ANIMAL BIODIVERSITY : PATTERNS AND PROCESSES

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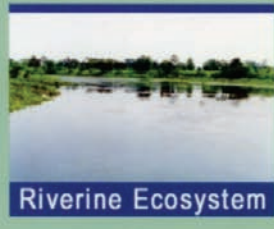
Ecosystems of India


Mountain Ecosystem


Desert Ecosystem


Riverine Ecosystem


Mangrove Ecosystem


Forest Ecosystem

Bay of Bengal


Island Ecosystem

Arabian sea


Marine Ecosystem


Coral Reef Ecosystem

Indian Ocean

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, environmentalist, educationist and economist, resulting in an 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.

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1.11.2005 **K.G. Sivaramakrishnan**

List of Illustrations

CONTENTS