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PROJECT 6.5
Dynamic models for management
Project Leader: Dr Chris Margules (CSIRO)

Earlier CRC has resulted in comprehensive databases on the distribution of Wet Tropic species. These databases provide one of the best opportunities currently available in world for examining patterns and processes in a tropical rainforest to provide a sound basis for conservation management decisions. The purpose of this project is to develop concepts and strategies that incorporate dynamic ecological and evolutionary processes relevant to rainforest systems into management tools for conservation planning, setting of priorities, and monitoring biodiversity values.

The project will use explicit GIS-based modelling tools and other quantitative methods to develop management models that incorporate consideration of ecological processes and patterns with economic costs and benefits. To this end, several pioneering tools will be expanded upon and tested with the rainforest databases, including: (a) tools to identify gaps in data collection, including species surveys; (b) methods to predict the effectiveness of different species groups to act as surrogates for other groups; (c) tools to map measures of biodiversity based on representation and persistence and the incorporation of those measures in conservation planning; and (d) methods for identifying areas of high conservation value based on the probability of persistence and incorporating information on social and economic trade-offs. Outcomes and results will be incorporated into different management models and tools for conservation decision-making.

POSTGRADUATE STUDENTS

Susan CAMERON (University of California) PhD

Dynamic models of ecological and evolutionary processes in the Australian Wet Tropics

Gaynor DOLMAN (UQ) PhD

Evolution and conservation of herpetofauna in the Wet Tropics rainforests of Australia

Anna KOETZ (JCU) PhD

Cultural and genetic divergence in the Chowchilla, Orthonyx spaldingii

Melinda LAIDLAW (UQ) PhD

The determinants of small-scale vegetation patterns in Australian sub-tropical rainforest

Michael Guo-Zhang SONG (UQ) PhD
The patterns of regeneration of tree species in a subtropical rainforest