Profile of Eleanor Dormontt – 2010 recipient of the CAWS Early Career Researcher Award

After completing Honours in 2004 at the University of Bristol in the UK, Eleanor worked for the Sussex Wildlife Trust on ancient woodland characterisation and whole landscape level evaluation of important conservation areas. In 2007 Eleanor relocated to Adelaide to begin her PhD on the evolution of invasiveness in *Senecio madagascariensis* (fireweed), an invasive plant of eastern coastal pastures in Australia.

As examples of contemporary colonisations, invasive species offer a unique opportunity to study the processes of establishment and spread from both an ecological and evolutionary perspective. Despite relatively short introduction histories, many invasive species show evidence of divergence from their putative sources in the native range, indicating that rapid adaptation may be occurring.

Using fireweed, Eleanor is investigating whether adaptive evolution may have facilitated invasion. Specifically she is testing various hypotheses including the potential roles of hybridisation with a native congeneric; admixture between multiple sources of introduction; and selection of adaptive genes in specific environments. Using a combination of historical, ecological, geographical and molecular data, she is seeking to better understand the invasion dynamics of this species and the extent to which Australian populations are differentiating from their South African source(s).

In 2008 Eleanor was the recipient of the CAWS Student Travel Award which she used to attend the symposium 'Fifty years of invasion ecology - the legacy of Charles Elton', hosted by DST-NRF Centre of Excellence for Invasion Biology, Stellenbosch, South Africa. This meeting led to a book of the same name due for publication in 2010 and for which Eleanor is the primary author of chapter 14, entitled "Is rapid adaptive evolution important in successful invasions?"

This year Eleanor will use her CAWS Early Career Researcher Award to visit the research laboratory of Professor Richard Abbott at St Andrews University in Scotland. Together they will undertake the first genetic survey of the major global fireweed invasions, allowing inferences to be made regarding the native sources responsible for the different invasions of fireweed. Eleanor's work will have several wide-ranging implications, including influencing risk-assessment criteria for biosecurity, aiding in the search for suitable biocontrol agents, and broadening our general understanding of the mechanisms of rapid evolution in invasive species.