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# International Training Course on Mangrove Biodiversity and Ecosystems

Centre of Advanced Studies in Marine Biology  
Annamalai University, India

## 1. Introduction

- i. Marine environment
- ii. Waves and tides
- iii. Understanding biodiversity

## 2. Diversity Assessment Methods

- i. Biodiversity values
- ii. Methodology for assessment of biodiversity
- iii. Pre-treatment of data for biodiversity assessment
- iv. Assessment of marine ecosystem health
- v. IUCN conservation status assessment
- vi. The Barcode of Life Initiative
- vii. Molecular tools for assessing genetic diversity
- viii. DNA markers for understanding mangrove genetics
- ix. Genetic diversity in mangrove animals – case studies

## 3. Mangrove Ecosystems

- i. Distribution of mangrove ecosystems
- ii. Ecology and environment of mangrove ecosystems
- iii. Methods of studying mangroves
- iv. Biology of mangroves
- v. Importance of mangrove ecosystems
- vi. Bioprospecting potential of marine invertebrates

## 4. Biodiversity in Mangrove Ecosystems

### 4.1 Floral Diversity

- i. Marine viral diversity
- ii. Bacteria and fungi
- iii. Actinomycetes
- iv. Phytoplankton

- v. Seaweeds
- vi. Seagrasses
- vii. Mangroves
- viii. Salt marsh and other coastal flora

#### **4.2 Faunal Diversity**

- i. Zooplankton
- ii. Nematodes
- iii. Polychaetes
- iv. Amphipods
- v. Biodiversity of brackishwater amphipods (crustacean) in two estuaries, southeast coast of India: case study
- vi. Prawns and Shrimps
- vii. Brachyuran Crabs
- viii. Brachyuran crabs in mangroves: a case study
- ix. Insects
- x. Molluscs
- xi. Molluscs in mangroves: a case study
- xii. Fin fish
- xiii. Mudskippers
- xiv. Ornamental fish
- xv. Parasitic fauna of fishes
- xvi. Wood borers
- xvii. Reptiles
- xviii. Birds
- xix. Mammals
- xx. Bycatch resource

#### **5. Threats to Mangroves**

- i. Degradation and destruction of mangroves
- ii. Pollution threats: water quality
- iii. Persistent chemicals

#### **6. Policy and Sustainable Management of Mangroves**

##### **6.1 Conservation and Management Strategies**

- i. Restoration technologies
- ii. People's participation
- iii. Alternate livelihood: a case study
- iv. Setting up a backyard hatchery for marine ornamental fish: an alternative livelihood
- v. Application of remote sensing & GIS

##### **6.2 Global Policies**

- i. Role of institutions
- ii. Conservation strategies in different countries