

**A.S.D GOVT. DEGREE COLLEGE FOR WOMEN (A),**  
(Re- Accredited by NAAC with B Grade)  
**Jagannaickpur, Kakinada-533002, East Godavari, APS**

**DEPARTMENT OF ZOOLOGY & AQUACULTURE TECHNOLOGY**

**2018-2019**



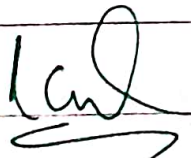
**Guest Lecture**

**on**

**Biodiversity Conservation**

**ASD Govt. Degree College for Women(A)**  
Jagannaickpur, Kakinada

**Activity Register 2019-20**

Date	30-10-18
Conducted through (DRC/JKC/ELF/NCC/NSS/ Departments etc.)	Zoology department
Nature of Activity (Seminar/Workshop/Extn. Lecture etc..)	<b>GUESTLECTURE</b>
Title of the Activity	GUESTLECTURE
Name of the Department/Committee	<b>Department of zoology</b>
Details of Resource Persons ( Name . Designation etc..)	M.SRINADH Koringa wild life conservation
No.of students participated	33 III CBZ
Brief Report on the activity	Discussed and explained how to conserve the endangered species. And explained about the importance of conservation of bio diversity
Name of the Lecturers who Planned & conducted the activity	M.Satyavaralakshmi U.Satyanarayana Guestfaculty in Zoology
Signature of the in charge	Dr.K.Aruna lecturer in charge of micro biology
Signature of the Principal	
Remarks	-----

# BIODIVERSITY CONSERVATION

## 1. INTRODUCTION

### 1.1 Definition

Biodiversity refers to the comprehensive umbrella term for the degree of nature's variety or variation within the natural system; both in number and frequency. In general, it refers to the variety of all forms of life on earth. The different plants, animals, micro-organisms, the genes they contain and the ecosystem they form.

The manifestation of biodiversity is the biological resources (genes, species, organisms, ecosystems) and ecological processes of which they are part. Biodiversity is therefore considered at 3 major levels.

- Genetic diversity.
- Species diversity.
- Ecosystem diversity.

### Mutia 2 Biodiversity conservation

#### 1.1.1 Genetic diversity

This is the variety of genetic information contained in all of the individual plants, animals and microorganisms occurring within populations of species. Simply it is the variation of genes within species and populations.

#### 1.1.2 Species diversity

This is the variety of species or the living organisms.

*Species Richness* - This refers to the total count/number of species in a defined area. Various indices are used including the Mangaleit index and Menhink index.

*Species Abundance* - This refers to the relative numbers among species. If all the species have the same equal abundance, this means that the variation is high hence *high diversity*, however if the one species is represented by 96 individuals, whilst the rest are represented by 1 species each, this is *low diversity*.

*Taxonomic or phylogenetic diversity* - This considers the genetic relationships between the different groups of species. The measures are based on analysis, resulting into a hierarchical classification representing the phylogenetic evolution of the taxa concerned.

#### 1.1.3 Ecosystem diversity

This relates to the variety of habitats, biotic communities and ecological processes in the biosphere.

## 2. IMPORTANCE OF BIODIVERSITY

### 2.1 Ethical and moral values

Every form of life on earth is unique and warrants respect regardless of its worth to human beings; this is the ecosystems right of an organism. Note that every organism has an inherent right to exist regardless of whether it's valuable to human beings or not. Humankind is part of nature and the natural world has a value for human heritage. The well being of all future generations is a social responsibility of the present generations, hence the existence of an organism warrants conservation of the organism

### 2.2 Aesthetic value

Human beings derive great enjoyment from natural environment. The shapes, structure and colour stimulate our senses and enrich our culture. This is illustrated majorly in the popularity of biodiversity conservation measures and the myriad of the many organizations which fight for the protection of different organisms. A lot of money is paid to conserve wildlife for their value in nature through so many organizations. Wild species enhance our appreciation and enjoyment of the environment through:

- Leisure activities e.g. bird watching and nature trailing.
- Spotting activities e.g. spot hunting, spot fishing, diving and mushroom picking;
- Hearing, touching or just seeing wildlife;
- Enjoyment as seen in art and culture e.g. dolls and teddy bears.

### Biodiversity conservation 3 Mutia

#### 2.3 Utilitarian values

These contribute to our material well-being, besides our feelings and emotions, they are things that will give us satisfaction and include conservative and productive materials from biodiversity e.g. agricultural materials or food sources, medicine, industrial raw materials, educational values and scientific research.

#### 2.4 Ecological values

Biodiversity maintains the integrity of the environment through:

- Maintaining CO<sub>2</sub>: O<sub>2</sub> balance. It is through biodiversity that sequential balance of CO<sub>2</sub> and O<sub>2</sub> is maintained. The greenhouse effect is as a result of CO<sub>2</sub> accumulation in the atmosphere. ozone

This incorporates the preservation, maintenance, sustainable use (conservation), recovery and enhancement of the components of biological diversity, where:

- *Conservation* - is the sustainable use of resources and encompasses protection as well as exploitation and;
- *Preservation* - is an aspect of conservation meaning to keep something without altering or changing it.

#### *Biodiversity conservation 5 Mutia*

#### **4.1 Sustainable development**

This refers to development that meets the needs of the current generation without compromising the ability of future generations to meet their needs: it simply refers to intra and intergenerational equity. A balance between the environment, development and society results to sustainable development which ensures biodiversity conservation. This is only possible in the presence of good enforced and implemented policies/ conventions, environmental institutions (e.g. NEMA for Kenya) and political stability among others (Figure 1).

#### **4.2 Conservation measures of biodiversity**

Ex-situ conservation:

- Refers to conservation of components of biodiversity outside their natural habitats. e.g. zoos, museums, gene banks, botanic gardens/arboretums;
- Used for threatened and endangered species to avoid their extinction: also known as captive conservation.

In-situ conservation:

- Refers to conservation of ecosystems and natural habitats including maintenance and recovery of viable populations of species in their natural habitats.

#### **4.3 Convention on biological diversity (CBD)**

Conservation of biological diversity and sustainable use of its components came into the limelight in 1972 (United Nations Conference on Human Environment; Stockholm). In 1973, UNEP identified conservation of biodiversity as a priority area, hence there was need to get the legal mandate for conservation of world resources. There were negotiations for a legally binding instrument to address biological diversity and its loss to enhance fairness and equity in sharing of the benefits of biodiversity: this led to the opening of the Convention on Biological Diversity in 1992; Rio de Janeiro under the United Nations Conference on Environment and Development (UNCED) Earth Summit. The convention was inspired by the growing concern all over the world for sustainable development.

The convention objectives were:

- Conservation of the biological diversity;
- Sustainable use of its components;
- A fair and equitable sharing of its benefits.

This was the first global comprehensive agreement that addressed all the aspects of biological diversity: genetic resources, species diversity and ecosystem diversity.

#### **FIGURE 1: Concept of sustainable development**

#### *Mutia 6 Biodiversity conservation*

#### **4.4 Other international biodiversity conventions and conservation organizations**

- African Convention on Conservation of nature and natural resources.
- The Ramsar Convention on Wetlands of international importance.
- International Union for the Conservation of nature (World Conservation Union).
- Convention on International trade for endangered species (CITES).
- International Convention for the Protection on birds.
- International Board for Plant genetic resources .
- World Resources Institute.
- World Wide Fund for Nature.
- Convention on Conservation of migratory species of wild animals.
- International Convention for the Regulation of whaling .
- UNESCO programme on Man and biosphere .

#### **4.5 Existing Measures for Conserving Biodiversity in Kenya**

*Zoological gardens* - These are refuge areas for rare animals that could disappear without captive breeding e.g. zoos and aquariums. They are conservation areas for preservation of genetic stocks for

Guest Lecture

By Srinadh

Topic :- conservation of Biodiversity

