HUMAN ACTIVITIES ON THE ECOSYSTEM

Human impact on the environment or anthropogenic impact on the environment includes changes to biophysical environments and ecosystems, biodiversity, and natural resources caused directly or indirectly by humans, including global warming, environmental degradation (such as ocean acidification), mass extinction and biodiversity loss, ecological crisis, and ecological collapse. Modifying the environment to fit the needs of society is causing severe effects, which become worse as the problem of human overpopulation continues. Some human activities that cause damage (either directly or indirectly) to the environment on a global scale include human reproduction, overconsumption, overexploitation, pollution, and deforestation, to name but a few. Some of the problems, including global warming and biodiversity loss pose an existential risk to the human race, and human overpopulation causes those problems.

The term anthropogenic designates an effect or object resulting from human activity. The term was first used in the technical sense by Russian geologist Alexey Pavlov, and it was first used in English by British ecologist Arthur Tansley in reference to human influences on climax plant communities. The atmospheric scientist Paul Crutzen introduced the term "Anthropocene" in the mid-1970s. The term is sometimes used in the context of pollution emissions that are produced from human activity since the start of the Agricultural Revolution but also applies broadly to all major human impacts on the environment. Many of the actions taken by humans that contribute to a heated environment stem from the burning of fossil fuel from a variety of sources, such as: electricity, cars, planes, space heating, manufacturing, or the destruction of forests. Humans interact with the world around us every day, but some of our actions are more harmful than others. As our population approaches 7 billion people, the effects of human activities on the ecosystem, including the water, air, land and the life that we share the world with, are almost immeasurable. Humans pollute the land, water and air with unwanted refuse. Almost 2.4 billion people don’t have access to clean water. The U.S. alone produces 147 metric tons of air pollution. In some countries, the smog caused by air pollution is deadly and can block out the sun in a dense haze. It is rare to find a beach in the world that doesn’t have litter. Humans produce about 300 million tons of plastic each year. More than 8 million tons of that plastic are dumped into the oceans, and in 2017, an estimated 5 trillion pieces of plastic littered the seas. The plastic in the oceans has devastating effects on wildlife. In 2017, for example, a beached whale discovered off the coast of Scotland died because of the amount of plastic it had consumed – about nine pounds of plastic bags were found coiled in its digestive tract.

Global Warming

Environmental scientists have been warning us for decades that the CO₂ emissions that come from burning fossil fuels are affecting the planet’s ecosystem. The increase of CO₂ in the atmosphere traps heat that would otherwise escape into space, increasing the Earth’s overall temperature. This has caused Arctic ice and glaciers to melt and raise ocean levels. The loss of reflective ice and increase in water, which absorbs heat, adds to the rising temperatures in a cycle that is predicted to cause ocean levels to rise 1 to 4 feet by 2100. The use of genetic modified organisms, or GMOs, has played an important role in increasing crop yields so we can feed our populations. In addition to providing better crop yields, modified plants are better able to resist disease and parasites, tolerate more extreme temperatures, or thrive with less water. However, modifying plants has not always been intentional. For example, continued use of herbicides, like glyphosate, has caused many weeds to become immune to their effects. In fact, 249 species of weeds are now immune to all normally used herbicides. The only way to get rid of them is to till the soil, which exposes the soil to sunlight and kills the organisms that help make the land fertile.

Deforestation

For every corn field you see, chances are good there was once a forest in its place. As our population continues to increase, humans create more and larger farms, which means removing the dwindling number of forests. Forests are also cleared for the lumber that we use to build our houses and to make room for new houses. About 18 million acres of trees are clear-cut every year for wood. This has devastating effects for the wildlife that once called those forests home.

Positive Effects of Human Activities

Not all the ways that humans affect the ecosystem are negative. Every time you recycle used paper, plastic or metal, or pick up a piece of trash from the sidewalk, you have a positive impact on the environment. Others are committing their time and energy to large projects to positively change the ecosystem. In 2011, for example, a 16-year old inventor named Boyan Slat, created a device that can sweep the plastic from the ocean. He later founded The Ocean Cleanup project to begin putting that technology to use. It could clean up half the plastic currently in the Great Pacific Garbage Patch in five years.