

**BOOK REVIEW**

**WILDLIFE ECOLOGY AND CONSERVATION**

By

**Mundanthra Balakrishnan**

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*Wildlife Ecology and Conservation* by Mundanthra Balakrishnan, published by the Scientific Publishers, Jodhpur/New Delhi (India), with a forward by Prof. Dr. Walter R. Erdelen, Former Assistant Director-General for Natural Sciences, UNESCO is not just another book on wildlife; its primary focus is on education. Accordingly, its design reflects the series focus on “self-directed learning”, as pointed out in the preface at the beginning of the book by the series editor, Professor Anantanarayanan Raman of Charles Sturt University, Australia. The book uses the right approach, *viz.* a connotation of wildlife as encompassing all organisms not directly under human control and which build the fabric of our “natural ecosystems”.

Sustainable development and wildlife as defined by Mundanthra Balakrishnan in *Wildlife Ecology and Conservation* are closely interlinked. All these efforts are aimed at meeting the challenges of alleviating poverty, improving human health and providing clean water, food and energy for all. It has become ever clearer that conserving our biological diversity is not only for making sustainable development become reality, but for the well-being of humankind itself.

*Wildlife Ecology and Conservation* is targeted at college and university students and teachers. Depth and breadth of discussing wildlife and conservation issues is a major feature and strength of Prof. Balakrishnan’s book. This holistic approach is reflected *inter alia* in the 13 chapters, including introduction, which sets the scene and major ecological aspects of wildlife, followed by chapters on habitats, predator–prey interactions, ecological principles, human–wildlife conflicts, economic aspects related to wildlife, protected areas, conservation biology, and international

instruments. The book concludes with two chapters on ecological methods, one on traditional and the other on recently developed non-invasive methods used in studies of wildlife. In the first chapter of the book, the term “wildlife” is defined and wildlife ecology, niche, and ecological succession are introduced. Various biomes of the world and biogeographic zones of India are described in relation to major wildlife populations they contain. Chapter two deals with wildlife populations and habitats in which different natural habitats are described as centers of resources for specific wildlife populations. Natural and man-made disturbances in wildlife habitats are described with their adverse effects on wildlife populations. Adverse effects of climate change and ozone depletion on wildlife are also described in this chapter. The third chapter is on predator and prey interactions, which is the basis of maintenance of all natural ecosystems. Feeding is one of the major activities of all organisms, and the availability of preferred food items in the habitat is responsible for aggregation of organisms in certain habitats from time to time. When there is shortage of food items in relation to the phonological changes, organisms would tend to move away in search of food, leading to distribution and dispersal. Seed dispersal and mammalian foraging activities are also described in this chapter. Chapter four is on ecological principles in the context of wildlife management and conservation. Adverse effects of human induced factors in wildlife habitats and essential measures to mitigate are discussed. In this context, the author is optimistic to conserve and scientifically manage our wildlife resources, if proper measures are taken to achieve the support of local people in wildlife management. Chapter five is on conservation of threatened wildlife in India and neighbouring countries. This chapter illustrates conservation status of most of the mammalian fauna in the Indian sub-continent, in addition to major avian and reptilian fauna, which are threatened with extinction. Human-wildlife conflicts are dealt with in chapter six, with several examples and case studies from the Indian sub-continent and from different parts of Africa. Measures to mitigate this issue are also described with case studies from different parts of the world. Chapter seven is on wildlife farming and hunting. In general, many of the conservationists do not agree in farming and hunting of wildlife resources. However, these are essential parts of wildlife conservation under resource use programs and hence this chapter is important for wildlife ecology students. Economic benefits of wildlife are detailed in chapter eight. Methods to evaluate both consumptive and non-consumptive benefits from wildlife, economic losses due to some of the wildlife species, economic benefits from African civets, particularly in the Ethiopian context and ecological benefits from wildlife including

carbon sequestration are well described in this chapter. Chapters nine and ten are on protected areas and conservation biology, respectively. These chapters are prepared mainly based on illustrations following IUCN parameters on the establishment and categories of protected areas and management as well as on conservation problems, threatened categories of species, conservation strategies and benefits of conservation activities for the well being of future generations. Important international conventions on wildlife and nature conservation are described in chapter eleven, with major emphasis on those conventions and treaties more relevant for Asia and Africa. This gives wildlife students basic information on international regulations dealing with wildlife, and the roles that they can locally play in conservation initiatives. For example, many of our wetland ecosystems are in danger, and local awareness and public participation are key strategies to mitigate adverse effects of human activities around such threatened habitats. Chapter twelve of this book deals with traditional methods in wildlife ecology. Basic ecological techniques and the methods used in biodiversity assessment are described in this chapter. Traditional methods of animal population estimation, population indices and biodiversity indices are given, which wildlife ecology students can use for their practical classes as well as for research purposes. The last chapter of this book is on modern techniques in wildlife ecology and habitat analysis. Methodologies such as camera-trapping of animals, biotelemetry and DNA fingerprinting are described in this chapter as modern non-invasive techniques to study wild animals. Further, the application of remote sensing and geographical information system in habitat analysis and to reveal land-use/land-cover pattern changes is emphasized as a modern technique in wildlife habitat analysis, to study larger extents of areas using Landsat Imageries of different time series. This has become a very useful tool in wildlife habitat analysis in the recent past to study the fast changes taking place in natural ecosystems, and hence wildlife ecology students should have a basic understanding of this method.

Each of the chapters of this book ends with content-related questions posed to the readers. Thus, both theoretical and practical aspects of wildlife ecology and conservation are presented in simple language, which even those new to the field of wildlife can read and easily understand.

A major difference of this book to other similar publications is the 13 text boxes contributed by well known scientists working in the respective areas in which specific wildlife and conservation issues are highlighted. These include species-specific situations and research developments, examples of ecosystems, butterfly farming, and specific methodologies used in basic and

advanced wildlife research. Some of the boxes deal with ecology and behaviour of certain organisms such as caecilians, barbets, mountain nyala, lion-tailed macaque and bats. Mutualism is introduced in one of the boxes using a case study of plant and animal interactions in the Western Ghats of south India. Specific habitat types such as wetlands and mountain lakes are also introduced with the associated animal populations. Human influence on mountain lakes in Norway is illustrated by examples of introduction and spread of different species of freshwater fish. Recent advancements in wildlife research in India are revealed through the activities of the Wildlife Institute of India and Bombay Natural History Society in different boxes. The last two boxes on camera-trapping and remote sensing and GIS deal with some of the non-invasive modern techniques in wildlife ecology. Camera-trapping is a useful technique to locate the presence of shy wild animals, which are rare and elusive and hence could not be located during field surveys. Remote sensing and GIS techniques have advanced in the recent past and are being extensively used in wildlife habitat analysis and to find out changes in the habitat parameters including land-use/land-cover changes in response to development activities, from time to time.

With rapid population growth and development in the developing tropics, conservation of biodiversity and wildlife and related education efforts have become ever more pressing an issue. There are several first hand examples from the tropical regions presented in this book based on the direct information that the author accumulated during his over 40 years of research and University teaching experience in three continents; Asia, Africa and Europe. I do hope that *Wildlife Ecology and Conservation* will become a standard textbook for teaching and learning about wildlife and conservation at regional and international levels.

As several Ethiopian examples are presented in this book, I have pleasure to recommend this book for wildlife ecology and conservation related graduate and undergraduate courses in all Ethiopian Universities.

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Addis Ababa,

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