

International Day for the Preservation of the Ozone Layer

16TH SEPT
2023

History

A resolution was adopted in the Vienna Convention for the protection of the Ozone Layer on 22nd March 1985. The need was felt after the hole in the ozone layer was discovered over Antarctica. Following the adoption of the resolution, The Montreal Protocol on Substances that Deplete the Ozone Layer was drafted on 16th September 1987.

In 1994, the United Nations General Assembly Announced the celebration of International Day for the Preservation of the Ozone Layer to commemorate the signing of the Montreal Protocol on Substances that Deplete the Ozone Layer on 16th September.

Theme: “*Montreal Protocol: Fixing the ozone layer and reducing climate change*”

- World Ozone Day 2023, celebrates the achievements of the Montreal Protocol on Substances that Deplete the Ozone Layer in fixing the ozone layer and reducing climate change.
- The Scientific Assessment Panel to the Montreal Protocol confirmed that ozone layer recovery is on track and ozone levels are expected to return to 1980 levels by around 2066 over Antarctica.
- By banning ozone-depleting and allowing the ozone layer to slowly recover, the treaty is also protecting millions of people from skin cancer, and eye cataracts, safeguarding ecosystems and slowing down climate change.

- **The Kigali Amendment to the Montreal Protocol aims to phase down the production and consumption of hydrofluorocarbons (HFCs)-powerful climate-warming gases that replaced ozone-depleting substances in the cooling industry.**
- **For nearly four decades, the Montreal Protocol has been instrumental in protecting human health, nature, and the climate.**

Facts about Ozone

- ◆ **Christian Friedrich Schonbein, a German-Swiss chemist, discovered ozone in 1839.**
- ◆ **The ozone layer was discovered in 1913 by French physicists Charles Fabry and Henri Buisson.**
- ◆ **In 1985, Joe Farman, Brian Gardiner, and Jonathan Shanklin discovered a hole in the ozone layer over Antarctica.**
- ◆ **The ozone layer is able to absorb as much as 98% of the sun's harmful UV rays.**
- ◆ **Chemicals called chlorofluorocarbons were the reason behind the damage to the ozone layer.**
- ◆ **According to the latest research, the Antarctica ozone hole is showing signs of shrinking.**
- ◆ **The Montreal Protocol to ban ozone-depleting chemicals such as CFCs was signed in 1989.**
- ◆ **The standardized way to express total ozone levels in the atmosphere is through Dobson units.**
- ◆ **Ozone has shown damaging effects on the respiratory, cardiovascular, and central nervous system.**

Damage to the Ozone and Montreal Protocol

- **Damage to the ozone:** A large number of chemicals called halons, halocarbons, chlorofluorocarbons (CFCs), and hydrochlorofluorocarbons (HCFCs) introduced in the atmosphere are the major cause of ozone depletion.
- **Montreal Protocol:** To protect the valuable ozone layer, the Montreal Protocol was introduced with the aim to control the production and consumption of substances that harm the ozone and the ultimate goal to completely eliminate their production. The protocol is designed around different groups of ozone-depleting substances. The Protocol requires the control of nearly 100 chemicals, in several categories.

Implementation of the Montreal Protocol

- Implementation of the Montreal Protocol progressed well in developed and developing countries.
- Attention focused initially on chemicals with higher ozone-depletion potentials including CFCs and halons.
- The phase-out schedule for HCFCs was more relaxed due to their lower ozone-depletion potentials and because they have also been used as transitional substitutes for CFCs.
- The HCFC phase-out schedule was introduced in 1992 for developed and developing countries, the latter with a freeze in 2015, and the final phase-out by 2030 in developed countries and 2040 in developing countries.

Universal ratification

On 16 September 2009, the Vienna Convention and the Montreal Protocol became the first treaties in the history of the United Nations to achieve universal ratification.

Benefits of the Ozone Layer

Ozone and Climate

According to the Ozone Secretariat of the United Nations Environment Programme (UNEP), for the last two decades, some signs of recovery of the ozone layer have been observed. For example, in the mid-latitudes, upper stratospheric ozone has increased by 1-3 percent per decade since 2000. Without the Montreal Protocol, the Antarctica ozone hole would have been about 40 percent larger by 2013.

Ozone and Health

NASA model simulations have shown that without the Montreal Protocol, the global zone would have fallen so low by 2065 that light-skinned people in northern mid-latitude locations would have perceptible sunburn in about 5-10 minutes during summer outdoors. With the Montreal Protocol, up to 2 million cases of skin cancer may be prevented globally each year by 2030.



Montreal Protocol is expected to prevent approximately 443 million cases of skin cancer, 2.3 million skin cancer deaths, and 63 million cases of cataracts for people born in the year 1890-2100.



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