

Conserving woodlands

A network of reserves comprising cemeteries, stock routes, railway easements and roadside verges is being established to help manage and rehabilitate remnant patches of box woodlands in New South Wales.

The network's success will depend on the co-operation of Landcare groups, the Rural Lands Protection Board and local councils, according to CSIRO Division of Plant Industry scientist Dr Suzanne Prober.

Prober says a 'reserve' of woodland remnants can be achieved by linking sites together with the agreement of tenure-holders. The separately-owned sites can then be managed under common guidelines.

This management system has several advantages, Prober says. It will recognise high-quality sites otherwise too small to be considered for reservation; encourage integrated management; have a better chance of attracting funding; enable the future inclusion of other sites and raise awareness among local communities.

Before European settlement, grassy box woodlands covered millions of hectares between southern Queensland and northern Victoria. They featured eucalypt species such as yellow box, grey box and white box with an understorey of kangaroo grass wallaby grass, snow grass and wildflowers such as yam daisies, donkey orchids and chocolate lilies.

Scattered trees remain, but native understorey has been eliminated from most sites. Prober and her colleagues are studying the ecology and genetics of remnant grassy white box woodlands to develop a strategy for conserving threatened woodland ecosystems. They estimate that less than 50 hectares of the original woodlands remain intact.

The original composition and natural variation of white box woodlands is being pieced together by surveying quality remnants in NSW. These often have high species diversity. Prober says there is a gradual differentiation in the understorey from the south to the north of the state which would best be conserved by a geographic spread of reserves.

Bryony Bennett



A network of reserves is considered the best way of conserving remnant grassy box woodlands. Inset: The donkey orchid (*Diuris punctata*), once abundant from Queensland to Victoria.



Learning more about biodiversity

Restoring degraded habitats

Frankel OH & Soule ME, (1981) *Conservation and Evolution*. Cambridge University Press.
Saunders DA Hobbs RJ & Margules CR (1991). Biological consequences of ecosystem fragmentation: a review. *Conservation Biology*, 5(1): 18-32.

Soulé ME & Simberloff D (1986) What do genetics and ecology tell us about the design of nature reserves? *Biological Conservation*, 35: 19-40.

Conservation Biology: an evolutionary-ecological perspective, (1980) Eds: ME Soulé & BA Wilcox. Sinauer Associates, Massachusetts.

Nature Conservation: The Role of Remnants of Native Vegetation (1987) Eds: DA Saunders et al Surrey Beatty & Sons, Chipping Norton, NSW.

Nature Conservation 2: The Role of Corridors (1991) Eds: DA Saunders & RJ Hobbs. Surrey Beatty & Sons, Chipping Norton, NSW.

Nature Conservation 3: Reconstruction of Fragmented Ecosystems (1993) Eds: DA Saunders, RA Hobbs & PR Ehrlich. Surrey Beatty & Sons, Chipping Norton, NSW.

Reintegrating Fragmented Landscapes: Towards sustainable production and nature conservation (1992) Eds: RA Hobbs & DA Saunders. Springer-Verlag, New York.

Ecosystem function

Hobbs RJ (1992) *Biodiversity of Mediterranean Ecosystems in Australia*. Surrey Beatty & Sons Pty Ltd, Chipping Norton, NSW.

Walker BH (1992) Biodiversity and Ecological Redundancy. *Conservation Biology* 6: 18-23.

Fire management

Baird IA Catling PC & Ive JR. Prescribed burning for wildlife management at Nadgee Nature Reserve, Australia. *International Journal of Wildland Fire*. Submitted.

Ive JR Cocks KD & Parvey CA (1989) Using the LUPIS management package to select and schedule multi-site operations. *Journal of Environmental Management*, 29:31-45.

Fire and the Australian Biota (1981) Eds: AM Gill, RH Groves, & IR Noble. Australian Academy of Science, Canberra.

General

Amos N Kirkpatrick JB & Giese M (1993) *Conservation of Biodiversity, Ecological Integrity and Ecologically Sustainable Development, A Discussion Paper*. Australian Conservation Foundation and World Wide Fund for Nature, Australia.

Leigh JH & Briggs JD (1992) *Rare and threatened Australian Plants*. Australian National Parks and Wildlife Service, Canberra.

Morton SR, Stafford Smith DM, Friedel MH, Griffin GF & Pickup G. The stewardship of arid Australia: ecology and landscape management. *Journal of Environmental Management*. Submitted.

Roper MM (1993) Biological diversity in microorganisms: an Australian perspective. *Pacific Conservation Biology*, 1:21-28.

Australia's Biota and the National Interest. The Role of Biological Collections (1992) Ed: H Tyndale-Biscoe. *Australian Biologist* 5(1):1-106.

Walker BH & Nix H (1993) Managing Australia's Biological Diversity. *Search*, 24(6):173-178.

Global Diversity. *Status of the Earth's Living Resources* (1992) Ed: B Groombridge. Chapman & Hall, London.

Global Biodiversity Strategy. Guidelines for Action to Save, Study and Use Earth's Biotic Wealth Sustainably and Equitably (1992) Eds: W Reid et al. World Resources Centre, NY.

Proceedings, Conserving Biodiversity: Threats and Solutions (in press). June/July 1993. NSW National Parks and Wildlife Service.

Scientific aspects of major environmental issues: biodiversity (1992) Office of the Chief Scientist. AGPS, Canberra.