



Native Vegetation

Project Fact Sheet 1:

QNR28

Ecological thresholds for native vegetation management in southern Queensland

Principal Investigator:

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Host Organisation:

Queensland Department of Natural Resources and Mines, Brisbane, Qld

Duration of project:

July 2001 - June 2004

Project Summary

Remnant native vegetation has been greatly fragmented by land development in Australia, however there is little data available on the long-term impacts of such fragmentation on the ecological integrity of remnants. The project will provide data about these long-term impacts and revise the principles behind current assessment of land clearing, leading to improved prescriptions for the management of remnant native vegetation. The project will also develop tools to assist vegetation managers to assess and report on broad vegetation condition.

The project focuses on the grassy woodlands in southern Queensland. Ecological condition will be assessed at sites within three selected landscapes around Roma and relationships described between ecological function and degree and patterns of clearing in these landscapes. The results will help inform both policy formulation and on-ground management in Queensland as well as other regions of Australia.

Project Objectives

The project's objectives are to:

- establish relationships between degree and patterns of fragmentation, and selected ecological indicators, as a means of assessing the long-term ecological sustainability of remnants in agricultural landscapes;
- quantify thresholds for management of ecologically viable remnant vegetation;
- provide tools for rapid assessment of ecological condition of remnants for use by vegetation management officers and landowners;

- contribute to policy formulation (modification) about native vegetation management including the development of acceptable management solutions and their associated performance requirements; and
- communicate major findings of the project to the wider scientific and land management communities, regional vegetation management committees and government policy advisers for adoption and application in native vegetation management including in particular, the communities of interest in the Murray-Darling Basin.

Approach and Methods

Landscapes will be selected using regional ecosystem mapping data to represent each of three levels of clearing: from intact (uncleared) through variegated (partially cleared) to relictual (mostly-cleared). The ecological condition of remnants within each landscape will be assessed using a range of indicators that, together, provide a 'picture' of the ecological function of the landscape as a whole. The indicators include: vegetation health; soil biophysical processes; use of remnants by selected wildlife (birds and reptiles); invertebrates indicative of ecological stability; floristic composition and vegetation structure; and genetic architecture and demography of selected plant species.

Benefits

The project will develop scientifically defensible thresholds for landscape status, viability and condition that:

- inform vegetation management frameworks and policies, regional vegetation management policies and farm planning processes; and
- lead to modification, where applicable, of performance requirements and acceptable solutions.

Thresholds at which loss of biota rapidly increases have been identified elsewhere in the world. It is important to establish where these thresholds lie for a range of indicators, and how they interact. This provides a strong foundation for developing a range of practical and acceptable landscape design solutions that conserve biodiversity and maintain landscape function.

The project complies with Queensland State priorities and requirements for vegetation management, including:

- requirements for quantitative data to support regional and State policy frameworks (including land development legislation, government endorsed regional and state vegetation management committees, regional and state based outcomes for vegetation protection in the landscape, and clearing application assessment codes contained in the state policies for vegetation management on freehold and leasehold land);
- requirements for quantitative data to support vegetation management extension; and
- research actions under the Queensland Work Plan formulated for the ANZECC National Framework for the Management and Monitoring of Australia's Native Vegetation together with linkages to the National Action Plan for Salinity and Water Quality.


The project will produce a number of tools for vegetation managers in Queensland that will also be useful to managers in other states:


- reporting formats to describe ecological indicators of remnant function for eucalypt-dominated grassy woodlands in southern Queensland (southern brigalow belt biogeographic region);
- factsheets on biodiversity and remnant configuration; and
- indicator checklists and guidelines for assessments of vegetation status, condition and viability – for example for use by vegetation management officers.

The project proposes to distribute information packs of the above materials to make presentations to Regional Vegetation Management Committees and the Queensland Ministerial Advisory Committee on Vegetation Management. Such activities may occur outside the timeframes of the project, but are an indication of the close relationship that exists between the science and policy communities involved in this project. Initial project planning, undertaken in consultation with Regional Vegetation Management Officers and others will decide on further decision support outputs.


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