

## Assessing invasiveness of the potential sleeper weed *Centaurea solstitialis* L.

Gregory Hay<sup>1</sup>, José Facelli<sup>1</sup> and F. Dane Panetta<sup>2</sup>

<sup>1</sup> School of Earth and Environmental Sciences, The University of Adelaide, North Terrace, Adelaide, South Australia 5005, Australia

<sup>2</sup> Department of Natural Resources, Alan Fletcher Research Station, Sherwood, Queensland 4075, Australia

**Summary** The deep-rooted herb *Centaurea solstitialis* L. is an annual, yellow flowering thistle that grows patchily in disturbed areas of the mid-northern parts of South Australia. It also grows in parts of Victoria, New South Wales and Queensland where it is generally considered more of a problem than in South Australia. The species originates from Eurasia and has become a significant problem in the western United States where it covers millions of hectares of productive land, particularly in the Mediterranean climate areas of California. *Centaurea solstitialis* has not become a major economic or environmental pest species in Australia, so little is known of its ecology here.

This project will investigate factors that may give rise to the different invasion histories of the species in various parts of Australia and the US and importantly, determine whether it has the potential to become a major pest species. *Centaurea solstitialis* has been

recorded in South Australia for over 120 years, and seems unlikely to become a problem without a significant change in either a) the attributes of the species, e.g. through the introduction of more invasive genotypes, or b) the recipient community through changes in land management. We will conduct competition experiments using local and alien genotypes of *C. solstitialis* grown with native and exotic grasses. The experiments will be conducted in glasshouse and field conditions using different nutrient regimes, water regimes and rooting depths. In addition, we will study germination dynamics and relations with soil microflora of the different genotypes. We hope to shed light on the potential for *C. solstitialis* to become more invasive in disturbed areas such as roadsides and crops, and particularly the remnant native grasslands of South Australia.

**Keywords** Sleeper weed, *Centaurea solstitialis*, thistle, invasiveness.