

# restoring natural areas

IN AUSTRALIA



Industry &  
Investment

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## Introduction

In more than 200 years much of our landscapes have been transformed to make way for houses, agriculture and roads that support our society. Natural areas are those parts of the landscape that have been the least impacted and where native plants and animals still survive.

These natural areas are important. They provide us with practical services such as clean air and water, and control erosion and insects. They also give us the simple pleasures of interacting with a rich and diverse world. Their conservation and restoration need to be carefully balanced with production and development, as over-exploitation leads to degradation of both natural and developed areas. Dust storms and contaminated water benefit no one.

One of the first successful environmental restoration projects was at Broken Hill, New South Wales. In 1936, Albert Morris and the Barrier Field Naturalists Club, in collaboration with the community and mining industry, began a project to reduce the effects of wind erosion. They restored plant communities around mine facilities and created revegetation reserves surrounding Broken Hill by:

- excluding grazing animals and rabbits with fences carefully positioned to protect trees from prevailing winds
- selecting and planting local species of plants.

This work served as a model for subsequent restoration of other degraded mining sites.

During the next three decades, there was a rapid expansion in state and federal government policies and actions to counteract land degradation.

In the 1960s in Sydney, Joan and Eileen Bradley pioneered 'bush regeneration': a method that relies on stimulating the regeneration of native plants and not on replanting. They influenced a generation of bush regenerators; and the advocacy of the Bradley Method by the National Trust of Australia (NSW) has spread bush regeneration well beyond Sydney.



The regeneration reserve at Broken Hill now has functional and historic value.

Photo Peter Loughran.



Joan Bradley (right) on site in Sydney bushland in the early 1980s. Photo Ralph Hawkins



The Bradley Method had to be adapted to work effectively in Wingham Brush on the north coast of New South Wales. Notice the fig tree on left in each photo.

**1984** Start of work. Weedy vines were smothering the rainforest trees (each 'pillar' represents a native tree) and ground layer. Vines were targeted (Chapter 7) and 'pillars' released.



**1987** Native trees resprouting vigorously.



**1993** Healthy native growth.

Photos K. King (1984) and Dr John Stockard (1987 & 1993).



Dieback in the New England area of NSW.

During this same period, on the Northern Tablelands of NSW, Rob Davidson was campaigning for the retention of natural areas on sheep properties to provide habitat for predators and parasites to act as natural controls of insect pests and reduce the need for pesticides. These natural areas also provided a seed bank of local species for revegetation to counteract tree decline such as New England Dieback.

The 1980s and 1990s were years of dramatic change and expansion in the practice of bush regeneration. Natural area restoration became Australia-wide with greater environmental awareness by government and local communities.

A professional organisation, the Australian Association of Bush Regenerators (AABR), was established in Sydney in 1986. Specific vocational training for bush regenerators began in TAFE, NSW in 1987. These courses have now been expanded across the country. In 2000 Australasia's own journal *Ecological Management & Restoration* was set up to link science and practice.

An international focus for natural area restoration began with the formation of the Society of Ecological Restoration International in the late 1980s, which defines ecological restoration as 'the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed'.

Today, volunteers form a significant workforce and professional practitioners are employed by contractors, local, state and federal governments, and by organisations such as Greening Australia and Landcare to restore degraded natural areas.



## About this book

This book will introduce you to present-day practices of natural area restoration. This is a broad term that can include many activities. It draws on a wide range of skills, including plant identification, water sampling, soil analysis, plant management, mapping, landscape construction, planting and fauna management. It also has many unique elements, in particular an emphasis on site assessment and site resilience: the ability of the site to recover.

As well as reading this book, we suggest you keep up to date with current research by reading websites of large conservation organisations and federal and state governments, such as agriculture, forestry, environment, sustainability and national parks. These websites are a major source of information, although many government websites have been left out of the Resources section in each chapter as they change with government department titles.

Books on all aspects of the environment are carried by CSIRO Publishing ([www.publish.csiro.au](http://www.publish.csiro.au)). Your state natural history museum and botanic gardens (herbaria), as well as botanical and conservation shops, are good sources of books and information. Your local library and council will have general and local resources.

Enjoy the complex world of natural area restoration.



## Resources

### Books

- Bradley, J 2002 *Bringing Back the Bush*, New Holland.
- Davidson, R & S 1992 *Bushland on Farms*, AGPS Press.

### Internet

- Australian Association of Bush Regenerators [www.aabr.org.au](http://www.aabr.org.au)
- Greening the Silver City: the seeds of bush regeneration [www.powerhousemuseum.com/exhibitions/greening\\_themes.asp](http://www.powerhousemuseum.com/exhibitions/greening_themes.asp)
- Society for Ecological Restoration International [www.ser.org](http://www.ser.org)

### Journal

- *Ecological Management & Restoration*. Wiley- Blackwell Science Asia.

### Some important background texts for the management of Australian natural areas

- Attwill, P & Wilson, B (eds.) 2006 *Ecology: an Australian perspective*, Oxford University Press.
- Lindenmayer, D 2007 *On borrowed time: Australia's environmental crisis and what we must do about it*, Penguin Books in association with CSIRO Publishing.
- Lindenmayer, D & Burgman, M 2005 *Practical Conservation Biology*, CSIRO Publishing.
- McIntyre, S, McIvor, JS & Heard, KM (eds.) 2004 *Managing and conserving grassy woodlands*, CSIRO Publishing.
- New, TR 2006 *Conservation Biology in Australia: an Introduction*, Oxford University Press.