Book Reviews

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Hutson, A. M., S. P. Mickleburgh, and P. A. Racey. 2001. Microchiropteran Bats: Global Status Survey and Action Plan. IUCN, Gland, 259 pp. ISBN 1-8317-0595-9, US$ 30.00

The stated aim of this book is to provide a framework for action for the conservation of bats. To achieve this aim, the authors present a comprehensive review of conservation priorities for 834 species of Microchiroptera. Co-authored by the leaders of IUCN's Chiroptera Specialist Group (CSG) and aided by a host of collaborators, this volume fills an important void following the publication of *Old World Fruit Bats — An Action Plan for their Conservation* by the same authors in 1991. In contrast to the latter volume, which includes detailed species accounts for most of the approximately 188 species of Old World fruit bats, *Microchiropteran Bats* provides the reader with an overview that, according to the authors "can be used as a basis for the development of more local or regional action, or actions for particular groups of bats species, by taxon or habitat". This book provides examples of recorded species declines and identifies major worldwide threats to bats. It includes summaries of 20 Species Action Plans as examples to highlight the range of conservation concerns and potential actions needed to protect the Microchiroptera. Major international treaties and conventions known to benefit bat conservation are noted.

The volume is organized into two parts. First, the authors provide a brief overview of the biology and ecology of the Microchiroptera as these disciplines are related to conservation. The second part addresses broad conservation issues and offers general recommendations for bat conservation. The authors note broad distributions and assign a general conservation status for each of the 834 species listed, representing 17 families and 137 genera. Among the species listed, approximately 22% are considered as 'threatened' and another 23% are listed as 'near threatened.' The volume includes only those taxa that are recognized as separate species for the purposes of conservation; it does not include subspecies. A software package, WORLDMAP, was used to evaluate the distribution of the Microchiroptera at the generic level. From these maps, key areas of diversity are identified at the global and regional levels, with the highest diversity identified as occurring in Central and northern South America. In addition, six major areas of diversity were identified in the Old World as follows: East Africa, Peninsular Malaysia, Sulawesi, Nepal/Northeast India, South China, and adjacent countries. The authors emphasized the need to extend this analysis to the species level so that conservation practices can be adequately assessed.

Several recommendations for action are highlighted, ranging from the protection of species and their habitats, to an emphasis on education and the development of conservation legislation. The authors emphasize the importance of conducting surveys and population monitoring to establish benchmarks for conservation action. Accounts of conservation problems and recommendations for action were identified for each major zoogeographic region, including Afrotropical, Australasian, Indomalayan, Nearctic, Neotropical, and Paleoarctic regions. Key areas of bat diversity in each of these regions are discussed and representative species of regional significance were identified. The importance of protecting important habitats, such as woodlands and caves, was noted, along with noting anthropogenic threats to local bat populations, including agricultural developments and misguided forestry practices. The authors place high priority on resolving taxonomic problems, particularly in tropical regions where the bat faunas are poorly known. Similarly, they emphasize the need for ecological research on species for which little is known. Without this type of information, meaningful conservation action will remain elusive. In an effort to encourage researchers to address these concerns, summaries of the conservation status for each country, including regional bibliographies are included. Recent successful conservation initiatives are used to highlight the types of local and regional action activities that should be expanded. The IUCN Red List is provided for each country, with

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a summary of the number of species noted in each category, along with a reference for the sources of the faunal data.

This volume offers a glimpse into the major issues and concerns that conservation biologists face with most microchiropteran taxa. It highlights the need to document species distributions and abundance, and to clarify taxonomic relationships of poorly known species. In addition, it emphasizes the need for education, sound conservation legislation, and the identification and protection of critical habitats.

The authors are to be commended for assembling the data summarized in this volume. This work stands as an important landmark for biologists to address the major conservation concerns for over three-quarters of the world's bat fauna. The insight that this book provides should help guide both bat researchers and natural resource managers for years to come. This volume will be of interest to anyone interested in the natural history and welfare of bats, including conservation biologists, natural resource managers, students, and scientists whose life's passion is the study of these fascinating mammals.

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LAVAL, R. K., and B. RODRÍGUEZ-H. 2002. Murciélagos de Costa Rica. Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, 320 pp. (pb.). ISBN 9968-702-63-3, price unknown

In the Neotropics, bats are major contributors to mammalian diversity. The wide range of ecological services they provide adds to their importance and the need for their conservation. This book serves those living in or visiting the Neotropics. It is truly bi-lingual with text in both Spanish and English, hence the clever use of a bilingual title Murciélagos de Costa Rica Bats. Each section is separated by language, with English on one page and Spanish often on the facing page. This format works very well for non-native Spanish speakers who may wish to improve their vocabulary and reading proficiency while learning about the bats of Costa Rica. The glossary at the end of the book is a further contribution in this direction.

The introduction briefly covers classification and diversity, anatomy, evolutionary origin of bats, ecology and conservation. In addition to an overview of the book's organization, the authors provide a brief review of their ongoing research and a checklist of the bats of Costa Rica. The remainder of the book includes 108 species accounts each with photographs or illustrations. As the authors point out, this is an impressive 11% of the known bats species of the world. Each account includes a description with a range of forearm measurements, distributions and natural history. Known distributions are given for the Neotropical range of each species followed by specific information for Costa Rica, including relative abundance. When species have diagnostic features useful for identification (e.g., wing sacs or distinctive dentition), these are included as black and white line drawings on the page with the color plates. The lack of an identification key is not a serious omission with the recent publication of a key in English (Timm and LaVal, 1998.) and another in Spanish (Timm *et al.*, 1999).

While there is a small map of the country showing the topography on the inside front cover, it is difficult to visualize where each species may be found. The inclusion of distribution maps for the species known to occur in Costa Rica would have enhanced this book considerably, especially for those not intimately familiar with Costa Rica.

The introductory information provides a good overview of bats for the amateur natural historian while the details in the species accounts provide a wealth of information for biologists working in Central America. The bibliography provides an excellent introductory review of the literature for Costa Rican bats. The index is also bi-lingual making it easy to find a given species account. The compact field guide size will make it easy to stow among the pesolas and calipers. With many shared species throughout region, this book is a valuable reference for anyone working in the area.

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