

# Gondwana Link meets decision theory

## Getting a GRIPP on what's important

*It's bigger than Ben Hur and if you've had any involvement in the Australian conservation scene in recent years it's likely you will have heard of it. It's Gondwana Link, a massive, multi-organisation, on-ground conservation project transforming vast swathes of land in the south west corner of the Australian continent. It hopes to link up several of Western Australia's conservation icons including the Karri forests, the Stirling Ranges and the Great Western Woodland through land restoration, protection and management. Now an innovative and wide ranging research investigation known as GLink's Research on Identifying Priorities Project (or GRIPP) has been established to explore how environmental decision making and spatial prioritisation might contribute to improving the conservation outcomes of Gondwana Link. GRIPP's lead investigators are Dr Kerrie Wilson and AEDA's Professor Hugh Possingham (both based at the University of Queensland). Here Kerrie provides some background.*

**A**EDA researchers and their collaborators are involved in solving a diverse array of applied conservation problems ranging from optimal monitoring to spatial planning. Advances and breakthroughs in the research have been plentiful, but applying them in the real world remains a major challenge.

While identifying broad priority areas for biodiversity conservation is an important first step, it is widely recognised that we need to work at a fine spatial scale in order to achieve conservation outcomes on the ground. To do this we require a spatially-explicit planning process to improve decisions made across complex social and ecological landscapes.

At the same time we require efficient and effective ways of collating information to inform decisions on investment and then evaluate their impact. And as we do this we need to account for synergistic interactions between land cover changes and climate change.

Finally, while conservation decision making benefits from strategic planning, how do we ensure plans are flexible enough to accommodate new opportunities – events or knowledge that often emerge unexpectedly? For example,

**“It is rare for such a range of activities to be undertaken concurrently in an integrated fashion over such a large area”**

how do we incorporate a new restoration technique, or improved ecological understanding, or acquire an important property coming on the market, or make the most of a commercial opportunity to subsidise the restoration of cleared habitat?

So, here are three massive challenges:

- 1. Fine-scale spatially-explicit planning across complex landscapes**
- 2. Factoring in specific impacts of climate change and the potential synergistic effects of climate change and other land cover changes**
- 3. Accommodating unforeseen emerging opportunities**

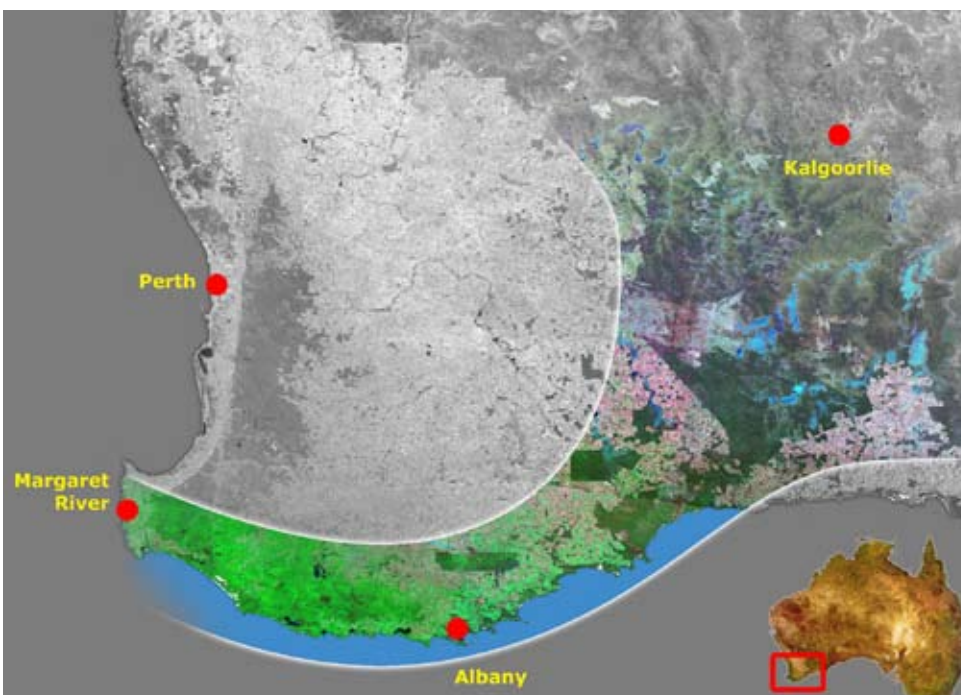
These are enormous challenges for conservation planning but if we can meet them we will be much better placed in supporting on-ground conservation works. And when it comes to landscape-scale conservation works in Australia, it's difficult not to think of Gondwana Link in Western Australia. Indeed, the formulation of these challenges was specifically motivated by the goal of improving the scientific and strategic planning in Gondwana Link.

## A unique test bed

Gondwana Link is a landscape-scale conservation project in the ecologically significant south west corner of Western Australia. GLink, as it's commonly called, extends from the Western edge of the Nullarbor Plain to the wet forests of the Margaret River region (see map). The aim of the Gondwana Link project is to reconnect fragmented ecosystems, and to protect, restore and maintain the fundamental ecological processes that underpin these ecosystems. This is being achieved through a range of activities including:

- developing the case for stronger protection of the public land estate;
- providing incentives for better land management, such as fencing and restoring bushland;
- purchasing bushland to protect and manage;
- purchasing and revegetating large areas of cleared land;
- developing ecologically supportive industries, such as commercial plantings of local species; and
- working to achieve social, cultural, and economic change where this strengthens support for ecological values.

The project has been built through an initial focus on reconnecting ecosystems between the Fitzgerald River and Stirling Range National Parks, and presenting the scientific



The Gondwana Link project area in south west Western Australia.



*GRIPP's advisory team:*

*Back Row (from the left): Ayesha Tulloch (UQ PhD Candidate), Dr Nicola Markus (Bush Heritage Australia), Dr David Freudenberg (Greening Australia), Dr Robert Lambeck (Greening Australia), Keith Bradby (Gondwana Link Coordination Unit), Professor Hugh Possingham (UQ)*

*Front Row: Dr Michael Looker (The Nature Conservancy); Dr Trudy O'Connor (The Wilderness Society); Paula Deegan (UQ); Dr Kerrie Wilson (UQ).*

## GLink meets decision theory

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case for holistic conservation protection and management of the vast Great Western Woodlands area (See *DPoint #20* for background on the Woodlands). Critical planning is underway to extend the program into other parts of Gondwana Link.

While elements of the Gondwana Link project are occurring elsewhere in Australia (collectively they are often referred to as biolinks), it is rare for such a range of activities to be undertaken concurrently in an integrated fashion over such a large area. GLink represents an outstanding example of a landscape-scale conservation project in Australia, and the project is recognised locally and internationally for its grand vision, integrated approach, and focus on ecological resilience.

## Getting a GRIPP on the system

All of this means that GLink provides a unique test bed to facilitate the research and development of conservation theory, and its application to on-ground conservation in a real world situation. And the opportunity has been seized by the organisations involved in GLink together with conservation research institutions from around Australia (including AEDA). Together they have created the GLink Research on Identifying Priorities Project (or GRIPP) which seeks to address the three planning challenges outlined on page 10. GRIPP recently received funding by the Australian Research Council (with generous support from GLink organisations).

GRIPP builds on the productive collaborations between Dr Kerrie Wilson and Professor Hugh Possingham at the University of Queensland (and partner organisations), the strong technical and financial support provided by The Nature Conservancy (Dr Michael Looker) and engagement of key GLink organisations Greening Australia (Dr David Freudenberg and Dr Robert Lambeck), The Wilderness Society (Dr Trudy O'Connor), Bush Heritage Australia

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## Prioritising conservation actions

One of the major tasks of the GLink's Investigating Priorities Project is to develop a fine scale spatial prioritisation process that allows multiple conservation actions to be prioritised. That's not to say that effective prioritisation isn't already happening in GLink or that any new prioritisation frameworks arising from GRIPP will simply displace what's being done at the moment.

Indeed, the current planning approach being used in Gondwana Link is Conservation Action Planning (or CAP) and is highly regarded in Australia and overseas. It was devised by The Nature Conservancy (TNC) and has been applied by TNC and other major conservation organisations around the world. CAP involves identifying a series of ecological targets together with indicators of their condition and threats to their persistence. These indicators are then strategically used as the basis of on-going management and monitoring.

CAP is valuable in extracting expert information and bringing together information from disparate sources. And it has already been applied in one region (the Fitz-Stirling operational area) of Gondwana Link. CAP will be employed and extended in GRIPP by more closely linking the process with spatial ecological and social data and melding the planning process with a return-on-investment framework that includes the cost and likelihood of success of the planned conservation action. The goal is to enable fine-scale decisions to be made about the relative importance of investing in diverse conservation actions and across areas with variable ecological and socio-economic characteristics. This is particularly relevant to this project as GLink covers such a varied landscape.



*Hugh Pringle, an ecologist with Bush Heritage Australia, measuring a vegetation transect in a GLink restoration planting. (Photo Chinch Gryniwicz)*