

# NERP Tropical Ecosystems Hub Project Factsheet

## What is at risk? Identifying rainforest refugia and hotspots of plant genetic diversity in the Wet Tropics and Cape York Peninsula

Project leader: Professor Darren Crayn (JCU)

### Project summary

Far North Queensland's tropical rainforests are home to much of the remaining ancient Gondwanan flora. As a result, Queensland's rainforests are incredibly rich in species and contain one of the most complete, intact and continuous records of flowering plant evolution. This project will map the genetic and phylogenetic diversity of northeast Queensland rainforest plants and fungi with a focus on the mountaintop species, which are regarded as among the most at risk from climate warming. The team will deliver a report on conservation priorities for this region based on the data produced during the life of the project.

### Why this research is needed

The plant species that occur in this region are relatively well documented, but the genetic diversity within these species is unknown. As genetic diversity contributes to resilience to environmental change, measuring this diversity and charting where in the landscape it is concentrated will provide a solid foundation for prioritising conservation efforts in northeast Queensland's rainforests.

### Research-user focus

This project will facilitate rainforest conservation and management by local, state and Australian Government bodies, particularly Wet Tropics Management Authority (WTMA), Australian Natural Heritage Assessment Tool (ANHAT), Heritage Division, the Department of Sustainability, Environment, Water, Population and Communities, Terrain NRM, TERN-LTERN and others.

Project Partners:



Find this project at [www.nerptropical.edu.au](http://www.nerptropical.edu.au)

Theme 1: Assessing Ecosystem Condition and Trend

Program 3: Condition and trends of North Queensland rainforests

Project: 3.2



Canopy of *Leptospermum woornooran* trees, one of the vegetation communities thought to be most at risk.



The rainforests of NE Queensland contain great diversity of plant species, and harbour a rich Gondwanan relict flora.

### Outcomes

- Production of phylogenetic diversity maps, enabling easy identification of areas harbouring large shares of earth's evolutionary history.
- Assessment of genetic diversity of mountain-top flora enabling effective conservation.
- Report on conservation priorities for the Wet Tropics based on genetic data.
- Publications describing new and/or revised species of plants and fungi.

Photos (from top): Andrea Lim; Gary Wilson