Optimisation of *Eucalyptus nitens* seed production systems

Amount: $30,746 (2015 rate) tax free scholarship with possible 6 month extension plus project operational funds

Location: Hobart, Tasmania

Eligibility: Domestic and International students with First Class or Second Uppers Honours/ Masters or equivalent

Submission dates for applications are listed on http://www.utas.edu.au/arc-forest-value/phd-project-opportunities

About the Centre

This research project is part of the ARC Centre for Forest Value. The Training Centre will build the capacity to shift the forestry and wood products sector from a traditional, resource driven, low-technology base to a market-driven, precision-manufacturing focused industry that applies modern technologies and business approaches to the value chain from germplasm to commercial buildings, and from production to restoration plantings.
Learn more at www.utas.edu.au/arc-forest-value

Project Overview

This project aims to enhance plantation productivity and profitability of Australia's main plantation species by better matching genotypes to environments and silviculture. It will link closely with partner breeding and seed production programs. It aims to determine:

1. Patterns of genotype-by-environment interactions to better define germplasm deployment zones;
2. The sustainability of genotype performance under multi-rotation coppice regimes; and
3. The genetic opportunities and trade-offs amongst traits affecting industrial objectives (e.g. for chip, pulp, timber, engineered wood products and energy production) and risk traits (drought/pest/disease risk)

Specific Project

In Australia, all advanced generation *E. nitens* is deployed from open-pollinated seed orchards. The most advanced of these seed orchards are established from selected clones (grafts). As with most eucalypts, *E. nitens* growth and survival is reduced with inbreeding which arises through self-pollination (within or between ramets of the same genotype) or the crossing of related genotypes.

The capturing of predicted genetic gains from these orchards is thus dependent in part on the avoidance of inbreeding. This project will study the variation in outcrossing and related matings in *E. nitens* seed orchards and the extent to which this is under genetic control, relates to factors such as variation in flowering, and impacts field performance of progenies.

The ARC Industrial Transformation Training Centre for Forest Value is supported from the Australian Research Council's Industrial Transformation Training Centres scheme (project number IC150100004).

To submit an expression of interest or for general information, please contact the Centre for Forest Value at forest.value@utas.edu.au
For information related to this project please contact Professor Brad Potts Brad.Potts@utas.edu.au or Professor Mark Hunt Mark.Hunt@utas.edu.au for more information.

Partner Organisations

SFM forest products

forico future fibre

Forestry Tasmania

nsfp Neville-Smith Forest Products

Greening Australia

UNIVERSITY of TASMANIA

ISLAND WORKSHOP

Forest&Wood Products Australia
Knowledge for a sustainable Australia