ZOS 553- WILDLIFE CONSERVATION AND MANAGEMENT

Teaching hours **10hrs /Unit**

COURSE OUTCOME:

1. The course provides a broad outline on various aspects of 'Biodiversity conservation'
2. It includes levels of understanding biodiversity in different ecological biomes, methods of population study and documentation.
3. Interaction of the species and their uniqueness, threats and conservations strategies, legal aspects on conservation of biodiversity, special projects and their current status are also included.
4. Threats to our environment and how it is possible to solve these issues scientifically.
5. Students will be visiting the *in-situ* and *ex-situ* conservation and management facilities to learn more about the effective steps taken by the conservation authority in saving the unique /rare/ threatened animals.
6. The theoretical foundation will help the biologist to take part in the effective wildlife conservation and management program with the advanced scientific methods.

UNIT I

Biodiversity concepts- Ecosystem diversity, genetic diversity, species diversity. Biodiversity from ecological, taxonomical and evolutionary prospective (Alpha, Beta and Gamma diversity). Biodiversity assessment- Inventorying and monitoring biodiversity- sources of information, data collection and management. Taxon data sheet. Biodiversity indices.

UNIT II

Zoo geographical regions of the world and ecological subdivisions of India. Biodiversity hotspots. Biome essays- Tropical and Temperate forests, Tundra forests, Boreal forests, Cave and Mountains, Coastal ecosystems, Mangroves and Estuaries, Coral reefs, Lakes and Rivers.

UNIT III

Endemic species. Species interaction. Concept of niche, territory and home range. Keystone species. Unique Indian animals- diversity and distribution. Capturing and marking techniques- entrapment, darting, tagging and banding. Population analysis- territory mapping, line transects, capture-recapture, pellet count, pug mark, call track count. Radio telemetry. Still and Video photography.

UNIT IV

Threats to biodiversity- habitat destruction, climate change, exotic species introduction, over exploitation. Wildlife diseases and their control. Species extinction. Extinction vertex. IUCN Red list criterions and categories; Biodiversity conservation- in-situ methods- National parks and Sanctuaries. Ex-situ methods- captive breeding program- role of Zoos and Botanical gardens. Gene bank/ seed bank.

UNIT V

Legal aspects- National and International conventions- CITES, TRAFFIC; Wildlife laws- Wildlife (protection) Act-1972; Indian biodiversity laws; Biodiversity Act, Earth summit, Ramsar convention. Special projects- Project Tiger, Gir Lion project, Project Elephant, Crocodile breeding project.

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