

RESEARCH

Project 4.1

Project 4.2

Project 4.5

PROJECT 4.3

Improving GIS models of ecological impacts using high resolution remote sensing

Project Leaders: Professor David Gillieson (JCU)

High resolution remote sensing provides a cost-effective way to enhance monitoring of ecological impacts in rainforest and associated environments. New multispectral sensors with resolution around one metre or less have potential to map and identify small patches (10 - 15m²) of land covers such as weeds, disturbed ecotones, patch erosion or riparian vegetation. These sensors can be mounted on aircraft (Specterra, ADAR) or satellites (Ikonos, Orbimage). Conventional satellite imagery can only map patches down to 0.3ha (3000m²) and thus is more useful at regional scales. In this project, the combination of digital image analysis (using advanced sub-pixel classifiers) and intensive fieldwork (to define characteristic reflectance curves and ecological characteristics of individual vegetation types) will allow us to map and monitor areas of change so as to better focus expensive ground investigation and amelioration.

POSTGRADUATE STUDENTS

Barbara PAULUS (JCU) PhD

A biodiversity survey of micro-fungi on leaf litter in a Wet Tropics rainforest