

# ANTARCTIC OZONE HOLE CLOSES EARLY IN 2025



## IN NEWS

The **Antarctic ozone hole** that formed in August 2025 closed earlier than usual, offering hope for recovery amid record global warming.

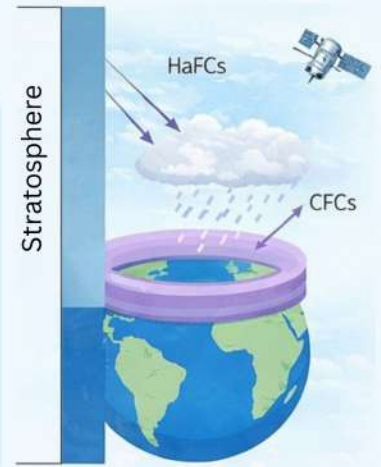
### Basics - Ozone Layer (O3)

It is a highly reactive molecule containing three oxygen atoms.

**Found in** - It is present between 10 and 50 km above the earth's surface, called the stratosphere.

**Function** - This ozone layer serves as a **natural filter for blocking deadly incoming UV radiation from the sun.**

**Significance** - This **ozone shield is necessary for the survival of human life on the earth.**



### OZONE LAYER DEPLETION

**Definition** - The decrease in ozone concentration in the middle layers of the atmosphere – mainly in the stratosphere is referred to as the depletion of the ozone layer.

**Caused by** - It is caused by emissions of anthropogenic halogenated hydrocarbons such as **CFCs, HCFCs, Halons, Carbon tetrachloride and Methyl bromide.**



### Why is ozone depletion more in Antarctica than the equator?

The severe depletion of the Antarctic ozone layer known as the “ozone hole” occurs **because of the special weather conditions that exist there and nowhere else on the globe.**

The very low temperatures of the Antarctic stratosphere create ice clouds called **polar stratospheric clouds (PSCs).**



### Measures to Prevent Ozone Layer Depletion

#### Vienna Convention

**Objective** - To protect human health and the environment from any harmful effects of the depletion of the ozone layer.

**Held in** - Vienna , Austria

**Adopted in** - 1985.

**Came into force** - 1988.



#### Montreal Protocol

**Objective** - To protect the Ozone layer by reducing the production of substances that are supposed to be responsible for Ozone layer depletion

**Kigali Agreement**-The protocol was further strengthened with the ratification of the legally binding Kigali Agreement in 2016 in Kigali, Rwanda.

**Significance** - It seeks to phase out the production of hydrofluorocarbons (HFCs) that are potent greenhouse gases by the late 2040s.

