

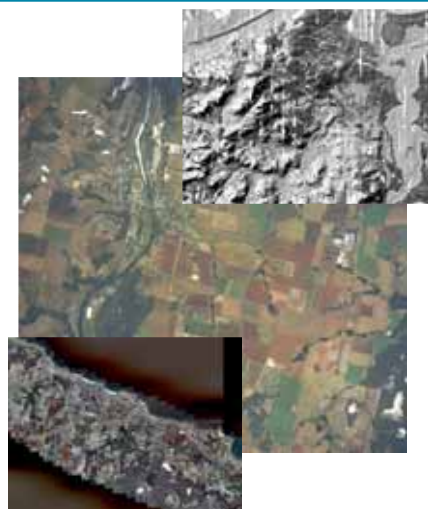
Landscape Logic Project 1: Spatial analysis and database

PhD topic: High spatial resolution remote sensing for habitat modelling of fragmented environments



WHAT

This research investigates the use of high spatial resolution remote sensing for habitat modelling, particularly in fragmented landscapes. Fragmented environments, such as peri-urban areas, are some of the most difficult to model due to the lack of accurate up-to-date maps of an appropriate scale. These systems are often spatially complex with habitat patches varying in size from median strips (~10m²) to large vegetation remnants contained within national parks (100km²). Remote sensing provides a solution to these mapping challenges given the development of new methods to evaluate image objects that may be spectrally and spatially similar & confound mapping at high spatial resolutions.



HOW

The project uses high resolution satellite imagery, aerial photography and LiDAR data in combination with ground-based, on-site observations of native vegetation to quantify vegetation condition and evaluate its suitability as habitat for a range of biota. A range of vegetation attributes – including floristics, structure of multiple layers, down and woody debris, and tree hollows – are systematically recorded to determine the efficacy of the remotely-sensed datasets to capture floristic and structural composition. These attributes can be used to provide an objective measure of the condition or health of the vegetation and the quality of habitat for biota. A number of the vegetation and site attributes can be used for spatially modelling vegetation condition & the habitat and distribution of species.

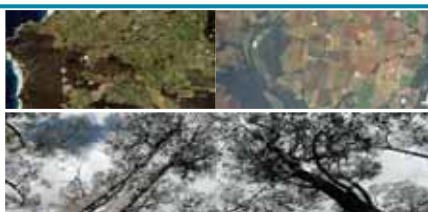
Research has been conducted across fragmented landscapes in Victoria, Tasmania and New South Wales, increasingly in partnership with state agencies and catchment management organisations responsible for the management and restoration of native vegetation. The Rubicon catchment in northern Tasmania is a recent focus for research.



WHO

Alex Lechner (PhD, RMIT)

Supervisory panel: Prof Simon Jones (RMIT), Prof Tony Norton (UTAS) and Dr Sarah Bekessy (RMIT)



BRINGING IT ALL TOGETHER

These doctoral projects contribute significantly to the native vegetation condition evaluation, monitoring and modelling research programs of Project 1 & Project 3 of Landscape Logic, and will help underpin the science required for future NRM investments to improve native vegetation condition at the catchment scale in Australia.