

CERTIFICATE COURSE ON PARA-TAXONOMY INCLUDING PBR

(Level 5-NSQF)

Duration: 4 months

Definition of para-taxonomist:

Person who has not undergone higher education in taxonomy, to identify & authenticate plants/animals, but he/she has inculcated the skills to identify plants/animals based on key field characters for select number of locally available flora and fauna via undergoing short term course as indicated. These candidates will hone the following skills as mentioned below:

1. Collection, preservation and curation of flowering plants and major animal phyla
2. Cataloguing, databasing and maintenance of collections/specimens in Museums and Herbariums
3. Basic interpretation of biodiversity data using indices
4. How to conduct bird counts and mammal census
5. Identification of the locally common flowering plant species and animal species
6. Basic skills in PBR document preparation
7. To conduct Habitat Survey (GRID-DSS approach), habitat monitoring, mapping of flora and fauna, use of mobile apps and available e-tools
8. Basic procedures and methods in identification of illegally traded flora and fauna

Syllabus

(560 hours)

1. Basic concepts in Biodiversity and Taxonomy (35 hours)

- i. Introduction to Biodiversity science
- ii. Faunal diversity profile of India (focusing on specific ecosystems aquatic and terrestrial and also biogeographic regions)
- iii. Taxonomy and its relevance to biodiversity studies, focusing on the role of Para taxonomists
- iv. Animal distribution and zoogeography
- v. Species concepts, Morphospecies/ Recognisable Taxonomic Units (RTUs), Molecular taxonomy, Integrative taxonomy
- vi. Taxonomic collections, descriptions, identification keys, species checklists and their relevance
- vii. Concept of Rare, Threatened and Endangered fauna
- viii. Ecologically and economically important fauna- both beneficial and harmful

2. Floral diversity and Endemism

(35 hours)

- i. Major Ecosystems [Terrestrial (Forest, Grasslands), Wetlands (Fresh water, Estuarine, Coastal and Marine), Desert (Dry/Cold)]

- ii. Vegetation Types in India
- iii. Introduction to various plant groups
- iv. Phytogeographical Regions of India
- v. Biodiversity Hotspots in India and Endemism in Indian Flora with special emphasis on Flowering Plants

3. Field surveys, collection, preservation, identification and analysis of fauna- principles and procedures (140 hours) (inclusive of field work /practical)

- i. Field surveys, collection, preservation and curation of fauna, with special focus on major invertebrate and vertebrate phyla
- ii. Labeling and documenting collection data, cataloguing, databasing and maintenance of collections/museum specimens
- iii. Identification of locally common aquatic and terrestrial macro-invertebrates and vertebrates
- iv. Animal census techniques – (Birds, mammals) including Camera traps
- v. Status surveys of animals and their relevance
- vi. Basics in interpretation of biodiversity data using Biodiversity indices

4. Field surveys, collections, preservation and identification of flora (105 hours) (inclusive of field work /practical)

- i. Morphology of flowering plants (vegetative and reproductive parts) and acquainting botanical terms
- ii. Method of dissecting floral parts and observation
- iii. Introduction to local flora with their local and botanical names
- iv. Collection of plants and field data
- v. Method of poisoning, mounting and preservation of plant specimens (herbarium/museum)
- vi. Incorporation and curation of specimens (herbarium/museum)
- vii. Method of identification using Floras/Revisions/Monographs
- viii. Preparing artificial keys for identification

5. Economic botany and Traditional knowledge

[35 hours]

- i. Introduction to Economic Botany (useful plants and plant products)
- ii. Medicinal Plants and Folklore/Traditional Indian Medicinal Systems
- iii. Indigenous Tribal Communities and Traditional Knowledge (region-wise)
- iv. Sacred Groves and Components

6. People's Biodiversity Register (PBRs) for sustainable development- (Faunal component) (70 hours – inclusive of 20 hours theory and 50 hours practical)

- i. PBRs and their relevance
- ii. Biological resources, Acts & Rules and Preparation of Peoples Biodiversity Registers (PBRs)
- iii. Biological Diversity Act 2002 and Biological Diversity Rules 2004
- iv. NBA and Biodiversity Boards and Institutional framework for the PBR process
- v. Role of State Biodiversity Boards and Biodiversity Management Committees in PBR preparation
- vi. Methodology and preparation of PBR
- vii. Fauna and Flora documentation (wild as well as domesticated, including aquatic - both freshwater and marine)
- viii. Traditional knowledge documentation in PBR
- ix. Landscape, lifescape, waterscape and soil types documentation in PBR
- x. Data collection on socio-economics and other institutions/facilities.

7. Wildlife (Fauna) Protection & Conservation (35 hours) (theory and practical)

- i. Legislations, Acts, laws and Conventions for protection of wildlife in India – special focus on fauna in Wild Life (Protection) Act 1972, IUCN and CITES and Enforcement agencies
- ii. Common fauna in Wildlife trade and poaching in India and basics on techniques involved in identification of fauna in wildlife trade
- iii. Concept of wildlife crime with case studies
- iv. Basics on practices and procedures in wildlife crime investigation
- v. Field visits to conservation areas/zoological parks/institutions

8. Wildlife (Flora) Protection and Conservation (35 hours)

- i. IUCN Red List Categories and Criteria with special reference to Threatened flora of specific region
- ii. Introduction to CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora)
- iii. An overview of CITES-listed Plant species
- iv. Introduction to Non-Detriment Finding (NDF) for plant species
- v. Identification of illegally traded plant species using Pharmacognosy techniques
- vi. Visit to various conservation sites (in situ/ex situ)

9. Training on GRIDDS and GIS (70 hours)