

Biosphere

Biosphere

- Includes all life on Earth
- It extends from the seafloor up to the atmosphere

Studying the Biosphere

- There are two branches of science used to study the biosphere:
 - 1) **Ecology** - the study of how living things interact with each other and their environment
 - 2) **Environmental Science** - the study of how humans interact with and impact the environment

Environmental Science Importance

- Your actions produce changes in all of the parts of the Earth System
- There are two main types of interactions between humans and the environment:
 - 1. How we use natural resources
 - 2. How our actions change the environment
- Our Goal: To understand and solve environmental problems

- **STUDYING AND UNDERSTANDING THE ENVIRONMENT**

Biome

- Definition: A Biome is a major community where plants and animals adapt to their immediate surroundings.
- A **Biome** is also known as a **major life zone** that consists of several smaller life zones called **ecosystems**.

Importance of Biomes

- Ecological relationships within biomes are fragile and must be balanced in order to help maintain the environment and life on earth.

Importance of Biomes

- Biome Problems
- 1) **Human Activity**: Human behaviors such as deforestation and pollution can disturb the balance within an ecosystem and the organisms that live within it.
- 2) **Invasive Plant Species**: An increase in one species of plant can cause ripple effects throughout an entire biome
- 3) **Pollution** – undesired change in air, water, or soil that negatively affects the health, survival, or activities of humans or other organisms
- 4) **Loss of Biodiversity** – the loss and decrease in the diversity of ecosystems, natural communities and habitats.

Biome Classification

- Biomes are classified by the main vegetation, climate, and geography of a region – (Example: **Climate:** temperature & rainfall **Geography:** altitude & latitude **Flora and fauna:** vegetation and type of animals).

Biome Types:

- 1) Forest
- 2) Fresh Water
- 3) Marine
- 4) Desert
- 5) Grassland
- 6) Tundra

Next Biome Organization

Level	Organization of Life Zones
Biome (largest)	A group of ecosystems that have the same climate and dominant communities
Ecosystem	collection of all the organisms that live in a particular place, together with their nonliving, or physical, environment
Community	All the different populations that live together in a defined area
Population	A group of individuals that belong to the same species and live in the same area
Species (Smallest)	group of organisms so similar to one another that they can breed and produce fertile offspring

Ecosystem Influence

- Ecosystems are influenced by a combination of biological and physical factors.
- **Abiotic = nonliving** parts of an organism's environment.
- Examples include air currents, temperature, moisture, light, and soil.
 - Abiotic factors can affect an organism's life
- **Biotic factors= Living** : all the living organisms that inhabit an environment.
- Examples: birds, trees, mushrooms, and bacteria
- All organisms depend on others directly or indirectly for food, shelter, reproduction, or protection.