

Biomes and the 6 levels of ecological organization.

FIRST - watch this video:

“Biological Levels in Biology: World Tour” by the Amoeba Sisters (*remember that Ecology focuses on these levels from Organism and up*)

<https://youtu.be/EtWknf1gzKo>

THEN - read to review:

The levels of Ecological Organization describe the arrangement of biological organisms in relation to one another. At the simplest level of the hierarchy are individual organisms. At the individual level, interactions with other organisms are not considered. Moving up the hierarchy, ecologists have found more complex ways to describe the relationships between organisms. These ultimately culminate in the biosphere, which describes the totality of all living things on planet Earth.

Individuals

The first level of the ecological hierarchy is the individual organism. This level of the hierarchy examines how one organism interacts with its environment. Aspects of evolution are used extensively in studying this level. For example, the individual-organism level allows a scientist to study why a giraffe has a very long neck. He can infer that evolution has given the giraffe the long neck so it can reach a food source high on a tree. Organismal ecology is concerned with the biological, morphological and physiological development of individual organisms in response to their natural environment.

Populations and Communities

The second level involves populations. A population contains a group of individuals -- belonging to one species and living in a specific geographic area -- which interact with one another. Population ecology studies the interactions among the individual members of a population. The third level of the ecological hierarchy describes communities of life. The community level focuses on the relationship between different species in a community. Predator and prey relationships play a large role in community-level analyses. Parasitism and competition between species are another important part of this ecological level.

Ecosystems

The next level up is an ecosystem. A community is part of an ecosystem, but does not comprise an entire ecosystem. Nonliving components in the environment are included in an ecosystem. The living organisms in an ecosystem interact with one another and with the nonliving factors in the environment. Examples of an ecosystem include a single lake, a confined forest, a prairie or a mountain summit.

Biome and Biosphere

Biomes are groups of ecosystems that have common characteristics for the environment they exist in, based on their geographic location (latitude), climate, and plant-life. Examples of biomes include deserts, rainforests, temperate forests, and tundra. Beyond this, at the widest level of organization, there is the biosphere which represents the totality of all things and habitable space on Earth, including all interactions. The biosphere includes all ecosystems on Earth and how they interact together. By default, the biosphere includes climate, geology, the oceans and human pollution.

Fill in the graphic organizer below.

Level of Ecological Organization <i>(Smallest to Largest)</i>	Definition	Example
1. Organism		
2. Population		
3. Community		
4. Ecosystem		
5. Biome		
6. Biosphere		

Label the following examples with the appropriate level of ecological organization from the table above.

1. All of the cotton tailed rabbits living in Virginia:

2. The frogs, minnows, cattail plants, and algae in a pond:

3. The frogs, minnows, cattail plants, and algae along with the sand and water in a pond:

4. One white tailed deer:

5. A temperate deciduous forest:

6. The soil, rocks, grasses, invertebrates, fungi, and bacteria in a section of forest floor:

7. All of the wolves and all of the moose that live on an island:

8. All of the oak trees in your backyard:

9. All of the ecosystems and habitable areas of Earth combined:

10. One mushroom:
