



Government of India
Ministry of Environment, Forest & Climate Change
ZOOLOGICAL SURVEY OF INDIA
Andaman and Nicobar Regional Centre
Port Blair-744 102, A & N Islands

SYLLABUS - ZOOGEOGRAPHY

Chapter 1: Introduction to Biogeography

Zoogeography, History of Zoogeography, Evolutionary and Ecological Principles, Subdivisions- descriptive, Casual, Experimental, and Applied zoogeography.

Chapter 2: Distribution Patterns of Individual Taxonomic Units

Geographical range of species, Migrations, Ecology of Dispersals- Barriers, Active and Passive dispersal, Anthropochore dispersal, time as a factor affecting dispersal abilities of animals, modes of dispersal and dispersal routes of fauna.

Chapter 3: Zoogeographical Realms of Land and Sea

Physical features and fauna, Land (Palaeartic, Neotropical, Nearctic, Oriental, Australasian, Ethiopian); Sea (Tropical, Northern, Southern, Oceania).

Chapter 4: The Biome Concept and the Biomes

Desert, Rainforest, Savanna, Steppe, Tundra, Tiaga, Oreal, Silvaea, Mangrove.

Chapter 5: Aerography

Distribution area- mapping, shape, ecology, history, Geography of the area, Dynamics of the area, Relict areas, area of aquatic animals, Plant areas.

Chapter 6: Regional and Analytical Zoogeography

Allen's Eco-geographic system, the concept of Biotic Provinces, Wallace's work on faunal regions, Engler's work on floral regions.

Chapter 7: Evolution of Distribution Areas

Interacting entities that influence zoogeographical processes- geographic Entities, Temporal Entities, Organismic Entities, Biogeographical Entities, Extinction and Zoogeography, Theory of Non-Equilibrium, Equilibrium, Island Biogeography- Patterns in species richness, Assembly and evolution of insular communities.

Chapter 8: Eco-geographical Rules

Bergmann's Rule, Rensch's rule, Gloger Rule, Hesse's rule.

Chapter 9: Evolution

Origin, Evolution and Diversification of life; Natural Selection; Levels of Selection. Types of Selection (stabilizing, directional etc.); Sexual Selection; Genetic drift; Gene flow; Speciation, Adaptation; Convergence; species concepts; Life history strategies; Adaptive radiation; , Primate and Human Biogeography, and Evolutionary ecology.

Chapter 10: Origin of Genetic Variation

Mendelian genetics; Polygenic traits, Linkage and Recombination; Epistasis, Gene-Environment interaction; Heritability; Population Genetics; Molecular evolution; Molecular clocks; Systems of Classification-Cladistics and Phenetics; Molecular Systematics; Gene Expression and Evolution.

SUGGESTED READINGS

1. Frank Evers Beddard, 2008. A Text-Book of Zoogeography. Published by BiblioBazaar, LLC, 2008. Joachim Illies, 1974. Introduction to Zoogeography. Macmillan (January 1974).
2. Miklos D. F Udvardy, 1969. Dynamic zoogeography: With special reference to land animals. 445 pages. Van Nostrand Reinhold (1969).
3. P.J. Darlington, 1957. The zoogeography: The geographical distribution of animals. Wiley Publ. New York.
4. Paul Muller, 1974. Aspects of Zoogeography. Junk Pub. (January 1974).
5. S. K. Tiwari, 2006. Fundamentals of World Zoogeography. Vedams eBooks (P) Ltd (India). 384 pages. (Sarup & Sons, Ansari Rd. Daryaganj, Delhi).