

# What Are Ecosystems and Biomes? Definitions and Examples

## Worksheet

An ecosystem is local (a forest pond, coral reef, grassland) and includes living organisms + non-living environment + their interactions. A biome is regional (tropical rainforest, tundra, desert) and includes many similar ecosystems across a continent.

## Questions

1. A deciduous forest in Ohio is an example of
  - A) a biome (temperate forest biome)
  - B) only an ecosystem
  - C) both a biome type and one ecosystem within it
  - D) a unique biome found nowhere else
2. Why do tropical rainforests have high biodiversity?
  - A) Cold temperatures encourage adaptation
  - B) Stable warm climate, high rainfall, complex layering, old evolution
  - C) Low rainfall and fast nutrient cycling
  - D) Simple food chains with few species
3. A tide pool on a rocky shore is best described as
  - A) a biome
  - B) an ecosystem (local community in its own environment)
  - C) part of the tundra biome
  - D) an organism
4. Which biome has permafrost and the lowest biodiversity?
  - A) Tropical rainforest
  - B) Temperate grassland
  - C) Tundra
  - D) Desert
5. A lake has cattails (plants), dragonflies, fish, bacteria. Is this an ecosystem or biome?
6. Name three different ecosystems within the tropical rainforest biome.
7. Why does the tundra biome have low biodiversity compared to a rainforest biome?
8. Define: What is an ecosystem?
9. Define: What is a biome?
10. Define: What are the main biomes on Earth?

## Answer Key

1. C) both a biome type and one ecosystem within it - The Ohio forest is one specific ecosystem; 'temperate deciduous forest' is the biome type that includes this and many similar forests across North America and Europe.
2. B) Stable warm climate, high rainfall, complex layering, old evolution - Rainforests have stable tropical climate, reliable water and sunlight, and millions of years for species to diversify into niches.
3. B) an ecosystem (local community in its own environment) - Tide pool = local ecosystem with specific organisms (sea stars, anemones, algae) in their own seawater environment.
4. C) Tundra - Tundra has permanently frozen ground (permafrost), extreme cold, short growing season and few species.
5. Ecosystem. It is a local community with specific organisms interacting with their water and sediment environment. The biome would be 'freshwater wetland biome' - a larger region including many similar lakes, marshes and swamps.
6. 1. Forest canopy ecosystem - sunlit treetops, birds, climbing insects 2. Forest understory - shaded layer with herbivorous mammals, fungi 3. Forest floor ecosystem - decomposers, leaf litter, nutrient recycling All are within the tropical rainforest biome.
7. Tundra: extreme cold, permafrost, short growing season, harsh conditions. Few species can survive; productivity low (food scarce). Rainforest: stable warm climate, long growing season, high productivity. Many species adapted to specific niches.
8. A local community of organisms (biotic) + physical environment (abiotic: soil, water, air) + interactions between them.
9. A large-scale region with characteristic climate, vegetation and wildlife; contains many ecosystems.
10. Tropical rainforest, tropical savanna, desert, temperate grassland, temperate forest, boreal forest, tundra, freshwater, marine.

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