

Eucalypt Ecology: Individuals to Ecosystems

Edited by Jann Williams and John Woinarski, 1997
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ANDREW McCARTHY¹

EUCALYPT ecologists in Australia finally have a text that is a comprehensive review of the current state of knowledge on eucalypt ecology. This book incorporates and expands on ideas found in *Eucalyptus, the Universal Australian* by Pryor and Johnson (1981) and Pryor's (1976) *The Biology of Eucalypts*.

The editors state that the aims of this book were to "review understanding of, and provide new insights into, the ecology of eucalypts and closely related taxa, and of eucalypt-dominated ecosystems." This book achieves that goal and does so by drawing on the wealth of knowledge of the contributing authors. Ian Brooker, Jonathan Majer, Ian Noble, Tony Norton, Harry Recher, Jann Williams and John Woinarski are only a few of the notable authors who contributed to this book.

The text is comprised of sixteen chapters. Fourteen chapters are on specific topics relating to eucalypt ecology. There is also a general introduction and conclusion chapter. The topics covered range from phylogenetic history and classification to fungal diversity and the ecology of invertebrates and vertebrates in eucalypt ecosystems. The breadth of the book is illustrated by chapter 15, conservation and management of eucalypt ecosystems by Tony Norton.

Norton deals with this subject by examining five themes. The diversity of eucalypt systems is given in a brief summary, as other chapters cover this topic. The important point Norton makes is that the assessment of the composition and diversity of Australian eucalypt based ecosystems is limited by the lack of scientific knowledge of the biogeography of most Australian biota. This has meant that assessment has been primarily based on a few vegetative descriptors. These limitations have important implications for the conservation and management of eucalypt ecosystems.

Past and present uses of eucalypt ecosystems are examined and Aboriginal land use and its effects are covered. The change in eucalypt ecosystems since European settlement is discussed. Perhaps the most damning statistic of the management of eucalypt ecosystems is the fact that over 50% of Australian eucalypt forests have been cleared or severely modified, with most of that now pasture or grassland.

Norton gives attention to the history and present status of conservation and management. Protected

areas and unprotected areas are dealt with separately because of the different mechanisms involved in conservation and management. Aboriginal land management initiatives are highlighted. Norton also discusses the Ecological Sustainable Development process. He is critical that formal mechanisms were not outlined in the strategy for the implementation of key recommendations and questions how many of these recommendations will be acted upon.

The final section, on challenges and opportunities provides interesting reading. Five areas are covered. These include, developing a more integrated approach to conservation and management, resolving units for conservation and management, creating a national system of protected areas, eliminating threatening processes and developing government policy. On government policy Norton highlights the need for effective ecological monitoring to determine the efficacy of different prescriptions. This will then enable learning and adaptation.

It was refreshing that Norton was able to remain positive in concluding his discussion on conservation and management of eucalypt ecosystems. "As the only biologically mega-diverse nation that is affluent by at least standard economic measures, and with the potential to draw on untapped Aboriginal ecological knowledge, Australians have a unique opportunity to show the rest of the world how to live on a continent with care, foresight and humility.

In general this text is organized and easy to follow. Individual chapters deal with specific topics, but also touch on related topics contained within other chapters. This is a mark of excellent editing. The structure within each chapter is well designed, with aims being clearly stated and discussed. Each chapter has a conclusions section that synthesizes the chapter and importantly highlights any deficiencies in current research. An example of this is the chapter on invertebrates and eucalypts. Seven questions are listed that highlight the major deficiencies within this topic. This leaves the reader in no doubt where future research on this topic needs to focus. The use of graphs and figures is appropriate, but it was disappointing that the plates were in black and white. The references within each chapter are extensive and taken from a wide variety of sources. For example the chapter by Norton has 199 references, of which most are post 1990.

This book is a "must have" for ecologists, foresters, biologists and botanists. Any future researchers on eucalypt ecology should read this text first. At the very least this book should be in every university library in Australia.

¹School of Natural Sciences, Edith Cowan University, Joondalup, Western Australia, Australia 6027.