TODAY & TOMORROW

The Ozone Layer Today

The Montreal Protocol is widely lauded as a huge environmental success. Whilst the damage we have done to the ozone layer has not yet been undone, thanks to this agreement and the collaborative effort of nations around the world, there is scientific evidence that the ozone layer is healing itself and is expected to recover by the middle of this century.

The Future is in our Hand

We've made a lot of progress, but we need to continue to work together to protect the ozone layer for the future. While scientists and researchers find new solutions and create earth-friendly products, there are things we can all do, like buying products that are labelled "ozone friendly".

World Ozone Layer Timeline:

Ozone Layer is Discovered (1913)

French physicists Charles Fabry and Henri Buisson discover the ozone layer while measuring radiation from the Sun's surface to the ground of Earth.

Ozone Layer is in Danger (1976)

During atmospheric research, scientists find that the ozone layer is depleting due to human activity.

Ozone for Life (1985-1987)

Global efforts are made for the preservation of the ozone layer and the Vienna Convention and Montreal Protocol on Substances that Deplete the Ozone Layer are born.

World Ozone Day (1994)

The UN General Assembly designates September 16 to be the International Day for the Preservation of the Ozone Layer.

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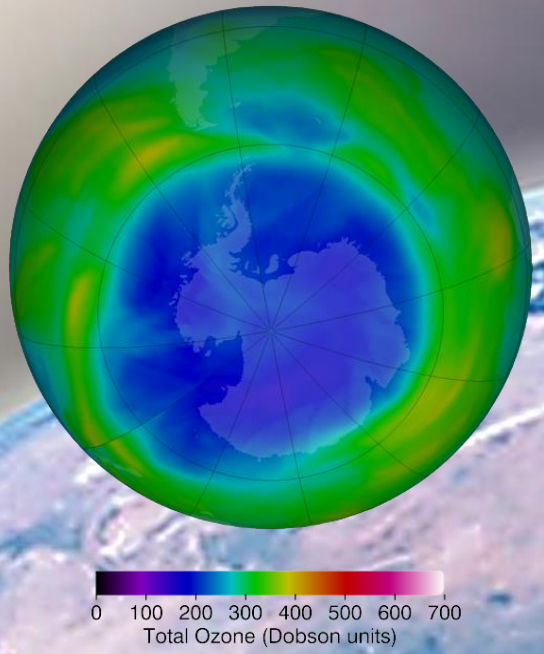
WORLD OZONE DAY



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(Ministry of Environment, Forest & Climate Change, Govt. of India)

Ozone Layer depletion, like climate change, is a global issue with regional impacts. The depletion of the ozone layer is mainly caused by emissions of human produced ozone depleting substances.

- **WHAT IS OZONE LAYER?**

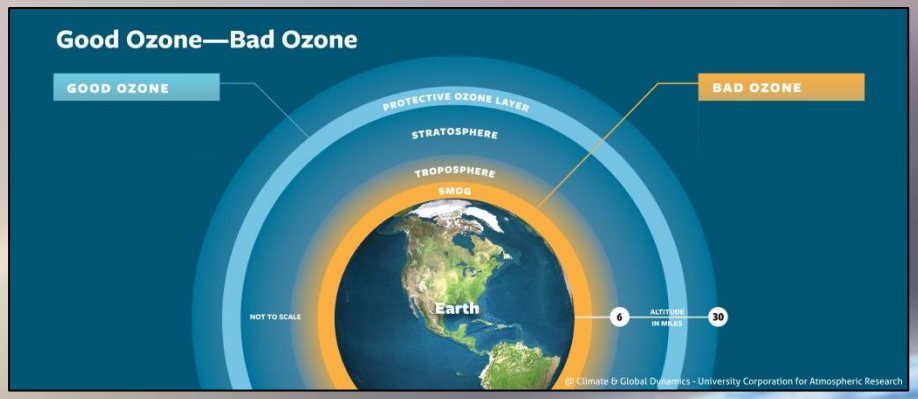
The ozone layer is found in the lower portion of the earth's atmosphere. It has the potential to absorb around 97-99% of the harmful ultraviolet radiations coming from the sun that can damage life on earth. If the ozone layer was absent, millions of people would develop skin diseases and may have weakened immune systems.

- **MONTREAL PROTOCOL**

The Montreal Protocol on Substances that Deplete the Ozone Layer is the landmark multilateral environmental agreement that regulates the production and consumption of nearly 100 chemicals referred to as ozone depleting substances. Since the ban on halocarbons, the ozone layer has slowly been recovering and the data clearly show a trend in decreasing area of the ozone hole – subject to annual variations.

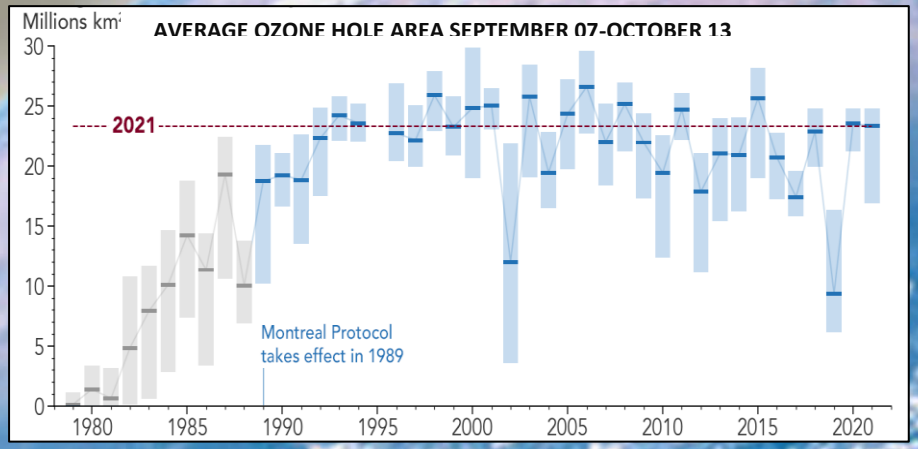
- **TROPOSPHERIC BAD OZONE**

Although ozone high up in the stratosphere provides a shield to protect life on Earth, direct contact with ozone is harmful to both plants and animals, humans. Ground-level, "bad" ozone forms when nitrogen oxide gases from vehicle and industrial emissions react with volatile organic compounds. In the troposphere near the Earth's surface, the natural concentration of ozone is about 10 parts per billion (0.0001%). According to the Environmental Protection Agency, exposure to ozone levels of greater than 70 parts per billion for 8 hours or longer is unhealthy.



PROGRESS OF THE OZONE HOLE AREA (1979 – 2021)

The 2021 Antarctic ozone hole is substantially smaller than those in the late 1990s and early 2000s. The chart below shows the average size of the ozone hole (solid blue and gray lines), as well as the range of its size (light blue and gray shaded bar) for each year since 1979.



Sources: - www.earthobservatory.nasa.gov/images/149010/substantial-antarctic-ozone-hole-in-2021
-https://www.unep.org/ozonaction/who-we-are/about-montreal-protocol
-https://ozonewatch.gsfc.nasa.gov/education/index.html