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The Effects of Depletion of the Ozone Layer on Humans

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Editorial

A variety of human actions have a negative influence on the environment. One of them is ozone depletion. The troposphere and stratosphere are two separate levels of our atmosphere. The troposphere is located directly above the stratosphere. The ozone layer is located between 25 and 28 kilometres above the Earth's surface and contains 90% of the ozone present in the atmosphere. The tropospheric ozone is made up of the remaining 10% of ozone. It's really near to the earth. The ozone layer was discovered in 1913 by French physicists Charles Fabry and Henri Buisson. G.M.B Dobson, a British meteorologist, described its features. He also devised a simple spectrophotometer (Dobson metre) for measuring stratospheric ozone from the ground. The measurement of ozone concentration in the atmosphere is done using "Dobson units" (Du). The ozone layer is a naturally occurring gas that forms in the stratosphere when ozone particles collect. Although the ozone layer is naturally depleted, there is a delicate balance between its creation and its depletion. As a result, the overall quantity of ozone in the atmosphere remains stable. However, the thickness of the ozone layer varies with height and season. The concentration of ozone is maximum between 19 to 23 kilometres. The majority of ozone is created around the equator, where there is the most sunlight, but winds carry it to high altitudes, where it accumulates in the stratosphere.

In areas where the ozone layer has been reduced, an ozone hole forms. When the depletion level falls below 200 Dobson Units, the phrase "ozone hole" is used (D.U). In 1970, ozone holes were detected in Antarctica. Ozone holes were identified in the arctic area a few years ago. Since 2000, the annual rate of ozone depletion has increased by 0.5 percent. UV rays are reaching the troposphere due to ozone depletion, creating greater ozone creation in the troposphere, which is harmful to human health because ozone is poisonous to our bodies. Ultraviolet radiation has an impact on both people and wildlife. UV-B overexposure hinders the development of practically all green plants. It is feared that ozone depletion would result in the extinction of plant species and a reduction in the world food supply. Because all life is interrelated, any alteration in the equilibrium of plant species can have catastrophic consequences. Plants are the foundation of the food web, they prevent soil erosion and water loss and they are the principal providers of oxygen and carbon dioxide sinks.

Produced chemicals, particularly manufactured halocarbon refrigerants, solvents, propellants and foam-blowing agents (chlorofluorocarbons (CFCs), HCFCs, halons), are the primary cause of ozone depletion and the ozone hole. Scientists have seen a decrease in stratospheric ozone since the early 1970s, with the effect being particularly pronounced in the Polar Regions. ODS compounds have a 100-year life expectancy. In domestic animals, UV-B induces cancers that are identical to those seen in humans. Although most animals have stronger UV-B protection due to their thick coats and pigmented skin, UV-B cannot be artificially prevented on a broad scale. The most vulnerable portions of the body are the eyes and exposed regions of the body. The quantity of UVB that reaches the Earth's surface rises as the ozone layer depletes. UVB induces non-melanoma skin cancer and has a key role in the development of malignant melanoma, according to laboratory and epidemiological research. UVB has also been related to the formation of cataracts, a clouding of the lens of the eye.

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