Why Biodiversity Is Important

Author: National Park Service

Source: National Park Service

"If we were to wipe out insects alone on this planet, the rest of life and humanity with it would mostly disappear from the land. Within a few months." —E. O Wilson

In his famous work, *War of the Worlds*, H. G. Wells describes how the Earth is invaded and occupied by Martians. The aliens triumph over all military and man-made devices, only to be defeated in the end by one of the "humblest things. . . upon this earth"—a microbial infection native to our planet for which the aliens have no immunity.

Humankind, like all species, is tied to the life, large and small, of this planet. Our health, our economics, and our lives depend upon its biodiversity.

Services Provided by Biodiversity

Biodiversity provides us with drinking water, oxygen to breathe, food, medicine, decomposition of waste, and helps our planet withstand natural disasters.

Food

- Much of our food exists because of the ecological services of pollinators.
- Fish provide billions of people with essential animal protein.
- A variety of different animal types are used in agriculture and food production.
- Thousands of species of plants have been cultivated for consumption throughout human history
- Meat from native wildlife contributes to food and livelihoods in many countries.

Medicine

- Many medicines are derived or modelled upon compounds provided by the natural world.
- Aspirin was originally made from willow tree bark.
- The rosy periwinkle, a flower that grows in Madagascar, provided a treatment for Hodgkin's disease, while a chemical from the saliva of leeches dissolves blood clots during surgery.
- Penicillin and tetracycline, as well as other antibiotics, are derived from microorganisms.

Drinking Water

- Biodiversity sustains the water cycle (water moving over or under the ground, evaporating and transpiring into the atmosphere, then falling back to Earth as rain or snow) and is sustained by biodiversity.

- Transpiration (the movement of water through vegetation and soil) provides 62 percent of annual renewable fresh water on our planet.
- Groundwater (water that seeps underground) is the major source of drinking water for many people.
- Biodiversity cleanses and purify water. Wetland plants, for instance, help remove heavy metals and excessive levels of nutrients.
- Vegetation can affect local rainfall patterns. Large-scale removal of plants changes these patterns.

Oxygen

- Through photosynthesis, plants use carbon dioxide, sunlight and water to create energy and release oxygen. In turn plants and animals breathe in oxygen and exhale carbon dioxide.
- One of the biggest sources of oxygen is phytoplankton living near the ocean's surface.
- Trees and other plants absorb ground level ozone, carbon monoxide, sulfur dioxide, and other greenhouse gases.

Decomposition

- Bacteria, fungi, worms, flying insects, beetles, and other living creatures are decomposers.
- Decomposers recycle carbon, nitrogen, and phosphorous - providing essential nutrients for new plants to grow. Without their work, it is possible that the Earth would be unable to support life.

Healing and Recovery from Natural Disasters

- A wide variety of species in an ecosystem provides an ecosystem with greater resistance to disease and pest outbreaks.
- Plants help protect soil from erosion.
- Bacteria, insects, plants and other living creatures release nutrients and help keep soils fertile.
- An ecosystem with rich biodiversity is more resilient and able to withstand the extinction of an individual species.