

there are threats to the survival of many of the patches arising from changed fire regimes and disturbance by cattle, and these threats will need to be addressed in future land management policies.

This volume is a landmark in the documentation of Australian biodiversity. While few individuals are likely to read it from cover to cover it should be in many libraries, and will be a key reference for those interested in rainforest biota and biogeography. It will also be a valuable source of ideas for those charged with carrying out biological surveys in remote areas.

The book is, as one would expect from its publisher, handsomely produced, and I noticed only a few minor errors (although desiccation is consistently spelt incorrectly). By current world standards the volume is remarkably cheap — Australian biologists owe a very great debt to the remarkable publishing house of Surrey Beatty & Sons; long may this particular endemic flourish!

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**"Fauna of the Blue Mountains" by Judy and Peter Smith.**

Published by Kangaroo Press, recommended retail price \$14.95.

As a Blue Mountains resident I am pleased to see that a local guide to fauna, written by two local biologists, has become available. This slim, soft-cover volume is an attractive and informative publication that should appeal to a wide range of people. The book is basically a guide that could be used in the field and around the home by those with at least some basic knowledge of natural history and the natural environment. The book should also serve well in the armoury of more experienced biologists who may be interested or engaged on work in the Blue Mountains area. Individual species known from the area are described under the major headings: mammals, birds, reptiles and frogs. There is further subdivision, such as: reptiles — tortoises, lizards, snakes.

The scope of the book is extensive: a comprehensive physical description of each species, accompanied by notes on locality, habitat, breeding habits and requirements, and historical records, is provided for all known species within these groups. A small proportion of the species are illustrated by black and white drawings (done by Colleen Werner) interspersed with the descriptions, while there are 12 pages of high-quality colour plates provided which illustrate major habitats and representative species of each faunal group. An informative introduction is provided to each major animal group, giving useful information on the general biology of each group within the context of the Blue Mountains. A concise discussion of the major habitats contained in the area and the

changes that have occurred to the local fauna since the European invasion is given in the introductory chapters. The historical quotations pungently illustrate the change in attitude to our natural heritage that has occurred since the early days of European occupation. It is good to see the book rounded off by a comprehensive index and list of plant names (common and scientific). My only major quibble would be that the lack of a simple key may frustrate novices who might be unable to readily locate the sub-group containing a description of an animal in question. This is understandable and perhaps compensated for by the extensive list of books cited as sources and for further reading. Also commendable for the novice is the list of relevant societies that is provided.

I thoroughly recommend this book and suggest that it will stimulate interest in the local fauna and thus fulfil a role in conserving and maintaining the splendid array of natural systems that we are blessed with on the western flanks of our largest city.

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## Nature Conservation: Reconstruction of Fragmented Ecosystems, Global and Regional Perspectives — Workshop Report

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In October 1991, 35 ecologists, agricultural scientists, conservation managers, farmers and an Australian Federal politician spent a week in Tammin, a small town in the central wheatbelt of Western Australia, discussing ecology and the role of ecologists in restoring fragmented ecosystems. The workshop was organized by CSIRO Division of Wildlife and Ecology in Western Australia, Center for Conservation Biology at Stanford University and the Tammin Land Conservation District Committee (a local group of farmers formed to combat land degradation).

Participants came from Australia, Canada, England, Finland, Norway, United States and Sweden. The workshop was designed to allow contributors to discuss their science and its relevance to redressing the enormous amount of ecological damage carried out by humanity in the name of development.

In keeping with the theme, the participants discussed global conservation issues as they relate to restoration ecology, then worked down to more regional problems with the extreme degradation of the southwestern Australian agricultural area providing some focus. A full day excursion was organized by the local farming community. It demonstrated what the landscape would have looked like before development for agriculture, how it is farmed now, what problems have developed as a result of clearing for agriculture and present farming practices, and solutions being developed to tackle some of these problems. The excursion proved to be very successful as international scientists came to appreciate practical problems of land care, and farmers came to appreciate scientists as people interested in solving practical problems.

The workshop defined reconstruction or restoration as the re-establishment of a system which emulates a healthy, natural, self-regulating system which is integrated into the ecological landscape in which it occurs. The aim is to restore as many ecosystem services as possible, as for example in using indigenous vegetation to restore the hydrological balance in the many different regions which have been overcleared and which are being subjected to increasing soil salinity and at the same time planning revegetation to meet nature conservation objectives.

The major impediment to restoration of ecosystems is the increasing demand being made on the planet by the rapidly increasing human population. The workshop was told that every ecosystem on Earth has been affected by human activities and increasing demands are leading to ecosystem collapse, as shown by increasing desertification, pollution of water supplies, etc. With about 40% of Earth's net primary production being used by only one species (*Homo sapiens*), there is little hope for reconstruction unless we halt our population increase, our rapidly rising demand on resources and practice conservation of energy.

In addition, climatic changes as a result of human activities and the uncertainty associated with modelling future changes in climate are likely to make it much more difficult to plan restoration activities. Before beginning restoration there should be a rigorous discussion of specific goals and expectations and the likely outcomes of alternative courses of action. When settling on a preferred course of action it will be necessary to understand how to measure success and how to put restoration activities in the context of climatic variability.

Restoration will not be possible unless social and economic factors are favourable, and these must be included in the planning of restoration projects.

At the regional level, for restoration to be successful it is necessary to manage the whole landscape, not just isolated elements of it as is the common practice now. There is a need to *carry out* reconstruction now, not just talk about it. There was a widely held view among workshop participants that the longer we delay tackling ecosystem reconstruction, the less chance we have of being successful. Any reconstruction projects need to be guided by good science; unfortunately, in the past this has not been the case. Often the criteria for success or otherwise of restoration projects have been very unclear or nonexistent. Representatives of all elements of the original ecosystem need to be replaced in reconstructed ecosystems and ecologists must be more involved in establishing what the key elements were and how to incorporate them into reconstruction plans.

The need for ecologists and conservation biologists to make sure that their work is interpreted in such a way that it is incorporated into planning and action for ecosystem reconstruction was stressed throughout the workshop. The workshop identified the need for scientists to work directly with community groups involved in restoration projects. These projects are experimental in nature and should be properly monitored to ensure that we learn as much as possible from them and the results are produced in a form that others can use. In addition the need for ecologists and conservation biologists to become involved in communicating conservation problems and solutions to all parts of human society (school groups, university students, general public, politicians and other decision makers) was stressed by a number of participants at the workshop. They can do this by raising local awareness of global issues, by becoming involved in community based restoration projects, and by setting an example by reducing their impact on the planet and its resources. They can also press for changes in education such that ecology and conservation biology become compulsory subjects, along with language, for *every* school child and university student. They can also talk to any group about global and local conservation problems and learn to use the media as a useful means of broadcasting the conservation message and the need to undertake restoration now to erase the pressing global and regional conservation problems.

The proceedings of this workshop will be published in the Nature Conservation series by Surrey Beatty & Sons, New South Wales.