

A smaller ozone hole for 2004

This year's Antarctic ozone hole was smaller than those of recent years. According to a preliminary analysis of data from NASA's Earth Probe satellite, the ozone hole reached a maximum area (on 21 September) of about 24 million square kilometres – similar in size to the North American continent. The largest holes on record occurred in 2000 and 2003 and were about 30 million square kilometres in size.

The growth of this year's ozone hole was more gradual than in 2003 and resembled behaviour seen in the mid-1990s. Unlike the cold conditions of 2003, winter temperatures in the Antarctic stratosphere were near the long-term average. Polar Stratospheric Clouds (PSCs), which precondition the atmosphere and allow the ozone hole to form, were also less extensive than in 2003.

At Davis, the lidar detected the first substantial PSC layer of the season in early June, about four weeks later than for the previous year. Cloud sightings were also made by Davis and Mawson expeditioners around this time.

The first signs of ozone depletion over Antarctica began during late August. The lowest ozone values above Davis were reached during mid-September, when measurements by balloon-borne instruments showed a 40% reduction in total ozone compared with mean summer and autumn values.

Temperature disturbances in the upper stratosphere began to appear in early spring. This behaviour is an annual occurrence, although the disturbances were generally more pronounced than the long-term mean. As a result, PSCs quickly disappeared and the size of the ozone hole was in decline by the end of September.

—DR ANDREW KLEKOCIUK
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CCAMLR bites back: new rules to fight toothfish poaching

A satellite-based centralised vessel monitoring system (cVMS) to track fishing vessels seeking the valuable Patagonian toothfish in the Southern Ocean was adopted by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) at its recent meeting in Hobart.

The cVMS, developed and promoted by Australia, New Zealand and the United States over the last three years, will be based at the CCAMLR Headquarters in Hobart and will help CCAMLR Members to conduct surveillance and inspections of fishing vessels in the Southern Ocean. The system is also designed to complement CCAMLR's catch documentation scheme (which tracks the taking, landing and trade of Patagonian toothfish) by allowing countries to verify that toothfish were caught where claimed.

In addition to the cVMS, CCAMLR Members agreed to improvements to the system for placing vessels on CCAMLR's illegal, unreported and unregulated (IUU) vessel list, and to provide detailed information for vessels seeking a license to fish in the CCAMLR area. Information on IUU vessels and licensed vessels will now also be made publicly available on the CCAMLR website, helping to ensure that those involved in IUU fishing do not slip through the net.

—Southern Ocean Conservation Unit, AAD

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Layers of Polar Stratospheric Clouds on 1 July 2004, measured by the Davis lidar. Special polarisation measurements reveal that the whitest clouds in this false-colour view consisted of water-ice crystals.

