



Paper 1a BIODIVERSITY AND CONSERVATION BIOLOGY
M.Sc. va (Candidates admitted from the academic year 2008-2009)

Core Theory

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UNIT I

Characterization of Biodiversity: Definitions of the following terms: - Biodiversity, Domesticated Biodiversity, Agrobiodiversity, Introduced Biodiversity and Native Biodiversity. Components of Biodiversity: **Ecosystems** : Forests, Wetlands, Grasslands and Mangrove ecosystems. Classification of Habitats : Biogeographic biomes (Udvardy), Life zone classification (Holdridge). **Species Diversity** : α , β and γ diversity. Endemic species and patterns of distribution with special reference to India and **Genetic diversity** - Assessing biodiversity, RFLP, RAPD, Allozymes and PCR.

UNIT II

Magnitude, distribution and measuring of Biodiversity: Current estimates of Biodiversity. Megadiversity countries. Biodiversity indices and sampling techniques. Inventorying and Monitoring biodiversity.

UNIT III

Threats to Biodiversity: Habitat degradation and fragmentation; Overexploitation; Alien Invasive Species and their Impact. Extinction of species: past episodes of extinctions and causes of extinction. Threatened species: Concept of IUCN Red List Categories. Climate change and its impact on Biodiversity.

UNIT IV

Valuing Biodiversity : Biodiversity values. Biocentrism and Ecocentrism. Assessing the economic value of the Biodiversity. Biodiversity and Intellectual Property Rights.

UNIT V

Conservation Genetics: Factors affecting Genetic variations. Population Viability. Effective population size and its estimation.

UNIT VI

Conservation Approaches: *In situ* and *Ex situ* approaches. Ecoregions (WWF), Man and Biosphere Reserve Programme (MAB-UNESCO), Protected Areas (IUCN), Hotspots (CI), WCMC. International and National legislations and

conventions on biodiversity – CBD, NBA, CITES and TRAFFIC. Protected Areas of India: Sanctuaries, National Parks and Biosphere Reserves of India; community approach to conservation. Ecotourism and its impacts on conservation. Restoration Ecology.

Suggested Reading

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- LOVEJOY, T.E. & L. HANNAH (Eds.). 2006. Climate Change and Biodiversity. TERI Press, New Delhi
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