Nature of the Environment

"extraordinarily complex, extremely diverse, infinitely renewing, and yet ultimately fragile."

Tom L. McKnight[2]

Key Concepts of the Environment

Environment means the surroundings; from the French word "environs," meaning around. The totality of all external things and conditions that may in any way affect an organism or an object.

The **global environment** is an all-inclusive, interacting, and interdependent system. It has structure and organization, and all of its components are connected. A change in one part of the system has the potential for causing change somewhere else in the system. No event takes place in complete isolation. Humans have an integral role in the global environment. They have a very powerful impact on that environment.

The global environment has four components: the lithosphere, the hydrosphere, the atmosphere, and the biosphere.

Lithosphere the soils and rocks of the Earth's crust and uppermost mantle

Hydrosphere all the water in the world, in every form – liquid, solid, and gaseous

Atmosphere the region of gases extending above the Earth's surface

Biosphere that part of the planet in which all life is found – most of the hydrosphere, the lowest part of the atmosphere, and the outermost parts of the lithosphere. The biosphere is the planetary ecosystem that includes all individual ecosystems, large and small.

The interactions of the four "spheres" are dynamic and constant.

An **ecosystem** is a biological community (i.e., plants and animals) or "system" formed by the interaction of living things in a particular environment with one another and with their habitat.

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[2] Tom L. McKnight. *Physical Geography*. 2nd edition. Englewood, N.J.; Prentice-Hall. 1987.

Key Concepts of Ecosystems

An **ecosystem** is a biological community (i.e., plants and animals) or "system," formed by the interaction of living things in a particular environment with one another and with their habitat.

Structure of an Ecosystem

An ecosystem is made up of abiotic (non-living) and biotic (living) components.

Abiotic components include

- an energy source, usually the sun
- the climatic conditions at the physical location
- the chemicals in the soil, air, and water that are essential nutrients for life.

Biotic components include

- *producers*: green plants and bacteria that produce organic food substances
- *consumers*: herbivores – animals that feed directly on the green plants; and carnivores – animals that feed indirectly on the plants by eating the herbivores
- *decomposers*: some types of bacteria and fungi that break down the tissue from dead plants and animals into nutrients for other living organisms.

An ecosystem can be smaller than a drop of water or bigger than a city; the biosphere is the planetary ecosystem.