## **Christine Sabine Sheppard**

I am a PhD candidate at the Centre for Biodiversity and Biosecurity at The University of Auckland, supported by The University of Auckland International Doctoral Scholarship. Previously I have completed a BSc and MSc in Environmental Sciences at the Swiss Federal Institute of Technology in Zurich, Switzerland. My main research interests are weeds and the effects of climate change, with my PhD focusing on the potential distribution and invasiveness of new weeds under different climate change scenarios.

Climate change and weeds have each been studied extensively, but few studies have considered their combined and potentially synergistic impacts. Climate change may provide opportunities for weeds to expand into regions where they previously could not survive and reproduce, especially for species originating from warmer areas introduced into temperate areas. Bioclimatic models have become a popular – and often the only feasible - tool to provide a first insight to the threat weeds may pose in the future. However, concerns have been raised as to the validity of such models when applied to novel climates or regions. In this study, bioclimatic models (based on a maximum entropy algorithm) are applied to three potential new weeds in New Zealand from warmer native ranges (Archontophoenix cunninghamiana, Schefflera actinophylla and Psidium quajava) using a range of climate change scenarios. To validate the models, field trials are conducted to test whether these plants perform as expected in suitable, potentially suitable and unsuitable habitats (as identified by the models). Furthermore, shadehouse and growth chamber experiments are undertaken to investigate growth of these three plant species under climate change conditions and effects of competition on native species. My PhD project provides evidence of the potential weediness of these three recently naturalised plant species. If they are controlled at an early stage of their naturalisation, the cost-benefit ratio will be very high. Only when we have a better understanding of how climate change will affect weeds and their distributions, can appropriate management measures be taken.

With assistance of the CAWS Student Travel Award, I have the opportunity to attend NEOBIOTA, the 7<sup>th</sup> European Conference on Biological Invasions. I wish to contribute to this conference by bringing an Australasian perspective to global weed issues, and gain new insights and ideas from other delegates to aid my professional development as well as initiate future collaborations between European and Australasian weed research.

