Antarctic Ozone Hole 2026

Prelims: *Current events of national and international importance| Environment*

Why in News?

CAMS reported that the 2026 Antarctic ozone hole expanded to around 25 million km² in early September—about 5 million km² above the seasonal average.

Ozone Hole

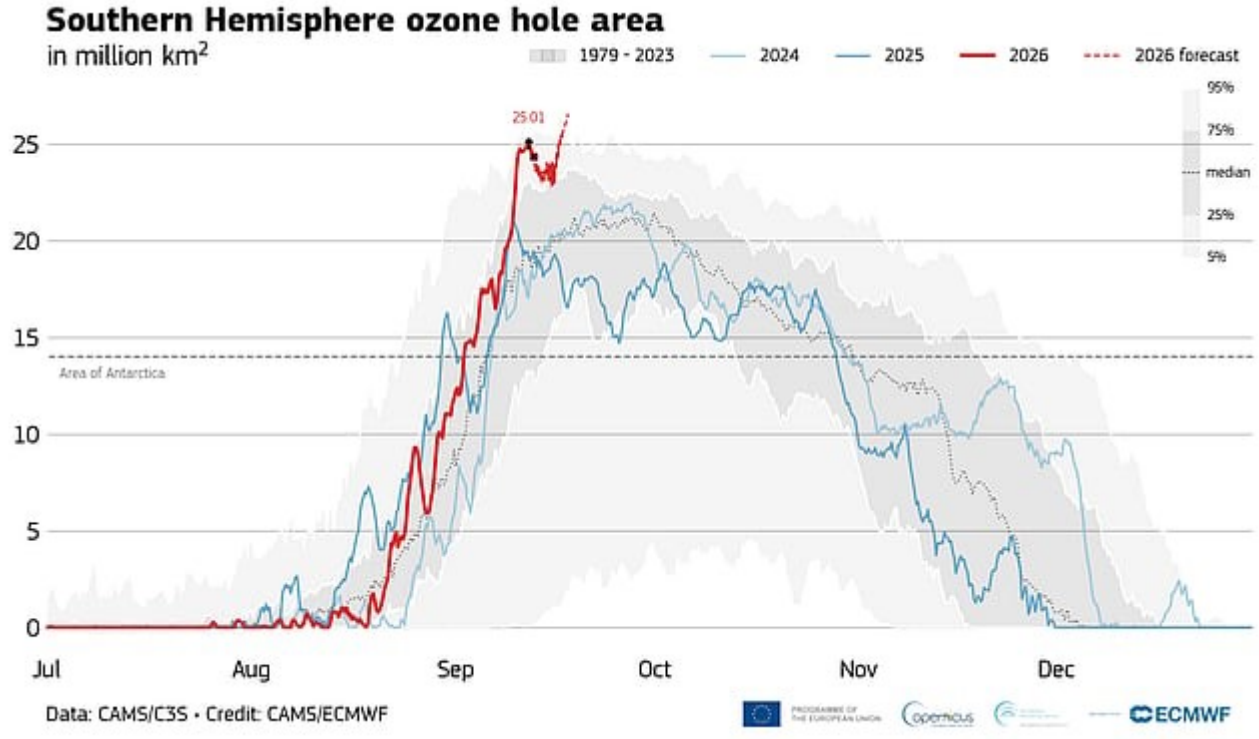
- **Ozone layer** – Stratospheric layer that absorbs harmful ultraviolet (UV) radiation.
- **Ozone hole** – Region where ozone concentration falls below 220 Dobson Units (DU).
- It is not an actual physical hole, but an area of severe ozone depletion.
- **Ozone depletion occurs in both hemispheres**, but a *severe seasonal ozone hole occurs regularly over Antarctica.*

Why Antarctica?

- Antarctica develops a strong and stable polar vortex.
- Extremely low stratospheric temperatures favour the formation of Polar Stratospheric Clouds (PSCs).
- PSCs activate chlorine and bromine from human-made chemicals such as CFCs.
- When sunlight returns during the austral spring (August–November), these halogens rapidly destroy ozone.

2026 Ozone Hole – Important Observation

- Rapid growth coincided with a sharp fall in stratospheric temperature around 20 km altitude (50 hPa).
- However, other indicators such as minimum ozone column value and ozone mass deficit remained close to historical averages.
- This indicates the complex nature of annual ozone-hole dynamics.



Ozone Thinning	Ozone Hole
General reduction in stratospheric ozone	Severe, localized ozone depletion
Occurs over broader regions	Mainly observed over Antarctica
Gradual weakening	Extreme seasonal depletion
No fixed 220 DU threshold	Defined using <220 DU

Role of Climate Change

- Global warming can cool the stratosphere, creating conditions favourable for PSC formation.
- However, ozone depletion and climate change involve complex atmospheric interactions and should not be treated as identical processes.

About CAMS

- CAMS: Copernicus Atmosphere Monitoring Service.
- **Implemented by** – European Centre for Medium-Range Weather Forecasts (ECMWF).
- **Provides** – information on atmospheric composition, air pollution, greenhouse gases, solar energy and climate forcing.
- It is one of the six services of the Copernicus Earth Observation Programme.
- Copernicus is coordinated by the European Commission and European Space Agency (ESA), along with EU Member States and agencies.

Reference

Down To Earth| 2026 Antarctic ozone hole

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