge and must be predicated on a thorough understanding of its taxonomy, biology and ecology.

## Project Aims:

- A detailed review of current knowledge on the biology and ecology of *Phalaris*
- A better understanding of why *Phalaris* is successful, focusing on riparian zones and ecosystems being rehabilitated
- A strong starting point for the development of management strategies for *Phalaris*

## Methods:

Collate and synthesise the available literature and knowledge relevant to understanding *Phalaris* in Australian ecosystems.

## Preliminary Results

- Although there are five species of *Phalaris* recorded in the Goulburn Broken catchment, we have found (literature, discussion, and survey) that *P. aquatica*, a perennial species, currently poses the most serious threats to riparian ecosystems.
- Many of the species that make *P. aquatica* a successful pasture species predispose it to being a serious environmental weed.
- The vast majority of studies (95%) have focused on *P. aquatica* from an agricultural perspective. Although important insights can be gained from this literature, it is clear that dedicated studies in riparian and natural ecosystems are needed.
- Our review has identified that given the delicate nature of riparian ecosystems, carefully considered management plans need to be developed rather than an ad-hoc approach.

## Application to Management/works to be undertaken

*P. aquatica* has broad-ranging ecological implications, particularly in the context of restoring riparian zones, and currently there are few options available for effective management. If *P. aquatica* is to be successfully managed, several knowledge gaps should be addressed. We recommend that future works include a thorough inventory of

its distribution and identity (cultivars), its ecology in riparian ecosystems, and the efficacy of different management options.

### **Project Photographs**



### **Contact Information**

Laura Williams  
School of Biological Sciences, Monash University  
Email: [laura.williams@sci.monash.edu.au](mailto:laura.williams@sci.monash.edu.au)  
Tel: (03) 9905 5658

Dr Tim Cavagnaro  
School of Biological Sciences, Monash University  
Email: [tim.cavagnaro@sci.monash.edu.au](mailto:tim.cavagnaro@sci.monash.edu.au)  
Tel (03) 9905 5793

Dr Paul Reich  
School of Biological Sciences, Monash University  
Email: [paul.reich@sci.monash.edu.au](mailto:paul.reich@sci.monash.edu.au)  
Tel: (03) 9905 5608