

International Association of Meteorology and Atmospheric Sciences (IAMAS)

International Ozone Commission (IOC)



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Press Release

On the 20th anniversary of the discovery of the spring time Antarctic ozone hole, ozone remains depleted in the SH spring and over the high northern latitudes following cold winters

The United Nations declared the 16th of September as the International Day for the Protection of the Ozone Layer to commemorate the 16th of September 1987, the date when the Montreal Protocol was first signed. The Protocol controls the production and use of anthropogenic species which since the early 1970s have destroyed about 5% of the earth's ozone shield which protects life from the harmful solar ultraviolet radiation. The Protocol is an example of selfless cooperation between the developed and developing countries and provides an excellent paradigm to the international community for cooperation in complex environmental issues of global importance.

The theme of the International Day for the Preservation of the Ozone Layer on **16 September 2004** is: **“Save O₃ur Sky: Ozone Friendly Planet, Our Target”**.

Please visit the web site of UNEP at the following specific address where you will find suggestions for several activities on the 2004 International Ozone Day.

[http:// www.unep.org/ozone](http://www.unep.org/ozone)

The twentieth Quadrennial Symposium on Atmospheric Ozone, held last June in Kos, Greece coincided with the 20th anniversary of the discovery of the springtime Antarctic ozone hole. It marked two decades of intensified atmospheric monitoring globally and basic research in atmospheric chemistry and physics. The progress in our understanding of the impact of human activities on the chemistry and physics of the global stratosphere since the previous Quadrennial Ozone Symposium was presented by over than 690 research papers. Participants from 60 countries warn that the earth's protective ozone layer will remain vulnerable during the next decade, especially in the polar regions.

Springtime Antarctic Ozone depletion due to halogens, known as “ozone hole” has been large throughout the last decade. The size, depth and persistence of the ozone hole are expected to vary substantially from year to year and are strongly influenced not only by ozone depleting substances but by meteorological changes as well. This year's ozone hole started developing after the middle of August and has reached today the size of 18 million km² which corresponds to the 1994-2003 average for that time of the season. As was the case in 2000 when the ozone hole was the largest on record and in 2002 when it was the smallest since 1988, a single year cannot be

used to infer a general trend in the ozone hole parameters. Models predict that the Antarctic ozone levels will start recovering by 2010 due to projected decreases of halogens in the stratosphere, but it is not expected to reach pre-1980 levels before the middle of this century.

During past unusually cold Arctic winters maximum total column ozone losses due to halogens have reached 30%. Recent observations in the stratosphere indicate that the total chlorine abundance is at or near a peak, while the same may also be true for bromine. Arctic ozone depletion is highly variable and the time of ozone recovery is generally difficult to determine at present.

Ozone remains depleted in the middle latitudes of both hemispheres. Over Northern Hemisphere midlatitudes the largest long-term ozone decreases in the past two decades are observed during winter spring. Relative to the pre-ozone-hole abundances, the losses in total column ozone amounts are:

- 3-4% at northern midlatitudes in winter/spring and
- about 6% at southern midlatitudes on a year-round basis.

Measurements continue to confirm that decreases of ozone column amounts lead to increases in the biologically active part of UV radiation. UV irradiance has increased since the early 80's by 6-14% over the middle and high latitudes of both hemispheres.

During the last years emphasis has been given on the issues of interconnections between ozone depletion and climate change. New research has begun to explore the coupling between climate change and the recovery of the ozone layer. Water vapour, carbon dioxide, methane and other greenhouse gases all influence ozone depletion. In turn, ozone depletion through its association with UV-B increases influences the chemical composition of the atmosphere.

It has to be emphasized that failure to comply with the Montreal Protocol would delay or could even prevent the recovery of the ozone layer. For example continued constant production of ozone depleting substances at the 1999 amounts would likely extend the expected recovery of the ozone layer well past the year 2050.

The International Ozone Commission (IOC) of IAMAS-IUGG **urges all national and international Agencies**, which support scientific research and monitoring of ozone and related parameters to continue supporting these activities. The IOC is ready to collaborate and make significant scientific contributions, as has been done in the preparations of the Ozone Assessments in the past decades.

This text has been reviewed by the IO₃C members last on September 14, 2004

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