

Preface

Biodiversity is a word that describes the variety of living things. "Bio" (from a Greek word) refers to living and "diversity" refers to differences and variety. Living organisms express their diversity in hundreds of different ways – both external and visible and internal and invisible.

The concept of biodiversity should be an expression of life which includes variability of all life forms and their organisation and inter-relationships from the molecular to the biosphere level, which includes cultural diversity. Biodiversity includes all forms of life and all areas that are home to natural and domesticated life forms. The threats to biodiversity are threats to all components of it; hence fragmented treatment of biodiversity must be rejected. Biodiversity is a concept which occurs at the balance between the spiritual understanding that, life is one and the scientific understanding that the diversity of life is interconnected.

The term "Ecology" was introduced by Haeckel in 1869. His purpose was to focus attention on relationships, especially relationships with the environment, rather than on organisms and species. The coinage was taken from the Greek for household (Oikos) and suggested a broader interdisciplinary perspective on phenomena in context. In practice, it has proved very difficult to

cover the structure of the "house," as well as the relationships of all the occupants with it and with each other, in one analysis.

How ecosystems work and what part they play in biodiversity remains a mystery. But we do know that they perform a host of invaluable services for the human species. Biodiversity's fundamental value is neither aesthetic nor economic but environmental, even though most people are largely unaware of this. The value of biodiversity is often measured in terms of the number of species living in a given area. But the interactions between the many species in an ecosystem, and between them and the environment's physical and chemical components are also very important. This highly intricate web of relationships makes an ecosystem more valuable than the sum of the species it contains.

Ecosystems perform services that are essential for the survival of the human species. They fix carbon in the atmosphere and produce oxygen, protect soil from erosion and keep it fertile, filter water and replenish aquifers, provide pollination and anti-parasite agents and so on.

This treatise would be of great interest to a large group of readers—undergraduate and postgraduate students of ecology, biology, genetics and biotechnology, environmentalists, research workers, teachers and candidates appearing at various competitive examinations like NET, ARS and Civil Services Examinations.

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