ANIMAL BIODIVERSITY: PATTERNS AND PROCESSES

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SCIENTIFIC PUBLISHERS (INDIA)

P.O. BOX 91

JODHPUR

Published by:
Pawan Kumar
Scientific Publishers (India)
5-A, New Pali Road, P.O. Box 91
Jodhpur - 342 001
E-mail: info@scientificpub.com

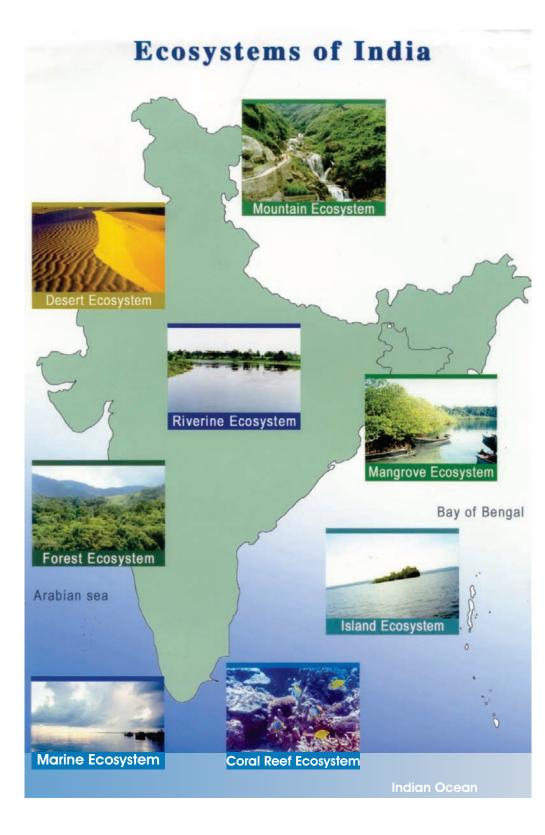
www.scientificpub.com

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ISBN: 81-7233-430-3

Lasertype set: Rajesh Ojha

Printed in India



PREFACE

An increased awareness of the impact of science and technology on society over the last two or three decades have led to an increased realization of deterioration of biological systems, which has assumed global dimensions. Technology has resulted in ecological changes at a very fast pace, and with our limited understanding of the functioning of ecosystems, the intensity of the implications pertaining to the loss of biodiversity i.e. the loss of species, genes and ecosystems have not been registered.

Immense economic benefits accrue to man because of the prevailing biodiversity. Therefore continued improvement of biodiversity, and hence the benefits, will depend on new and enhanced resources from nature. At any given time, changes in biodiversity, i.e. the increase or reduction or maintenance of the diversity of genes, species or ecosystems will depend largely on human activities. Access to these resources will therefore depend on scientific knowledge of these resources through studies of biodiversity to enable prediction of the most promising species, and choosing sites for prospective biological resources, which in turn will provide relevant information from the countless number of species.

The identification, recognition and emphasis related to this multifaceted discipline have assumed an increased relevance today, especially when such issues as environment, energy, global changes and sustainable development have become a part of basic education elsewhere in the world, aiming at an increased integration between basic and applied sciences. Furthermore, because of socio-economic changes, biological diversity has today come to occupy the central stage as it holds the 'key to the maintenance of the world'. It has emerged as a unifying discipline bringing together the ecologist, educationist economist, environmentalist, and resulting ลท interdisciplinary, multifunctional, problem-oriented education. Thus the essence of this education emphasizes the relevance and quality to cope with issues like ecosystem dynamics, environment and climate changes, energy sources, biotechnology, global changes, and sustainable development at the local, national and global levels.

Attitudes towards the diversity of species in diverse ecosystems are also changing as people face the impact of the direct cost of the loss of genes, species and ecosystems. Conservation is therefore increasingly recognized as

essential to economic development. Recent attempts in this regard have resulted in saving biodiversity, studying it and using it sustainably and equitably. The need to understand and validate traditional ecological knowledge for managing biodiversity by the local people has also come to be appreciated. Sustainably managing our biosphere in the face of global change is the need of the hour.

This book therefore attempts to provide an overall emphasis of diverse aspects of animal biodiversity involving all aspects referred to above. Brief extracts from the senior author's earlier publications on *General Animal Ecology* (Macmillan, 1985) and *Bioresources Ecology* (Oxford and IBH, 1985) on soil and aquatic ecosystems have enabled a better integration of the diverse aspects discussed.

In the preparation of this volume, we wish to express our thanks to Dr. K. Venkataraman of the Zoological Survey of India, Chennai, for his expertise and assistance, in particular on marine ecosystems and for providing some of the illustrations. To Dr. V.V. Ramamurthi of the Indian Agricultural Research Institute, New Delhi, Dr. B. V. David of Sun Agro Biotech Research Centre, Chennai, Dr. R.V. Varma of the Kerala Forest Research Institute, Peechi, Dr. S. Uthamasamy of the Tamil Nadu Agricultural University, Coimbatore, Dr. Sabu Thomas of St. Joseph's College, Calicut and Dr.V. Oommen of the Department of Zoology, University of Kerala, Trivandrum, we are indebted for their ready response to our request for some photographs. Thanks are also due to Shri E. Ragupathy for his painstaking efforts not only in typing the manuscript, but also scrutinizing it to be as error free as possible and to Mr. Jahir Hussain for his assistance in typing the sections dealing with literature, glossary and Index. We wish also to acknowledge the interest evinced by the Publishers, in the production of this volume.

Chennai 1.11.2005

T.N. Ananthakrishnan K.G. Siyaramakrishnan

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