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Ecology- A Review

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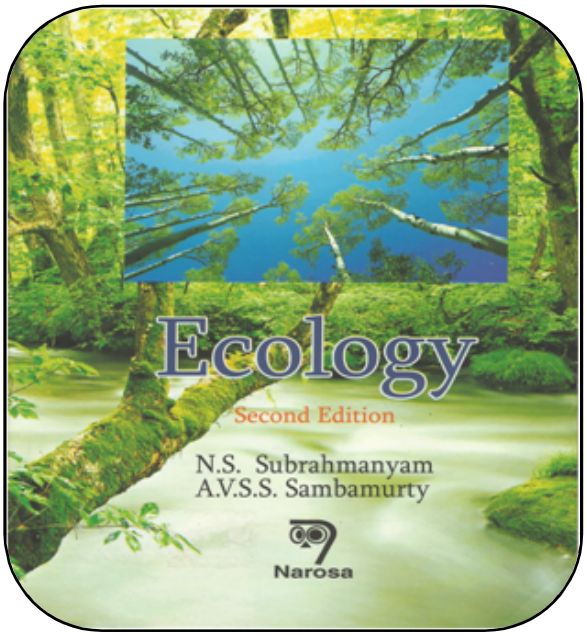

Ecology is the branch of biology which deals with the study of living organisms and their interaction with the environment. This book offers a comprehensive treatment of the subject related to the ecology of plants and animals consisting of 32 chapters, glossary, practical ecology the earth summit, and etc. This book will be most useful to the undergraduate and post graduate students of botany, zoology, environmental sciences, life sciences, forestry, agriculture, environmental chemistry, environmental engineering, and toxicology and for those working in the related fields of environmental sciences and ecology. This book on the ecology and ecosystem is unlike any other. It is not only a collection of facts or information about the ecology and ecosystem. It is about the way we all should live. It is expected to give you information about the ecosystem or environment that will lead to a concern for our own environment. When we develop this concern, we will begin to act at our own level to protect the environment we all live in. This is the objective of the book and the content is a basis on which we must all realign our lives.

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An 'Ecosystem' is a region with a specific and recognizable landscape form such as forest, grassland, desert, wetland or coastal area. The living community of plants and animals in any area together with the non-living components of the environment such as soil, air and water establish the ecosystem. Ecosystems have been formed on land and in the sea by evolution that has created species to live together in a specific region. Thus ecosystems have both non-living and living components that are typical to an area giving it its own special characteristics that are easily observed.

The first Chapter introduces the major concepts in the ecology and ecosystem with principles and scopes. Also it explains the how life on planet earth evolved and gives the relation between man and environment. Chapter 2 includes the ecological factors such as light and temperature plays an importance in the plant and animal kingdom. The third Chapter forms water concepts with detailed measurements related to rainfall and humidity in India. In Chapter 4, the authors mainly deal with the wind and topographical factors of ecology and their role in the existence of living organisms.

The fifth Chapter gives the effect and ecological uses of fire. Edaphic (soil) factor involvement in the ecology and ecosystem and detailed account of soil conservation (Chapter 6). The next chapter (Chapter 7) deals with the biotic factors of ecology including mutualism, commensalism, competition, predation and other concepts in detail. Further Chapter 8 gives the intra and inter specific relationships within the animal populations, and other aspects including antagonism and parasitic adaptations (Chapter 9). In tenth chapter gives the ecological concepts of the species including the law of tolerance and flora of Delhi, Vishakhapatnam and Osmanabad (Andhra Pradesh). Chapter 11 gives the detailed account on the population ecology, growth, structure, regulation and relation with the environmental complex.

The Chapter 12 shows the nature and structure of plant communities and ecotone formation. The plant communities were analyzed in detailed manner and with community classification and methods of studying plant communities by various methods (Chapter 13). Similarly, Chapter 14 provides the various methods of studying the animal communities by different procedures. The Chapter 15 deals with the different kinds of plant succession until they reach climax. Further Ecosystem Ecology (Chapter 16) deals with the fundamental concepts, principles, structure and functions of Ecosystem. Also includes the various biogeo chemical cycles of various elements like H. Chapter 17 includes the Marine Ecology deals with physico-chemical characteristics of marine Environment. The Chapter 18 gives the Ecological adaptations of plants and their Ecological uses and their classifications. Chapter 19 provides the productivity of different Ecosystems.

Twentieth Chapter gives less detail about the need Ecology and it does not provide the management, and harmful and beneficial aspects of weeds. Next Chapter (21) provides the importance of germplasm and cryopreservation of plant sources. Also an indicator organism provides the details of in the indicators of minerals in Chapter 22. In additional to these, the next Chapter (23) shows the definition, types, sources and effects of various pollution and control measures of them. Chapter 24 deals with the conservation of Flora and Fauna: the endangered species with the implementation details of National Forest Policy and Forest Conservation through law.

Chapter 25 gives the resources of different forms of energy, conventional and non-conventional energy resources, renewable and non-renewable resources, and gives the applications of alternative energy sources. The soil and water conservation methods are provided mainly in context of India are given in Chapter 26. The phytogeography (27) gives the distribution of vegetation and forests of India. Similarly, Zoogeography provides the origin and distribution of animals in detail. Also information about the camouflage and migration of birds are discussed (Chapter 28).

The applications of ecology provide the agriculture, biological control and management of land use pattern (Chapter 29). In Chapter 30, the modern concepts such as ecological issues of India including agricultural and industrial pollution were provided. Further the ecology of microorganisms gives the number and diversity in various sources – lakes, streams, rivers and soil (Chapter 31). Chapter 32 deals with the environmental management with the detailed Environmental Impact Assessment (EIA) and Conservation of wetlands, mangroves, minerals and wastelands, and prevention of health hazards. The suggested readings (with the list of 31 book references) are given and these are very less in number. And more recent and advances research articles from various research journals are not at all included. This is the negative aspects of this book. The questionnaires are quiet better and glossaries of ecological terms are good and understanding within 30 pages. Appendix 1 includes the practical ecology (32 experiments) and these are latest one and everyone can be easily followed, and analyzed the various samples and do the practical well. Appendix 2 provides the important features of Earth Summit and Rio

declaration. Appendix 3 gives the list of environmental agencies, journals and abbreviation related to the ecology. Alphabetical index with page numbers (up to 25 pages) are given in detail. Totally this book provides a thorough overview of both scientific and social issues of ecology and ecosystems.

This book totally deals with major ecology concerns that have been identified as important areas where background information is essential for a better understanding of our environment. It pressures on a composed view of issues that affect our daily lives. These issues are related to the conflict between existing development strategies and the need for environmental conservation. Unlike most other books, it not only makes the reader better informed on these concerns, but is expected to lead him or her towards positive action to improve the ecosystem and environment.

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