



Native Vegetation

Project Fact Sheet 6:

ANU34

Vegetation restoration and landscape design for enhanced biodiversity conservation

Principal Investigator:

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Host Organisation:

Centre for Resource and Environmental Studies, Australian National University, Canberra

Duration of project:

July 2001 to July 2005

Project Summary

Revegetation and restoration of native vegetation is gaining pace in Australia at increasing cost to the community. However, little is known about the value of such restoration efforts in contributing to healthy and productive landscapes, including their contribution to conservation of biodiversity. Indeed, the relative effectiveness of current guidelines for landscape design and vegetation restoration is largely unknown. Often this is because the guidelines are based on theories that have not been tested.

The project will explore these gaps in our knowledge of landscape design and vegetation restoration. Collecting and analysing data over a three-year period will allow the project team to describe and analyse the effects of vegetation restoration on biodiversity, at both the farm and landscape level. It will provide new insights into the conservation value of restored and remnant vegetation, and how restoration efforts fit into a whole-of-landscape vegetation management context. The results from the project will assist vegetation managers to set improved objectives and to better design future landscapes in the multi-use production areas of rural Australia.

Project Objectives

The project's objectives are to:

- generate high quality and widely applicable data to guide landscape restoration that maximises biodiversity conservation;

- estimate the effects of revegetation using native species of vertebrates (birds, mammals and reptiles) and to assess whether the effects are consistent across different landscapes, farm units and regions; and
- compare vertebrate abundance across a wide range of vegetation types within different landscapes and farm units to identify factors contribution to conservation values for vertebrates.

Approaches and methods

Several landscapes in the Riverina region of southern NSW have been selected for possible inclusion in the project, based mainly on the amount of existing and planted vegetation, land-use, and terrain. The major focus will be in the Albury and Gundagai areas. Three landscapes have already been selected in the June Landcare Network area.

In each of the landscapes selected for the study, the project team will survey birds and other animals on several sites on two farms. One of the farms will have plantings, the other one will not. The study relies on the help of landcare groups and landholders. Two full-time Research Assistants live and work in the study region, which also greatly facilitates project operations and communication.

Benefits

The project provides benefits to a wide range of people who research or manage native vegetation, including:


- new ‘experimental’ design for assessing species responses to site, farm and landscape conditions;
- new guidelines on how, where, and why to restore vegetation for the enhanced conservation of biodiversity; and
- a much greater emphasis on strategic planning about which areas to restore, why they should be restored, and how restored areas fit within farm and landscape level patterns of vegetation cover and land use regimes.


The outcomes of the project will, in many cases, be based on statistical models and will provide predictions and an assessment of whether these are of practical use. For example, typical outcomes may predict a 40 percent increase in

probability (with a 95 percent confidence interval) of species a, b and c occurring for each additional five metres of width (strips) of restored vegetation, or each additional 3 hectares of restored vegetation.


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