



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND DESIGN

COURSE NAME : 19MC003 ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE

III YEAR / VI SEMESTER

Unit V- Traditional Knowledge in Different Sectors

Topic 6 : Management of biodiversity



Introduction to Biodiversity

- What is Biodiversity?

- Definition: The variety of life forms (plants, animals, fungi, microorganisms) within a specific area or ecosystem.

- Importance: Biodiversity is essential for ecosystem stability, human well-being, and the planet's health.



Importance of Biodiversity

- Ecological Importance:
 - Ecosystem services (e.g., air and water purification, pollination, soil fertility).
 - Resilience of ecosystems to climate change and natural disasters.
- Economic Importance:
 - Agriculture, forestry, and fisheries rely on biodiversity.
 - Pharmaceuticals and other biotechnologies.
- Cultural and Aesthetic Value:
 - Many cultures depend on biodiversity for traditions, spirituality, and tourism.



Threats to Biodiversity

- Habitat Destruction and Fragmentation:
 - Urbanization, deforestation, and agricultural expansion.
- Pollution:
 - Air, water, and soil pollution affecting wildlife.
- Climate Change:
 - Rising temperatures, altered weather patterns, and extreme events.
- Invasive Species:
 - Non-native species threatening native ecosystems.
- Overexploitation:
 - Overhunting, overfishing, and unsustainable harvesting.



Biodiversity Management Approaches

- Protected Areas:
 - National parks, wildlife reserves, and marine protected areas.
 - Role in conservation and species protection.

- Restoration of Ecosystems:
 - Habitat restoration through reforestation, wetland restoration, and soil rehabilitation.

- Sustainable Use of Resources:
 - Sustainable agriculture, forestry, and fishing practices.
 - Incorporating biodiversity conservation into business models.

- Legislation and Policies:
 - International treaties like the Convention on Biological Diversity (CBD).
 - National policies and regulations to protect biodiversity.



Conservation Strategies

- In-situ Conservation:
 - Protection and management of species and habitats within their natural environment.
- Ex-situ Conservation:
 - Captive breeding, seed banks, and gene banks.
- Community Involvement:
 - Local communities as key partners in biodiversity conservation.
 - Examples: Community-based conservation projects.
- Public Awareness and Education:
 - Raising awareness about biodiversity and its importance.
 - Educational programs, campaigns, and outreach initiatives.



International Cooperation and Frameworks

- Convention on Biological Diversity (CBD):
 - The role of CBD in global biodiversity conservation.
- Other Global Initiatives:
 - United Nations Decade on Ecosystem Restoration.
 - Sustainable Development Goals (SDGs) and their connection to biodiversity.
- Case Study:
 - A real-world example of international collaboration in biodiversity management (e.g., Amazon rainforest conservation efforts).



Role of Technology in Biodiversity Management

- Biodiversity Monitoring:
 - Use of satellites, drones, and GIS in tracking biodiversity.
- Genetic Technologies:
 - DNA barcoding and CRISPR for species identification and conservation.
- Citizen Science:
 - Public participation in monitoring biodiversity through apps and platforms.



Challenges in Biodiversity Management

- Financial Constraints:
 - Funding gaps in conservation efforts.
- Political and Social Barriers:
 - Conflicting interests between economic development and biodiversity conservation.
- Climate Change:
 - The unpredictable nature of climate change impacts.
- Lack of Awareness and Engagement:
 - Public disengagement and underestimation of biodiversity's value.



Conclusion

- Summary:

- Biodiversity is essential to the health of the planet, and its management is critical for long-term sustainability.

- Call to Action:

- Encourage collective efforts in conservation, awareness, and policy change.

- Closing Thought:

- "The loss of biodiversity is the loss of life itself. Protect it, and we protect our future."



Any Query????

Thank you.....