University of Western Sydney
Bringing knowledge to life

RESEARCH DIRECTIONS

Seed production for restoration

Dr Paul Rymer of the Hawkesbury Institute for the Environment and the School of Science and Health together with Dr Paul Gibson-Roy from Greening Australia (NSW) Ltd., has been awarded a UWS Research Partnership grant to investigate ecological and genetic issues in producing seeds for ecological restoration.

'Ecological restoration is critical for the functional enhancement of urban and agricultural environments, where the negative effects associated with fragmentation continue to erode natural resources', says Dr Rymer. 'Currently most seed is sourced from local remnant vegetation but it is limited in quantity and quality due to the small population size. The establishment of seed production areas has the potential to generate the seed needed to meet increasing restoration targets. At this time, however, we don't have empirical data and guidelines that ensure the fitness of the plants and the genetic diversity are maintained. This project will investigate the ecological and genetic issues in seed production.'

The research team will collect seed from multiple sites, across a range of geographic and environmental distances, and apply controlled genetic mixing experiments. Plant material will be analysed for chromosomal and genetic variation in winter and spring to identify potential issues with mixing. The plant production area and the experimental treatments will be established at the start of the project in spring, which will flower and seed in summer. Seed viability will be estimated in late summer to determine the consequences of the mixing.

The findings from this study will help improve current best practice in seed production for ecological restoration, ensuring genetic diversity for climate change is maximised while maintaining the integrity of local populations. The main outcome being the restoration of functional ecological landscapes in Greater Western Sydney.

Project Title: Genetic issues in seed production for ecological restoration
Funding has been set at: $23,200
Contact Details: p.rymer@uws.edu.au
http://www.uws.edu.au/hie
July 2013