

Global Biodiversity: Earth's Living Resources in the 21st Century by Groombridge, B. & Jenkins, M.D. (2000), 246 pp., ISBN 1 899628 15 0, £29.99/\$50.00. World Conservation Press, Cambridge, UK.

The World Conservation Monitoring Centre (WCMC) in Cambridge, now part of UNEP, is best known for its databases on species, habitats and conservation initiatives, and for a series of invaluable publications summarizing that information. But the latest offering from the extraordinary team of Brian Groombridge and Martin Jenkins confirms that UNEP–WCMC's greatest asset is the collective knowledge of the experts that work there.

Global Biodiversity: Earth's Living Resources in the 21st Century comes eight years after *Global Biodiversity: Status of the Earth's Living Resources* and weighs less than half its predecessor, yet still manages to provide an outstanding overview of the field. There are far fewer tables of raw data than in the 1992 book, and much less on the business of conservation itself. The new volume instead concentrates on three broad areas: the nature of life on earth, the historical and ecological links between our own species and others, and the current state of species and ecosystems. In each case, the succinct and authoritative but accessible prose, the data-rich tables and the up-to-date reference lists (including many Web sites) provide both a very good introduction for non-specialists and an excellent review for those mortals with a less encyclopaedic knowledge of the subject than that of Groombridge and Jenkins.

The book is organized into eight chapters. The first five cover the biosphere, the diversity of organisms, long-term trends in biodiversity, the origins and ecological history of people, and current spatial and temporal trends in biodiversity. The remaining three chapters represent the real meat of the book, and catalogue habitat types, human use and human impacts for marine, terrestrial and inland water systems in turn. The level of information on marine systems is particularly gratifying, occupying by far the longest chapter.

The authors present several important new (or newly accessible) analyses by WCMC and their collaborators, including a wilderness index (documenting how remote different parts of the land surface are from human influence), contour-like maps plotting summed richness scores for families of freshwater fish and for species of threatened birds, and a global profile of the distribution of original and remaining areas of forest cover. The maps in particular present many new ways of seeing our world (although much information is thrown away by the use of scales like 'low' to 'high', where underlying analyses are presumably based on quantitative data of some sort).

There are of course a few minor niggles. Producing a book in landscape format may help limit illicit photocopying, but it also means that the book does not fit properly on the shelf, and intrudes into your neighbour's space during the journey you are using to read it. Unlike its predecessor, this volume does at least have an index, but this still fails to do justice to the information content of the text, and could have been usefully supplemented by a glossary. And at nearly £30, I fear that the book may not sell quite as widely among developing country conservationists and students as it deserves.

But quibbles aside, this is a tremendous book. In what other single volume could you find out that 35 out of Peru's 90 wild potato species are now extinct in the wild, get access to an up-to-date account of the 96 phyla currently used to describe living species, learn the difference between a kelp bed and a kelp forest, and between a catchment and a watershed, and discover the fate of the Chinese fleshy prawn *Penaeus chinensis* aquaculture industry?

I learnt a great deal reading this book. As an introduction to biodiversity, it represents a valuable resource for teachers, students and non-specialists alike. As a reference for sourcing more detailed information, it will be extremely useful to conservation professionals. Groombridge and Jenkins have done it again, only this time better than before.

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Mammals of the Neotropics, Volume 3: The Central Neotropics: Ecuador, Peru, Bolivia, Brazil by Eisenberg, J.F. and Redford, K.H. (2000), 610 pp., 16 colour plates. ISBN 0 226 19542 2. Hardback £56.00; paperback: £28.00. University of Chicago Press, Illinois, USA

Eight years after the publication of Volume 2 of this irreplaceable series of texts the third volume has arrived in paperback for inclusion on the shelf of anyone seriously interested in Neotropical mammals and working on a budget. This includes most conservation professionals.

There are an increasing number of in-country publications becoming available on the mammals of Ecuador, Bolivia, and other South American countries, that are covered by this text. However, these are most often in the shape of field guides, and lack information from a wider geographical perspective—pertinent to issues such as species conservation.

Eisenberg and Redford, with seven colleagues who contributed to the volume, have compiled an enormous amount of information on this most charismatic of taxa. The book is divided into three parts, the first being on mammalian faunas of the plio-pleistocene of Brazil, the second (which occupies most of the book) being concerned with contemporary mammalian and the last being on the biogeography of the land mammals of these modern species. Within the latter, there are insightful chapters on the *Macrogeography of Brazilian Mammals*, as the largest and most diverse country in the whole of the Neotropics, and on the *Structure of Nonvolant Mammal Communities in Different Amazonian Forest Types* by experts in their respective fields. However, as a conservation worker I found that within these chapters there was still a worrying lack of integration of the current concerns over habitat loss, hunting, and other major threats into discussions of ecology. Things have come a long way since the publication of the last volume in terms of our understanding of the urgency of conservation, and a broader discussion and synthesis of its relevance to Neotropical mammals would have been welcome.

The contemporary mammalian information that makes up the bulk of the book is structured in a similar way to the first two in the series, with taxonomic progression from order to species in increasing detail. As a result of the duplication involved in covering the species in this region (which overlaps heavily with *Volume 1: The Northern Neotropics* (1989), and *Volume 2: The Southern Cone* (1992)), the latest of the trilogy has been designed for use in conjunction with the other volumes, and species accounts are abbreviated. Each of the latter is subdivided into description, measurements, distribution (with maps being given for the majority of species), range and habitat, comments, life history and ecology, and natural history depending on the availability of current knowledge. Occasional line drawings of whole animals and skulls are given where deemed appropriate within the text.

To many readers, at first glance, the choice of when to use illustrations may appear somewhat eclectic, as may the inclusion of a variety of keys, which are scattered throughout the book. However, personally I find this 'natural history' approach to the subject very appealing. It is also a highly practical one given the existing holes in current knowledge of Neotropical mammal faunas and the dynamic state of their taxonomy in the largest groups, bats and rodents. The volume provides as much information as it can, without the constraints of some supposedly more rigorous approaches, leaving the reader to sift out that which is of most interest to themselves. Thus, the comparative table on nomenclature used in the literature on the Echimyidae (arboreal spiny rats) will be of great use to some readers and of

passing interest to others. Whereas the references cited in the contemporary bat section, used to compile distribution maps, are a great resource for those of us working on Neotropical Chiroptera.

Both colour and black-and-white illustrations are by Fiona Reed who is outstanding, amongst other things, as being one of the few artists able to paint bats that look life-like rather than straight out of a museum drawer. Being a reference book, rather than a field-guide, the number of colour figures is not extensive, but covers many of the most recognizable species.

Overall the amount of information that has been put together in this work is truly phenomenal. The time and effort that this took are reflected in the time lag between this and the previous volume of the series. However, it has been worth the wait. In summary, it is to the immense credit of the authors that they have succeeded in their attempt to 'capture our knowledge concerning the mammals found in the "core" of South America at the close of the twentieth century'.

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Bats of Papua New Guinea by Bonaccorso, F. (1998), 492 pp. ISBN 1 881173 26 7. Paperback: £20/\$40. Conservation International, 2501 M Street, NW, Suite 200, Washington, DC 20037, USA

Papua New Guinea has a rich bat fauna that numbers over 90 species, a significant proportion of which are endemic and/or threatened. While there have been publications on the bats and mammals of New Guinea before, this book is the first true field-guide for the country, and the author has extensive experience of the area. Although it is in essence for the field biologist visiting the country, those with a more general interest in bats or the natural history of New Guinea will find much of interest within its pages. There is an introduction that looks at the bat fauna from a historical perspective as well as the distribution of species by elevation and body size. The relationship with the country's bird fauna is also discussed. The main part of the guide is taken up with individual accounts for all species. For each species, information is presented on identification, geographic range, natural history and conservation status. Detailed distribution maps, including information on subspecific distributions, are also included. For those who require it, there is information on museum specimens that have been examined along with key biometric measurements.

There is also a useful gazetteer and reference list. There are a series of colour plates that illustrate some of the species recorded as well as valuable keys to all species. This is a comprehensive publication that is to be highly recommended. The only slight annoyance is that the excellent distribution maps do not appear next to the accounts for the species they represent.

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African Elephant Database 1998 by Barnes, R.F.W., Craig G.C., Dublin, H.T., Overton, G., Simons, W. and Thouless, C.R. (1999), vi + 249 pp., ISBN 2 8317 0492 8, unpriced. IUCN/SSC African Elephant Specialist Group. IUCN Publications, Gland/Cambridge.

This is the second edition of the *Database* produced under the aegis of the African Elephant Specialist Group, the first being the *African Elephant Database 1995* (Said *et al.*, 1995). Its objective is to provide a continent-wide synthesis of information about the range and numbers of the largest living land mammal, *Loxodonta africana*. In view of the major effort involved in compiling a report of this kind and the integrity with which the work has been carried out, it is regrettable to have to say that the overall result is disappointing.

For each of the 37 elephant range states, the *Database* aims to provide two maps, one showing protected areas and elephant range and the other showing areas surveyed and elephant range, and two tables, the first recording the results of recent surveys by area and the second classifying the results into four exclusive categories of data: definite, probable, possible and speculative. In the careful introductory section, survey methods and the way in which survey quality and reliability are assessed are fully explained, with examples. It is also clear that the surveys and the analysis in the *Database* have been carried out in order to inform management and policy decisions, not least in relation to the controversies in CITES about the ivory trade. It must at least be open to argument as to whether the four categories are useful to policy-makers, as compared with the more usual way of presenting a best estimate of numbers, with variations on either side.

Since 1995, publication updates or corrections were

received from 30 out of 37 range states, although not necessarily relating to all areas in some of the states. Those providing no updates all suffered from continuing civil strife. Because the previous data for Congo, Sudan and Sierra Leone were more than 10 years old, the authors decided to omit tables from their country reports and to enter a series of noughts for them in the composite tables.

While this rigour is admirable in its way, it leads to difficulty when the reader looks for information about overall trends. Since 1995, the need for information about changes in elephant numbers at a country, sub-regional and continental level has hardly diminished, with major proposals on elephants featuring at both the 1997 and 2000 CITES meetings. Despite this, the 1998 *Database* sternly admonishes the reader not even to try to make comparisons with the 1995 report 'because differences between the two may not reflect real differences but rather improvements and corrections to the data and the database'. However, the need to distinguish between improvements in methodology and real changes between surveys in a series, such as national censuses, is familiar and should not be an excuse for not even attempting to identify trends where the data permit.

It is surely very important for international and national decision-makers to know that between 1995 and 1998 elephant numbers grew significantly in Kenya, South Africa and Botswana, while they declined in surveyed areas of the Democratic Republic of Congo (DRC). It may well be getting harder to venture a continental total, although the overview table gives 301,773 definite, 56,196 probable, 60,780 possible and 68,596 speculative, which sums to 487,345, as compared with 579,532 in the 1995 publication. Much of this apparent reduction is the result of the omission of any figures for Congo and Sudan and a drastic downward revision of the previous estimates for DRC and Gabon. It is to be hoped that in the next edition of the *Database* the Specialist Group will overcome their scruples and make a serious attempt to address historical and current trends, *where the data permit*. If they do not, it is difficult to see who will.

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