

**Course Code:MCC102A**  
**Course Title:Environmental Studies**

**Lecture No: 10**  
**Title: Biodiversity**  
**Course Leader : Ms. Priyanka N**



# Lecture-10

## Intended Learning Outcomes

**At the end of this lecture, students will be able to**

- Define habitats
- Explain Biodiversity and its components
- Discuss the economic importance of Biodiversity



# Biodiversity

What does “Bio” mean?

**Bio = LIFE**

What does “diversity” mean ?

**DIVERSITY= VARIETY**



# There are 3 components of biodiversity

## 1. Diversity of genes

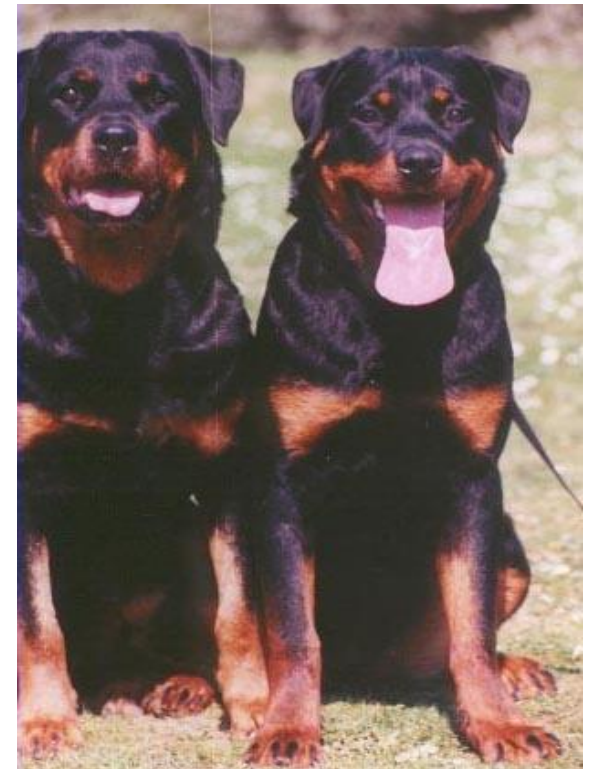
Chihuahuas, beagles, and rottweilers are all the same species —but they're not the same because there is variety in their genes.



Chihuahua



Beagle



Rottweilers

**Contd...**

**2. Diversity of number of species:** For example, monkeys, dragonflies, and meadow beauties are all different species.



Saki Monkey



Golden Skimmer



Meadow Beauty

### **3. Variety of ecosystems**

Lakes, Ponds, and Rivers are all Freshwater Ecosystems.

Rocky coast, Sand Dune, Estuary, Salt Marsh , Coral Reef are all Marine Ecosystems.





# Within an ecosystem there can be many HABITATS

- This is the **physical and chemical** description of where a creature lives...



# HABITATS might describe:

- The NAME of the place where the creature lives.



eg *Arctic Canada* is the habitat of the polar bear  
*Ursa maritima*.

# The Importance of Biodiversity

- There are direct and indirect economic, aesthetic, and scientific reasons for preserving biodiversity.

**Domestic corn plant  
periwinkle**



**Teosinte plant**



**Madagascar**

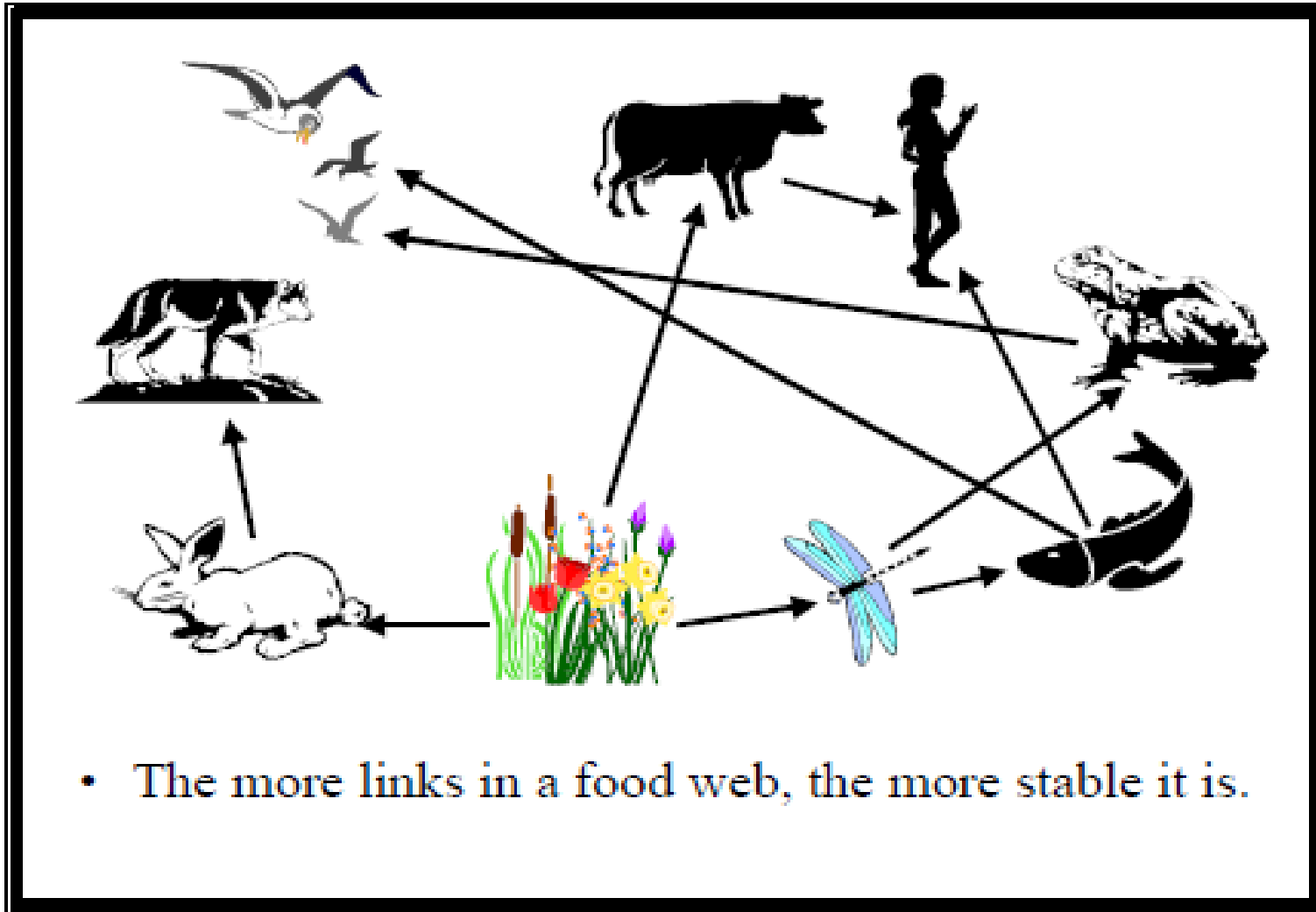




# Direct Economic Value

- Humans depend on plants and animals to provide food, clothing, energy, medicine, and shelter.
- Genetic diversity in species that might be needed in the future is important because...
  - Most of the world's food crops come from just a few species.
  - Wild species serve as reservoirs of desirable genetic traits that might be needed to improve domestic crop species (disease- and insect-resistance).
  - Many of the medicines that are used today are derived from plants or other organisms.
  - Scientists continue to find new extracts from plants and other organisms that help in the treatment of human diseases.
  - However, many species of organisms are yet to be identified, especially in remote regions of Earth, so their usefulness in providing extracts or useful genes is unknown.





# Indirect Economic Value

- A healthy biosphere provides many services to humans and other organisms that live on Earth.
- Green plants provide oxygen to the atmosphere and remove carbon dioxide.
- Natural processes provide drinking water that is safe for human use.
- Healthy ecosystems provide protection against floods and droughts, generate and preserve healthful fertile soils, detoxify and decompose wastes, and regulate local climates.



# Summary

- Bio means life and diversity means variety
- The three components of biodiversity are diversity of genes, diversity of number of species and variety of eco-system
- Within an ecosystem there can be many HABITATS
- There are direct and indirect economic, aesthetic, and scientific reasons for preserving biodiversity





# Summary

- Humans depend on plants and animals to provide food, clothing, energy, medicine, and shelter
- Healthy ecosystems provide protection against floods and droughts, generate and preserve healthful fertile soils, detoxify and decompose wastes, and regulate local climates

