

**ELECTIVE IV (EC) :  
FOREST ECOLOGY AND WILDLIFE MANAGEMENT**

**UNIT 1:**

Concepts of forest ecology: analysis of forest ecology present - day forests and silviculture. Forest Tree Variability and diversity: Components of phenotypic variation, the ecotype concept, Niche. Life and structure-Reproduction and tree farm.

The forest environment - solar radiation Temperature, Atmospheric moisture and other factors, climate, soil, nutrient cycle, the soil - plant water cycle, Fire and forest productivity.

**UNIT 2:**

The Ecosystem: Site, community and Ecosystem analysis. Animals and their roles in forest ecosystem. Macroevolution and reciprocal adaptations. Competition and survival, forest succession - stages of succession natural succession, climax forest fire and control, wind throw. Logging, climatic changes spatial variation in the forest - Forest community. Spatial continuity of the forest community, discrete forest communities. Merging forest communities. Spatial continuity of the forest community, discrete forest communities. Merging forest communities. Analysis of forest ecosystem. Ecosystems and system analysis. Systems model, productivity examples of ecosystem analysis. Systems model, productivity examples of ecosystem analysis.

**UNIT 3:**

Forest resources and forest types, Tropical wet evergreen, tropical semi evergreen, dry evergreen, tropical moist deciduous, sub-tropical wet deciduous, Sub-tropical pine, sub-tropical dry, Dry deciduous, tropical thorn, moist temperate, dry temperate, alpine and grassland. Ecological significance of these forests, forest management practices and preservation of forests.

**UNIT 4:**

Importance and value of biodiversity; Losses in biodiversity, benefits and functions of biodiversity, exploitation, evaluation and assessment. Ecological basic for evaluation, rarity of species, Bio-indicators, medicinal plants - different systems of practice; Ayurveda, Siddha, Unani and Homeopathy, Traditional plants. Medicinal plants of India - marketing, tribal medicines. Conservation of medicinal plants and their genetic resources. Mapping, surveying techniques, methods of valuing nature and the environment - national monetary values, valuing economic benefits, energy-based evaluation, Replacement value. Conservation and protection ecological evaluation of biotic communities, protection of various habitats, planning and development.

## **UNIT 5:**

Wild life resources and conservation wild animals Endangered mammals, reptiles, Birds and other animals and plant life. Wild life management and protection- Wild life projects in India. Role of governmental and nongovernmental organisations in Wild life protection. Role of IUCN, WWF and other international agencies in Wild life management.

## **REFERENCES**

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2. Balakrishnan M., Borgstorm R., and S.W.Bie. 1994. Tropical ecosystems.A Synthesis of Tropical ecology and conservation. Oxford and IBH publishing company and Pvt Ltd., New Delhi.
3. Puri G.S., Gupta R.K., Meher-Homji V.M., and Puris .1989. Forest Ecology. Oxford and IBH publishing Co. Pvt. Ltd., New Delhi.
4. Sharia V.B. 1982. Wildlife in India.Nataraj Publishers, Dehra Dun.
5. Spurr S.H. and B.V. Barnes.1980. Forest Ecology. John Wiley and Sons, NewYork.
6. Whitmore. T.C. 1993. An Introduction to Tropical Rainforests. ELBS-Oxford University Press. Oxford.