**BIODIVERSITY**

Biodiversity or biological diversity is the sum of all the different species of animals, plants, fungi and microbial organisms living on Earth and the variety of habitats in which they live. Scientists estimate that upwards of 10 million –and some suggest more than 100 million – different species inhabit the Earth. Everywhere there is more than one distinct type of organisms. Even a drop of seawater offers a multitude of different microscopic plants, animals, and less complex life forms.

An ecosystem consists of organisms from many different species living together and connected by the flow of energy, nutrients and matter that occur as they interact with one another. The ultimate source of energy in nearly all ecosystems is the Sun. Its energy is converted to chemical energy by plants and it flows through the systems when animals eat plants and then are eaten by other animals. Fungi derive energy by decomposing organisms, releasing nutrients back into the soil. An ecosystem, then, is a collection of living components and nonliving components that are connected by energy flow. Removing just one species from an ecosystem damages the flow of energy.

Much of the Earth’s greatest biodiversity is rapidly disappearing. The Earth is losing approximately 27,000 species per year. Mass extinctions of the geological past were caused by catastrophic physical disasters, such as climate changes or meteorite impacts. In the last mass extinction, more than 65 million years ago, the Earth was shrouded in a cloud of atmospheric dust – due to a meteorite impact or volcanic activity. The result was the demise of 76 % of all species alive at the time, including dinosaurs. Today’s extinction is primarily caused by ecosystem disturbance – but this time the destroying force is not the physical environment, but rather mankind.

The main cause of biodiversity loss is the explosion in human population. The human population consumes nearly half of all the food, crops, medicines, and other useful items produced by the Earth’s organisms. But the greatest threat to global biodiversity is the human destruction of natural habitats. Since the invention of agriculture about 10,000 years ago, humans have radically transformed the face of the planet. The conversion of forests, grasslands, and wetlands for agricultural purposes, coupled with the multiplication and growth of urban centers and the building of dams and canals, highways and railways have physically altered ecosystems. In addition, overexploitation of the world’s natural resources, such as fisheries and forests, has greatly outstripped the rate at which these systems can recover.

Several nations have enacted laws protecting endangered wildlife. However, in the last three decades, focus has shifted away from the preservation of individual species into the protection of large tracts of habitats. Preserving biodiversity also takes place at the molecular level in the conservation of genetic diversity. All around the world efforts are being made to collect and preserve endangered organisms’ DNA.

“Biodiversity” – Microsoft Encarta Online Encyclopedia 2004