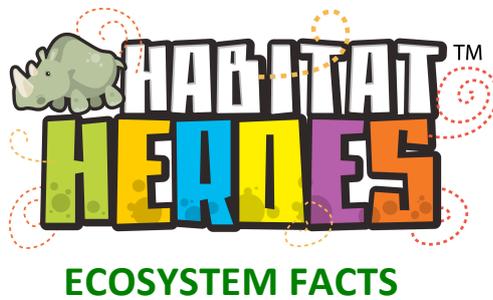




ECOSYSTEM FACTS

Ecosystems are communities of living and nonliving things (plants, animals, one-celled organisms, mineral resources, water, etc.) that interact with each other and share space. Ecology is the study of these interactions within and between various ecosystems.

- **Ecosystems vary in size. They can be as small as a puddle or as large as the Earth itself. Any group of living and nonliving things interacting with each other can be considered as an ecosystem.**
- **Within each ecosystem, there are habitats which may also vary in size. A habitat is the place where a population lives. A population is a group of living organisms of the same kind living in the same place at the same time. All of the populations interact and form a community. The community of living things interacts with the non-living world around it to form the ecosystem. The habitat must supply the needs of organisms, such as food, water, temperature, oxygen, and minerals. If the population's needs are not met, it will move to a better habitat. Two different populations cannot occupy the same niche at the same time, however. So the processes of competition, predation, cooperation, and symbiosis occur.**
- **Habitats, then, are specific to a population. Each population has its own habitat. For example, a population of ants has its own habitat.**
- **Several populations may share a habitat. For example, in a small pond several aquatic populations may co-exist in the same water at the same time. An aquarium is a good example of a shared habitat.**
- **A terrarium is another place where several populations will peacefully co-exist in the same habitat. Vivaria are habitats where several plant and animal populations live together. Within any shared habitat, behavior influences the survival of a species. Behavior can be instinctual or learned.**
- **Biomes are ecosystems where several habitats intersect. The Earth itself is one large biome. Smaller biomes include desert, tundra, grasslands, and rainforest. Biomes occur naturally, but people can**



also create controlled biomes. For example, you can integrate several small populations in a small space and observe what happens. A famous manmade biome is Biosphere.

- Habitats must also supply water for all living things to survive. Their needs are met through the water cycle.
- Since energy and water are vital to the survival of an ecosystem, a system of conservation is needed. In many ecosystems, the conservation of resources is a natural, almost unnoticeable process. Life substances, for example, are recycled in the ecosystem. The exchange of carbon dioxide (given off by animals) and oxygen (given off by plants) is actually a process of conservation. The waste of one species becomes food for another. When resources become limited, the conservation process becomes more urgent and more visible with an increased need for recycling.
- If conservation efforts fail, species become endangered and extinction can occur. A species becomes endangered when there is not enough habitat available to support all members of the population. When the habitat vanishes, and all members of the population die, then the species is considered extinct.