

Conservation of Exploited Species edited by John D. Reynolds, Georgina M. Mace, Kent H. Redford and John G. Robinson (2001), xx + 524 pp., Cambridge University Press, Cambridge, UK. ISBN 0 521 78216 3 (hbk), £75.00, 0 521 78733 5 (pbk), \$29.95.

The search for sustainable use is a serious preoccupation of governments, forming one of the three objectives of the 1992 Convention on Biological Diversity (CBD). The other two are the conservation of biological diversity and the equitable distribution of benefits arising from the use of genetic resources. But are these three objectives really compatible? Is it possible to both conserve and sustainably use at the same time, and if so, how? These are questions that this book seeks to answer.

Conservation of Exploited Species contains 22 chapters, all of high quality and all written by biologists of one stripe or another. Anthropology, economics, political science, and sociology are not given nearly as much attention as the biological components of sustainable use, but the biologists do recognize the importance of politics, especially in the chapter by Stephen Sanderson on *Getting the biology right in a political sort of way*. The book also focuses primarily on animals, although the chapters by Charles Peters and Donald Ludwig do draw lessons from the plant kingdom. The book is concerned with species rather than biodiversity more broadly, judging from the fact that the Convention on International Trade in Endangered Species (CITES) occurs 19 times in the index, compared to just two mentions of the more recent and inclusive Convention on Biological Diversity (CBD). This is ironic because the CBD is generating some of the most innovative thinking about the topics raised in this book.

The various authors, each in their own way, make the point that if sustainable benefits are to be provided to local communities and to the nation at large, more effective controls may be required to ensure that populations of harvested fish, medicinal plants, trees, and wildlife are maintained at productive levels. The means of doing this clearly will vary from place to place, but the foundations must be built on sound economic and ecological principles. Establishing well-managed protected areas may provide an effective approach to resource management based on sustainable use, thereby restoring at least part of the balance between hunter

and prey that has long enabled human populations to survive, and thrive, in rural areas.

One cause for concern is that different groups have very different ideas about the value of any given species, with some groups considering the target animal an icon that needs to be preserved at whatever cost, others considering it a pest to be eliminated, and yet others viewing it as a valuable resource to be conserved for sustainable use. Some groups, notably many animal welfare organizations, are fundamentally opposed to any harvest of wildlife. Strangely they oppose the harvesting of African elephants even if the elephants are eating a poor farmer's entire food supply, of non-native wild horses in the American West that are degrading native ecosystems, and of kangaroos in Australia that are far better suited to their environment than are the sheep that have replaced them.

Reading the book it is difficult to avoid the conclusion that sustainable use of wildlife in the modern world is difficult, if not impossible, to achieve. Although wild products have been harvested sustainably by people for thousands of years, today's increasing populations, more sophisticated technology, and changing social, economic and political structures have removed most traditional controls on how these resources are harvested. Hunting, once the past-time of rural people with time on their hands or hungry bellies to fill, has become a problem that seems particularly difficult to address in countries with weak governance. Many rural people still have a fondness for hunting, and with increasing access to remote areas and greatly improved technology in the form of firearms and flashlights (for night-hunting), the wildlife management agencies are stretched in trying to deal with such a culturally ingrained activity. The problem is made even more challenging when very high prices on the international market for products such as tiger bone, rhinoceros horn and gorilla meat make over-harvesting of wildlife a temptation that is difficult for poor rural hunters to resist.

Some chapters make depressing reading. Ludwig, for example, points out that prudent conservation policies are by no means assured even when everybody knows better, quoting as examples the depletion of English oak during the Napoleonic Wars, and the continuing over-harvesting of fisheries in many parts of the world. Worse, many of the factors that lead to over-exploitation

are far removed from the realm of scientists, an example being the political and social pressure for short-term benefits from over-capitalizing the global fishing fleet at the expense of long-term degradation of the resource. Further complexity is injected by the CBD, which defines 'sustainable use' as the use of biological resources in a way and at a rate that does not lead to the long-term decline of biological diversity. Thus it is not enough simply to manage a species or group of species sustainably; the manager must also consider the impact of such management on all other species as well. Evidence from various parts of the world point to the discouraging conclusion that it is often economically rational to exploit populations to the point of extinction, especially when growth rates are slow and the costs of capital are high, as in the case of whales or trees.

On the other hand, some chapters suggest that sustainable use may in fact be a viable source of income for rural people, promoting conservation by making wildlife viewing and harvesting economically rewarding. Examples are Zimbabwe's famed CAMPFIRE programme and, at least potentially, kangaroos in Australia, where the kangaroo harvesting industry is hoping to set in motion the reclamation and restoration of natural habitat across much of the arid parts of the continent. In the Canadian Arctic giving aboriginal hunters an effective voice in wildlife conservation through shared management responsibilities with government appears to have led to increases in the populations of the harvested species, or at least to stable populations.

So what are we to make of all of this? One inescapable conclusion is that we simply cannot continue the current levels of exploitation of most wild species, if we want those species to survive. Another conclusion is that we need to be far more creative in finding ways of living in better balance with the available resources. The most reasonable place to look for sacrifices is among the wealthy over-consumers of the industrialized North. Who is going to step up to the challenge? In fact, it appears that the search for sustainability has uncovered a spectrum of the results of harvesting that range from extinction to abundance. Sanderson warns against the trap of generalizing a conservation programme beyond the specificities of place, but surely some conservation practices are capable of being generalized in very different places. For example, approaches such as the recognition of particular places as requiring specific conservation measures and the importance of basing management decisions upon reliable information, are relevant in many settings. Certainly the Everglades is not the Pantanal, but the general rules remain the same.

While the book frequently seems sceptical about the sustainability of wildlife harvests, it certainly does not err on the side of complete protection. As Sanderson

points out 'To be associated with extreme organizations advocating the complete sanctity of all animal life is to fly in the face of human history and to give up far more in gains than could possibly result in productive alliances'. John Robinson rightly concludes that 'When both use and conservation are required, making that use sustainable is the only strategy'. This very useful book leads, however, to the conclusion that we are still a very long way from putting this sound strategy into practice on a scale that is sufficient to conserve our planet's biodiversity.

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Uncovering the Hidden Harvest: Valuation Methods for Woodland and Forest Resources edited by Bruce M. Campbell & Martin K. Luckert (2002), xii + 262 pp., Earthscan, London, UK. ISBN 1 85383 809 8 (pbk), £24.95.

Economic valuation is too often ignored by conservationists. Yet we inhabit a world in which many of the decisions affecting those things we care most about are made based on economic factors. Shouldn't we learn more about the 'dark science' of economics? Convinced that the answer to this question is a resounding 'yes', Campbell and Luckert have put together an edited volume designed to educate non-economists interested in placing value on goods and services derived from wild forest species used by local human populations in developing countries. As the book title suggests, these values have been largely hidden from the calculators of economists, conservationists and advocates of local peoples. Yet, as documented in the book, these values can be considerable.

When making land use decisions, all too often the easily calculated economic values of agricultural products have weighed heavily, whereas the more elusive values of wild species have been greatly undervalued. The editors have assembled a set of chapters, written by experts, designed to attempt to remedy this situation by introducing readers to valuation techniques such as related prices, contingent valuation, travel cost techniques, inquiries into market structures, cost-benefit analyses and other methods such as participatory rural appraisal. Their stated aim is to provide the reader with the tools to understand the different approaches and methods and to make more informed decisions as to which methods may be applicable in the production of policy-relevant research. As such, the book is definitely aimed at the implementers and is written in short chapters replete with practical tips.

The book has some drawbacks. It is almost exclusively focused on plant species, paying little attention to the importance of animals; particularly those used for meat. Given all of the recent attention to the 'bushmeat crisis', this is a shame. I found this book a little frustrating in that it showed me how complicated economic valuation really is, what a significant role it has to play in determining the future of many species and ecosystems we hold dear, but ultimately, how much you have to know to use it well. The reader is cautioned early on (p. 12): 'The danger of non-economists attempting to undertake full-blown resource valuation exercises cannot be overstated.' Lest we forget, at the end of the book (p. 238) we are told that '... only a few practitioners, currently at the cutting edge of developing these approaches, are capable of reliably using some valuation methods.' So, in the end, one is left clutching one's ignorance of economics, now even more clearly felt, yet even more convinced through the breadth and detail of the book that one must understand (and even employ) economic valuation. However, equally clear is the fact using such approaches is dangerous because one is a) not an expert, and b) not a member of an interdisciplinary team with the complementary set of skills necessary to understand the whole context of any given resource use – a bit of a frustrating place to leave the reader.

However, this book has some excellent features. It introduces the reader to a highly complex, often difficult to access, set of economic techniques, in a readable fashion. It makes extensive use of examples drawn from research projects around the world that illustrate many of the major points. Reflecting the genesis of the book, and the expertise of the lead editor, there is a refreshing emphasis on dry forests, with the usual set of examples from rainforests thrown in. It would make a good book for the interested practitioner and for graduate teaching.

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Biodiversity and Traditional Knowledge: Equitable Partnerships in Practice edited by Sarah A. Laird (2002), xii + 262 pp., Earthscan, London, UK. ISBN 1 85383 698 2 (pbk), £24.95.

The Convention on Biological Diversity (CBD) came into effect in 1993, creating a new set of relationships between governments, cultures, researchers, and businesses. Amongst other things the CBD recognized the intrinsic value of biological diversity and the rights of indigenous communities who have developed knowledge about their

local biodiversity. The CBD assigns trust ownership of biological diversity to sovereign states, not corporations, communities or cultures. Governments have been given the incentive to document the diversity within their borders and to control access to it by researchers and entrepreneurs both from within the country and from elsewhere. As a side effect bioprospecting, or the study of biological resources for economic purposes, has become confused with intellectual pursuits of theoretical questions. Because of this the CBD has probably done more to both help and harm legitimate research activities, particularly those conducted in the tropics. Help has come through blocking the inappropriate activities of 'biopirates' and creating interfaces for establishment of intellectual property right agreements with traditional knowledge holders. Harm has come through blocking of legitimate research, particularly into the conservation of biological and cultural diversity.

One of the major forces driving the perceived need for regulation of research on biological diversity has been the notion that tropical rainforests are storehouses of pharmaceuticals. This idea persists because of wild claims from a few pharmaceutical researchers and radical watchdog groups who don't seem to know that in the last 30 years no new natural pharmaceuticals have been marketed in the USA from tropical plant sources. A second element is the belief that the knowledge of traditional healers can be converted into pharmaceuticals and large profits. Again, there have been no pharmaceuticals marketed in the USA in the last 30 years that have arisen from traditional knowledge. This is not to say that biodiversity and traditional knowledge are not potential economic resources. The discussion should be more realistic, recognizing that in the last 30 years conservationists, ecologists and ethnobiologists have learned much about biological diversity, virtually none of which has led to the presumed economic developments. I am concerned that as extreme personalities argue over the ethics of a minority of researchers (the so-called biopirates), the diversity of cultures and living things is rapidly diminishing due to fires, cattle, chainsaws, cultural homogenization, and overpopulation.

A secondary concern is the growing gap in economic prosperity between nations of the North and South. Northern, developed nations, dominate exploration and development of biological resources, while southern, less developed nations, hold the most biological resources. This imbalance drives the degradation of biodiversity in the South in order to meet the needs of the North. Naturally, stakeholders in southern nations are eager to close the gap and retain control of their own knowledge, biodiversity and destinies.

Biodiversity and Traditional Knowledge is a compilation of the perspectives of 16 primary authors who have

taken the time to work through the complex mire of ethical and legal concerns, both real and imagined. The primary authors include biologists, lawyers and environmental policy analysts, who provide numerous examples of problems and solutions involved in research and development of biological diversity. The volume is divided into six sections: Biodiversity research relationships, Biodiversity research and prospecting in protected areas, Community relationships with researchers, The commercial use of biodiversity and traditional knowledge, National policy context, and Conclusions and recommendations. Specific examples are discussed, illustrating the experiences of over 60 secondary authors from around the globe. Many of these examples demonstrate the process of developing fair relationships between research partners from the North and South as well as the kinds of collaborative agreements that have been implemented. Few books provide such a good balance of theory, practical concerns, and viable resolutions to problems.

Among the key concepts discussed are the responsibility of researchers to give something back to communities who share access to their knowledge and biodiversity, the importance of recognizing potential value in all biological diversity and traditional knowledge, the critical roles that conservation may play in questions of biodiversity prospecting, the importance of benefit sharing for long-term research projects, and the importance of prior informed consent in all research involving biological diversity. All of these elements are essential in the creation of equality among research partners.

This book should serve as a primer for any researcher considering working in another country or on the economic potential of biodiversity. The volume offers numerous models for identification of stakeholders and for development of agreements that will enable researchers to sleep at night knowing that they have tried to do the right thing.

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India's Wildlife History: An Introduction by Mahesh Rangarajan (2001), xv + 135 pp., Permanent Black, New Delhi, India, in association with Ranthambore Foundation, New Delhi, India. ISBN 81 7824 011 4 (hbk), \$12.50.

As a result of the strange quirks of our planet's geological and evolutionary history, India is a nation

with mega-biodiversity. This diversity includes animals such as lions, hyaenas and antelopes that are typically associated in people's minds with Africa, brown bears, red deer and mountain ungulates characteristic of temperate Asia and Europe, and tigers, elephants, rhinos and hornbills of tropical Asia. Additionally India supports one billion human beings packed into an area one third the size of the USA. Roughly two thirds of these people are poor, illiterate and live off the land in some way. Overlapping with this persistently 'underdeveloped' India is a modern India of agribusinesses, computers and missiles, growing at 6% a year. This rich, diverse landscape of biology and culture has had a divisive and violence-ridden social history extending over centuries. Considering the massive depletion of fauna that occurred under comparable historical conditions in both Europe and North America, it is astonishing that India's charismatic mega-fauna survived at all. But it most emphatically does, albeit only on 4% of the land that is now under wildlife reserves. In this scholarly yet readable book Mahesh Rangarajan, an historian of ecological change with a passion for natural history, tries to explain why.

Rangarajan takes us through 3,000 years of history, drawing on ancient Indian, Mughal and Western sources. The 10 chapters cover ancient India and the Mughal period, early British rulers and their wildlife eradication campaigns, hunting and sport and their regulation under princely and imperial rule, the conflict between elitist 'sportsmen' and 'poachers' from subaltern classes, and wildlife conservation efforts through various periods of history to the present day. The author carefully documents the massive overkill of the past as well as the attempts to preserve 'game'. The deeds of India's native kings, colonial rulers, and conservation pioneers come under his sharp scrutiny. Rangarajan focuses on the ever-present tension between the strong human urge to consume nature, and the weaker one to protect and nurture it. Although he tries to be even-handed between the biocentric and anthropocentric world-views of conservation in India, Rangarajan is more at ease with the agenda of emancipatory politics than with that of protecting wildlife for its own sake. Nonetheless, this book will be valuable to those who cherish wildlife, as well as for those who would like to turn even the tiny surviving fragments of nature in India into battlegrounds for redressing historical injustices.

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Djibouti au rythme du vivant: les mammifères, d'hier à aujourd'hui pour demain by Alain and Danielle Laurent (2002), 240 pp., Beira. CFP edition, ISBN 2-914843-00-3, €75.

Neither the subject nor the form of this publication are ordinary. Current knowledge of the natural history of the arid territories of Djibouti, Somalia, Eritrea and Ethiopia is scarce, heterogeneous and incomplete. *Djibouti au rythme du vivant* is an unusual and exhaustive account of the mammalian fauna of the region, and the only one written in French. The subject in itself is therefore one of the most notable features of the book, the other being the comprehensive documentation: original data collected in the field by the authors from 1981 to 1993, abstracts from ancient texts and current literature, original drawings, maps and photographs, and discussion of animal toponymy and desert ecotourism.

The style of the book is somewhere between that of a field guide and an encyclopaedia. The text is rich with sections, inserts and boxes providing historical background as well as literary, technical and scientific annotation. There are two main sections. The first, *Cadre, contexte et perspectives*, deals comprehensively with the natural history of Djibouti and the surrounding territories, including geology, climatology, botany, palaeontology, oral tradition, ethnology, modern history, conservation, threats and ecology. An up-to-date list of the 81 species of mammal known from the area, 21 of which are threatened, is provided and descriptions are given of 55 natural sites of special ecological importance. The second section, *Catalogue des mammifères*, details the taxonomy, morphology, distribution (including maps), literature, ecology, ethology and conservation status of each species of mammal.

Despite the depth of detail this book is attractive and readable, with the exception of the bibliography, which is in rather small print. The amount of literature reviewed and information compiled, the consistency with which the information is presented and the quality of the photography further contribute to the value of the book. Finally, it is worth noting that the primary purpose of the book is to enhance knowledge and awareness of the mammals of the Republic of Djibouti and neighbouring territories, and to help promote ecotourism and conservation in the region. As indicated on the cover, part of the profits from sales will be used to help local associations.

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A Guide to the Birds of Fiji and Western Polynesia, including American Samoa, Niue, Samoa, Tokelau, Tonga, Tuvalu and Wallis & Futuna by Dick Watling (2001), 272 pp., Environmental Consultants (Fiji), Suva, Fiji. ISBN 982 9047 01 06 (hbk), \$30.00 (Contact e-mail watling@is.com.fj).

This is the long overdue update to *Birds of Fiji, Tonga and Samoa*, published by the same author in 1982. This greatly expanded book now has a much greater geographical scope and, besides the species accounts, includes profiles of each country, an overview of the ornithology of the region, a guide to birding in the region, a glossary, indexes of both species and local names, and country checklists. The most important addition to the book, however, is a section on conservation that includes an overview of both historical and recent problems, and tables of both the global and national Red List status of threatened birds.

Other publications received at the Editorial Office

Proceedings of the First Otter Toxicology Conference: Journal of the International Otter Survival Fund No 1 edited by J. W. H. Conroy, P. Yoxon, A. C. Gutleb (2002), 184 pp., International Otter Survival Fund, Isle of Skye, UK. ISBN 0 9517122 1 7 (pbk), unpriced.

Dugong: Status Report and Action Plans for Countries and Territories compiled by Helene Marsh, Helen Penrose, Carole Eros and Joanna Hugues (2002), viii + 162 pp., UNEP, Nairobi, Kenya. ISBN 92 807 2130 5 (pbk), unpriced.

Elasmobranch Biodiversity, Conservation and Management: Proceedings of the International Seminar and Workshop, Sabah, Malaysia, July 1997 edited by Sarah L. Fowler, Tim M. Reed and Frances A. Dipper (2002), xv + 258 pp., IUCN Shark Specialist Group, IUCN, Gland, Switzerland and Cambridge, UK. ISBN 2 8317 0650 5 (pbk), unpriced.

Adaptive Management: From Theory to Practice edited by James A.E. Oglethorpe (2002), vi + 166 pp., IUCN, Gland, Switzerland and Cambridge, UK. ISBN 2 8317 0526 6 (pbk), unpriced.