



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

## **SYLLABUS - ECOLOGY**

### **Chapter - 1**

History of Ecology - Evolution & Biogeography - Population Ecology - Community Ecology - Evolutionary Ecology - Biology of Cave fauna - Biology of Herpetofauna - Biology of Avifauna - Biology of Mammals

### **Chapter - 2**

Animal Behaviour - Mechanisms and Evolution - History and approaches - Classical ethology - Hormones and behavior - Ontogeny of behavior - Sensory ecology - Sociobiology - Evolutionary models to understanding strategies for foraging - Competition group living - Sexual selection and mate choice - Parental care and family conflicts - Predator-prey interactions - Theoretical, integrative and computational approaches to studying animal behavior - Optimal foraging theory - Learning and memory - natural and sexual selection

### **Chapter - 3**

Environmental Biology : Structure & Functions of Ecosystem - Valuation of Ecosystem services - Interaction between organism & the physical environment - Linking biodiversity to ecosystem function

### **Chapter - 4**

Introduction to Biodiversity and Conservation Biology - Adaptation and Biodiversity - Diversity of Living Organisms - Animal Diversity : Invertebrates & Vertebrates - Research Issues in Ecology and Evolutionary process - Habitat : Ecological Niche, Niche construction - Community assemblage - Island biogeography - Meta-population Biology - Macro-ecology

### **Chapter - 5**

Collection & identification of insects-Spiders – Ecosystem services of Spiders – Role in Agro ecosystem – Spider Web – Spider Silk – Biology & Ecology of Spider – Spider Venoms

## SUGGESTED READINGS

- Barrion, A. T. & J. A. Litsinger 1995. Riceland spiders of south and southeast Asia. Wallingford: *CAB International*.1-700.
- Begon, M., Townsend, C.R. and Harper, J. L., 2006. Ecology from Individuals to Ecosystems. Blackwell Publishing.
- Chapin, F. S, Matson, P.A. and Mooney, H.A. 2002. Principles of Terrestrial Ecosystem Ecology. New York: Springer. ISBN 0-387-95443-0.
- Davies, N B., Krebs, J R., and West, S.A., 2012. An Introduction to Behavioral Ecology, 4th ed. Oxford: Wiley-Blackwell.
- Fath, J., 2010. Global Ecology- a derivative of encyclopedia of ecology. Elsevier Academic Press.
- Frances and J. Murphy 2000. An Introduction to the spiders of South East Asia.*Malaysian Nature Society*. 1-625
- Krebs, C. J., 2009. Ecology: The Experimental Analysis of Distribution and Abundance (Sixth ed.). San Francisco: Benjamin Cummings. ISBN 978-0-321-50743-3.
- Odum, E.P., 1961. Fundamentals of Ecology
- Reinhold, C.L.D. 2001. Forest Spiders of South East Asia.*Brill*.1-583
- Smith, T.M and Smith, R.L., 2012. Elements of Ecology (Eighth Edition). Boston: Benjamin Cummings. ISBN 978-0-321-73607-9.