

## **Weeds at home: observations and theory from travels in the western Mediterranean and South Africa**

Steven Hopper

Plant Conservation Biologist, University of Western Australia

([steve.hopper@uwa.edu.au](mailto:steve.hopper@uwa.edu.au))

**Summary** Parts of Australia experiencing a Mediterranean climate have exceptional numbers of, and vulnerability to, invasion from weeds. This presentation offers a review of recent field studies and development of theory pertinent to the southern Australian weed flora. Weeds may be rare in their native range due to natural checks on population growth. However, developing a predictive framework around the population biology and invasive potential of weeds remains fraught. Each species may have different herbivore/pathogen relationships and may respond differently to climate change, a predictable observation of

idiosyncratic behaviour, as seen from the context of Darwinian evolutionary biology. Weeds of these focus regions mainly evolved on young, often-disturbed fertile landscapes (YODFELs). The exceptional vulnerability to weed invasion in southwest Australia occurs on old climatically-buffered infertile landscapes (OCBILs) that endure major soil disturbance and fertilisation. OCBIL Theory may be helpful in shedding fresh light on this topic. Nevertheless, new hypotheses embodied in this theory need further rigorous critical experimentation and testing.