BOOK REVIEWS

# Guidelines for Marine Protected Areas

**Edited and co-ordinated by Graeme Kelleher, 1999.**
**World Commission on Protected Areas (WCPA).**
**IUCN — The World Conservation Union.**
**107 pp. ISBN 2 8317 0505 3.**
**RRP US$24.95.**

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GUIDELINES to marine protected areas is a collation of efforts from the IUCN, NOAA and Cardiff University, among others. It is aimed at managers and would be managers of marine parks, but will also be of use to anyone involved in the Marine Protected Area (MPA) process from conceptual planning to establishment, monitoring and management. Its broad application takes into account the hurdles that a manager is likely to encounter. There are nine sections, an introduction, an evaluation of the legal framework required to successfully establish MPAs, a discussion on dealing with all the relevant parties, involving communities and other stakeholders, site selection, planning and managing MPAs, zoning, evaluating economic aspect and financial sustainability, and finally a section on research, monitoring and review. Boxes are used throughout the text within each chapter to summarize important points and make for quick reference to the topic of that chapter.

The introduction gives the reader an understanding of the history of MPAs in an international context and reasons for conservation of the marine environment, detailing benefits of MPAs. Benefits from MPAs elsewhere are the driving force for future MPAs and it is imperative that this information is disseminated to a wide audience to gain support. The objectives of MPAs are discussed and the need for clearly defining objectives in the initial stages of planning. The first priority must be conservation otherwise there is a chance that other interests will undermine the process should their expectations not be met.

When developing legislation for marine protection it is stressed that it should provide for the establishment of a body to oversee marine conservation and MPA management. "Umbrella legislation" should be developed that is not site specific, but can applied to new areas in the future. It is also stressed that legislation should be based on multiple use managed areas that cater for a range of activities including conservation, recreation and tourism, with perhaps some extractive activities allowed. People are unlikely to support an MPA if they have to drastically change their lifestyle. By allowing some activities to continue in managed zones (i.e., recreational fishing) support is more likely and community involvement can be taken on board early in the planning stages. The use of international conventions (United Nations Convention on the Law of the Sea — UNCLOS, Convention on Biological Diversity — CBD) is discussed in terms of their applicability to MPA planning and implementation.

There will always be a number of stakeholders competing for resources from areas of the sea, including fisheries, mining, community, conservation groups and possibly indigenous peoples. The suggestion of an MPA may create uncertainty among these groups. It is therefore crucial that all parties are involved, making issues clear and input is requested to overcome hurdles. The Guidelines provide stepwise tasks to ensure this is done effectively.

By forging partnerships with communities and stakeholders, the MPA management organization may be able to share some of the responsibilities. Community groups, indigenous groups and NGOs may take on some of the monitoring roles which will offset costs and allow the wider community to see and appreciate the benefits of the MPA. Advice is given in the report about how to initiate such partnerships and how to foster co-management agreements with various groups. MPA sites should be representative of the biogeographic regions of a continent, but a balance may also be needed between conservation and the livelihoods of local people. In some cases, it may be difficult to establish an MPA in the most suitable area (perhaps in terms of habitat representation) due to local fisheries or other activities taking place. In such cases it may be necessary for all parties to compromise.

The chapter on planning and managing MPAs brings together topics that are dealt with in more detail in other chapters; community participation, zoning and financial sustainability. These three components are crucial to successful ongoing management and maintenance of an MPA. Issues discussed are the need for a management capacity, formally trained staff to manage the MPA, adopting a long-term but dynamic view that can change in the face of new information, using an interdisciplinary team, and defining a decision making sequence.

Two approaches to MPA zoning are discussed. Some MPAs are set up as a number of small no take zones that are scattered to take in a suite of marine habitats. The recommended approach is to set aside a large MPA that encompasses a highly protected core zone within an area of lower protection, that may act as a buffer. The latter approach enables management of surrounding areas and low impact tourism that can provide financial benefits to overall park management.

MPAs are unlikely to be financially self sustainable without significant planning. Government agencies should make some provision, but other avenues to raise revenue must be identified. Different options are suggested for raising revenue by using market based mechanisms, involving the private sector, and raising funds through tourism. The ability to raise revenue may be necessary to sustain sound long-term management.

The final chapter deals with research, monitoring, evaluation and review. Sound scientific monitoring is essential to measure the effects of establishing MPAs. The information that comes from monitoring may alter management practices and it is important to have a process of review that incorporates new information. This is known as adaptive management.

Finally, there are four annexes to the document that detail steps to establish co-management partnerships, drawing up the management plan, guidelines on making a zoning plan, resolutions from the IUCN General Assembly and the references used.

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The long-term sustainability of the marine environment is dependant on the establishment of Marine Protected Areas (MPAs) which can fulfil such objectives as protecting biodiversity and ecological integrity, acting as replenishment sources for fish, providing monitoring sites, managing for cumulative impacts, and preserving genetic diversity.

This book has succeeded in detailing stepwise procedures that are appropriate for the entire MPA process and will be an invaluable resource for managers at any stage of the MPA process. It is comprehensive in covering all the hurdles that may be encountered from the planning stage through to implementation and management. Hopefully, it will encourage conservation and sustainable use of the marine environment, which in turn will heighten public awareness of the importance of these regions.

# A comparative review of Australian Conservation Biology texts

**Conservation Biology for the Australian Environment.**
**M. A. Burgman and D. B. Lindenmayer, 1998.**
**Surrey Beatty & Sons, Chipping Norton, NSW, Australia.**
**380 + x pp. 16 Chapters.**
**ISBN 0 949324 78 7.**

**Conservation Biology: an Introduction for Southern Australia.**
**T. R. New, 2000.**
**Oxford University Press, South Melbourne, Victoria, Australia.**
**422 + xviii pp. 13 Chapters.**
**ISBN 0 19 550715 0.**

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CONSERVATION Biology is an amalgamation of a number of scientific and social sciences, that has resulted from an increased awareness of the need to protect living organisms and the ecosystems that support them. This new discipline "*. . . provides the intellectual and technical tools that will anticipate, prevent, minimize and/or repair ecological damage . . .*" (New 2000, p2) resulting from anthropogenic activities.

Publications dealing exclusively with conservation biology are not yet as numerous as texts related to the applied sciences, and those that do exist are chiefly produced in the Northern Hemisphere. In answer to the prayers of Australian students and researchers, two books, focused on the country's unique environments and biota, have been recently published. Burgman and Lindemayer's text, *Conservation Biology for the Australian Environment* ("B&L"), published in 1998, was previously reviewed in this publication (Agocs *et al.* 1999). New's book, *Conservation Biology: an Introduction for Southern Australia*, published in 2000, is critiqued in this review, which also provides comparisons of content, focus and style between the texts, allowing readers to decide which may better suit their needs.

The books present a diverse array of material covering aspects of Australian conservation biology issues. However, where "B&L" focuses on the principles of conservation biology and the main quantitative methods and procedures, "New" also examines the requirements of the conservation biologist, discussing current political and management options and the limitations of research literature and scientific methods.

"B&L" is divided into four sections. Part I, *Principles for Conservation*, presents the how, what and why of conservation biology, introducing some fundamentals of the discipline including species diversity and richness, endemism and genetic diversity. *Impacts*, Part II, discusses changes to the natural environment as a result of human activities. Part III, *Methods of Analysis*, explores analytical tools, which can be used to solve conservation problems. *Management Principles for Conservation*, Part IV, is a single chapter that places these tools into a management context (Agocs *et al.* 1999).

"New" is comprised of 13 chapters. The first five chapters define and explore some of the central themes of conservation biology. Highlighted are the need for this science in Australia (chapter 2), and how and why this country has the unenviable position of having one of the highest extinction rates in the world (chapter 3). Chapter 4 deals with how conservationists look at biodiversity, defining various levels of diversity and species richness and introducing the forms of information available for use in decision making. The evaluation of species' conservation status is discussed in Chapter 5.

The next three chapters focus on the practical and theoretical levels of conservation biology. Chapter 6 discusses management at the species level, indicating that, as conservation is expensive and time consuming, priority is accorded to species deemed as most important. Conservation through habitat protection is introduced in Chapter 7. It covers the design, selection and management of reserves for the short and long term, recognizing the need to plan for future problems such as climatic variation. Chapter 8 also looks as conservation beyond the current reserve system, exploring possibilities such as agricultural and private lands as biological safe havens and the restoration of degraded land.

A full host of threats and their consequences to native species are discussed in Chapters 9 and 10. These range from habitat destruction, fire and invasive species to pollution, commercial exploitation and salinization. Threat management and abatement are also discussed. Chapter 11 explores conservation in captivity and problems associated with maintaining a captive-breeding

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