

RESEARCH

Project 5.1

Project 5.3

PROJECT 5.2**Biodiversity values and landscape context in reforestation***Project Leader: Associate Professor Carla Catterall (GU)*

It is now widely recognised that clearing of tropical and subtropical rainforests during the past century has resulted in both loss of biodiversity and disruptions to catchment, ecological and physical processes. Rainforests are also well known as distinctively evolved repositories of exceptionally high levels of biological diversity. In recent years much attention has been directed to conserving those areas that remain. However native forest cover in parts of the landscape has been cleared or otherwise degraded beyond a state where rescue can be achieved simply through protection of existing remnant forest. Many of these areas are also highly valued for agriculture, livestock production, and residential uses.

The current challenge is to devise methods of sustaining and restoring both diversity and ecological process in these degraded multiple-use landscapes, and of assessing and monitoring the associated "performance" of biodiversity and process at the site and landscape levels. Meeting this challenge requires an improvement in fundamental knowledge, through a range of approaches, including quantitative comparisons of the performance of different restoration strategies in relation to species and processes, and site-specific process-oriented studies. It also requires the development of monitoring indices for use in biodiversity assessment. This project aims to provide such knowledge. The project lies directly within the Rainforest CRC goal of sustainable management and conservation.

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In areas that have been cleared for long periods of time, regrowth may be dominated by introduced weedy plants. For example, regrowth dominated by camphor laurel (*Cinnamomum camphora*) trees covers extensive areas of cleared rainforest land in Australia. However, camphor laurel patches attract fruit-eating birds that disperse the seeds of

rainforest plants. Many seedlings of rainforest plants have recruited to camphor laurel patches and, in the long-term, dominated the regrowth. This process could be hastened by careful and strategic management interventions, but this requires a change in current attitudes towards the role of weeds in ecosystem restoration.

This 'Issues' paper covers much of the Honours research carried out by Wendy Neilan of Griffith University and discusses some of the processes associated with rainforest regeneration using established camphor laurel regrowth patches as a case study.

Hard copies can be ordered by contacting the Rainforest CRC on (07) 4042 1246, or you can download a [PDF \(897Kb\)](#).



POSTGRADUATE STUDENTS

Anthony ADKINS (JCU) Masters

Effects of fragmentation on breeding pair density and reproductive success in understorey rainforest bird species

Naima FINE (GU)

Effects of fragmentation on seed predators and plant recruitment in remnant rainforests of the Big Scrub

Peter GRIMBACHER (GU) PhD

Beetles and rainforest restoration

Franziska HAUSMANN (GU) Masters

Corridors and connectivity - assessing their role in rainforest fauna conservation

Elisha LADHAMS (UQ) PhD

Impacts of management on spider and mite communities in hoop pine plantations and adjacent rainforest remnants of south-east Queensland

Stephen MCKENNA (GU) PhD

Regeneration dynamics in rainforest fragments

Cath MORAN (GU) PhD

Key plant resources, vertebrate frugivores and rainforest regeneration

Akihiro NAKAMURA (GU) PhD

Investigating associations between selected arthropod taxa and rainforest restoration: a field experiment

Wendy NEILAN (GU) Hons

An investigation into the potential for rainforest to regenerate in patches of regrowth dominated by the woody seed, Cinnamomum camphora, in north-eastern New South Wales

Andrea PULLO (JCU)

Soil seed bank in tropical rainforest revegetated sites

Billie ROBERTS (GU)

Habitat characteristics of flying-fox camps in south-east Queensland

Elinor SCAMBLER (GU) Masters (suspended)

Assessment of temporal changes in rainforest bird assemblages

Kim STEPHENSEN (JCU) MAppSci

Invertebrate diversity in restored tropical ecosystems

Jason WEBER (GU) Hons

Patterns and roles of introduced plants in rainforest restoration

Jessie WELLS (UQ) PhD

Spatial patterns of tree species colonisation in secondary rainforest

Natasha WITTING (GU) PhD

The effects of rodent seed predation on rainforest degradation and recovery in southeast Queensland



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