NSW GOVERNMENT Primary Industries

PRIMARY INDUSTRIES
SCIENCE & RESEARCH

BRIEFING NOTE

Forest & Rangeland Ecosystems – Winter 2011

INTRODUCTION

This Unit undertakes research to support the sustainable use of rangelands and forests.

Rangelands research is aimed at ensuring that use of the semi-arid and arid lands of NSW achieves both production and conservation outcomes under a changing climate. To do this, we look at matching the forage demand of livestock and native and feral animals with the forage availability in a highly variable environment. We are concerned with the restoration of degraded land, and the capacity of semi-arid vegetation to adapt to climate change while supporting economic levels of grazing.

Research in forest biodiversity and ecology supports the development of guidelines for managing threatened species in commercial forestry operations, as well as practical methods of monitoring the ecological sustainability of these operations.

Understanding the principles of landscape design that allow production to be more successfully integrated with biodiversity conservation is the subject of developing research in both forestry and pastoral production systems.

RESEARCH CAPABILITIES

- Our staff have specialist expertise in wildlife biology (across a range of species groups), rangeland and restoration ecology, grazing management and economics.
- Our staff are located at Trangie Agricultural Research Centre and the Forest Science Centre, West Pennant Hills and undertake research at field sites widely distributed across the state.
- The group has strong links with Forests NSW and rangeland extension staff, and works in partnership with a range of Research & Development Corporations, Universities, and Catchment Management Authorities.

CONTACT US

For more information on our full portfolio please contact Ron Hacker on (02) 6880 8002 or *ron.hacker@industry.nsw.gov.au*

PROJECT UPDATES

GRAZING MANAGEMENT FOR NEW SHEEP BREEDS & GOATS IN WESTERN NSW (2010–13)

INTRODUCTION: New meat sheep breeds which require lower management inputs are rapidly gaining popularity in western NSW. Some producers are also turning from the traditional Merinos to farmed (as distinct from feral) goats. The new sheep breeds are reputedly hardier than the Merino and have different grazing habits. Management guidelines are required to support the management of both new breeds and farmed goats so that rangeland resources are not degraded by animals that have the capacity to thrive even under poor seasonal conditions.

FINDINGS: Reviews of the literature and focus group discussions with producers managing these species has identified the importance of developing strategies to ensure that animals can be grown and turned off at a rate commensurate with the very high reproductive rates which can be maintained even under poor seasonal conditions. Failure to balance reproduction and turnoff can rapidly lead to a population explosion with adverse consequences for land condition.

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PARTNERS: Lower Murray-Darling CMA

MONITORING FOREST BIODIVERSITY (2009–13)

INTRODUCTION: Biodiversity monitoring programs have a fundamental role to play in demonstrating stewardship of the environment and the effectiveness of conservation measures at multiple scales.

This information is needed:

» to provide feedback to managers, and data for reporting status and trends in ecological sustainability

» for State of the Environment reporting and forest certification,

» and progress towards State Plan Biodiversity Targets.

This project will support the conceptual development and provide the scientific foundation for a comprehensive biodiversity monitoring program in NSW forests. The program will investigate the cost-effectiveness of providing scientific information about the changing status of a wide range of plant and animal species. Opportunities for automatic recording of species occurrences are being investigated as well as the potential of remotely-sensed data to record changes in forest structure and to serve as a habitat surrogate for a wide range of species. Reporting protocols will also be recommended.

FINDINGS: Pilot studies in the Pilliga forests of north-western NSW and the tall, wet forests of the mid-north coast of NSW have shown that a standardised sampling protocol can provide robust and reliable information about changes in abundance for about 30% of forest birds, including representatives of a number of ecological guilds and some 'threatened' species. A state-wide grid based on this protocol allows an unbiased assessment of current 'resource condition' and the capacity to assess changes over time.

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