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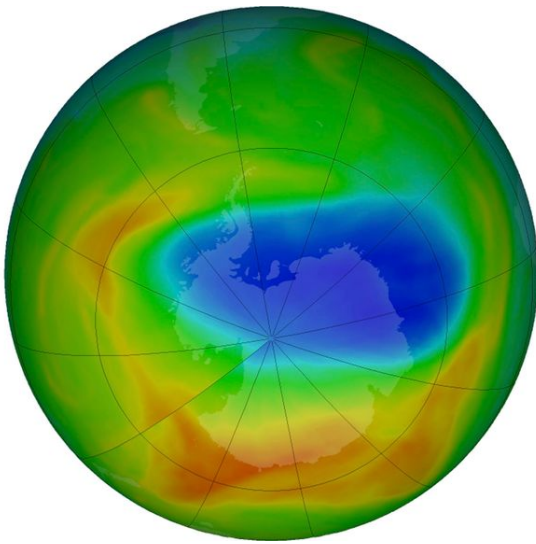
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ENVIRONMENT

Ozone Hole Above Antarctica Shrinks to Smallest Size on Record

Abnormal weather and wind patterns contribute to 'rare event'



A map of the hole in the ozone layer over Antarctica from Oct. 20, provided by NASA. PHOTO: /ASSOCIATED PRESS

By Talal Ansari

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A hole in the ozone layer located near the Earth's South Pole is the smallest it has been since first being discovered in the 1980s, NASA said.

While depletion of the ozone has decreased over the years, the hole's smaller size this year is related to abnormal weather and wind patterns.

"It's great news for ozone in the Southern Hemisphere," said Paul Newman, chief scientist for Earth Sciences at NASA, in a report on the ozone released this week. "But it's important to recognize that what we're seeing this year is due to warmer stratospheric temperatures. It's not a sign that atmospheric ozone is suddenly on a fast track to recovery."

Located between seven to 25 miles above Earth's surface, in a part of the atmosphere called the stratosphere, the ozone layer shields the planet from ultraviolet radiation that can cause skin cancer, cataracts and other hazardous conditions.

During normal weather patterns, the hole in the ozone above Antarctica grows to a maximum area of about 8 million square miles in late September or early October, according to NASA. This year, it reached a maximum of 6.3 million square miles on Sept. 6, but then fell to fewer than 3.9 million square miles later that month, where it has stayed.

This is the third time in the past 40 years that weather systems have caused conditions that limited ozone depletion, according to Susan Strahan, an atmospheric scientist with Universities Space Research Association, who works at NASA Goddard. Smaller ozone holes were also observed in September 1988 and 2002 due to similar weather patterns, she said in the NASA report.

"It's a rare event that we're still trying to understand," Dr. Strahan said.

The hole in the ozone over Antarctica was first discovered in 1985. Researchers linked it to man-made substances such as chlorofluorocarbons, commonly found in refrigerators and other coolants. In 1987, nearly 200 countries signed a treaty regulating the production of such ozone-depleting compounds, and over time the hole began to slowly recover. NASA and NOAA expect it to reach 1980s levels by 2070.

Despite a gradual decline in the annual ozone hole, emissions of the prohibited chemicals have risen in some regions.

Earlier this year, an international research team reported in the journal *Nature* that, despite a world-wide ban, emissions of an ozone-depleting chemical from eastern mainland China is jeopardizing the ozone layer at mid-latitudes where much of the world's population is concentrated.

Using air-monitoring equipment in Japan and Korea, the scientists detected steady emissions of a chlorofluorocarbon known as trichlorofluoromethane (CFC-11), which the world had agreed to phase out beginning in 2010. Emissions of the banned CFC-11, often used in home insulation, have increased in China by around 7,000 tons each year, the scientists said in May.

—Robert Lee Hotz contributed to this article.

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