

International Association of Meteorology and Atmospheric Sciences (IAMAS)

International Ozone Commission (IO₃C)



President
Professor Ivar Isaksen
Tel: +47 22 855822
Fax: +47 22 855269
e-mail: i.s.a.isaksen@geo.uio.no

Secretary
Professor Christos Zerefos
Tel: +30 10 7274133
Fax: +30 10 7274157
e-mail: zerefos@geol.uoa.gr

Vice President
Dr. Sophie Godin- Beekmann
Tel: + 33 1 44 27 47 67
Fax: :+ 33 1 44 27 37 76
e-mail: : sophie.godin@aero.jussieu.fr

Embargo until noon 14 September 2006

Press Release

More than two decades since the appearance of the springtime Antarctic ozone hole, ozone remains depleted

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 ozone depleting substances, 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 a successful cooperation between scientists and industry as well as between developed and developing countries and provides an excellent paradigm to the international community for cooperation on complex environmental issues of global importance.

The theme of the International Day for the Preservation of the Ozone Layer on **16 September 2006 is: "Protect the Ozone Layer: Save Life on Earth"**.

Please visit the web site of the Ozone Secretariat for the Vienna Convention at the following specific address where you will find suggestions for several activities on the 2006 International Ozone Day.

<http://ozone.unep.org/Events/ozoneday-2006.asp>

In August 2006 WMO/UNEP released the executive summary of the "Scientific Assessment of Ozone Depletion: 2006", which was prepared by the Scientific Assessment Panel of the Montreal Protocol on Substances that deplete the Ozone Layer. Previous assessments in 1989, 1991, 1994, 1998 and 2002 led to subsequent Amendments and Adjustments of the 1987 Protocol by advancing our understanding and providing the input required to the decision making process.

Our basic understanding that anthropogenic ozone-depleting substances have been the principal cause of the ozone depletion over the past few decades has been strengthened. During the recent period of near-constant stratospheric abundances of ozone-depleting gases, variations in meteorology have been particularly important in influencing the behaviour of ozone over much of the polar and extrapolar (60°S-60°N) regions.

Large Antarctic ozone holes continue to occur. Currently the ozone hole reaches an area close to 25 million km². The severity of Antarctic ozone depletion has not continued to increase since the late 1990s and in 2002 and 2004, ozone levels within the polar vortex have been higher than in preceding years. These recent changes result mainly from increased dynamical activity and not from decreases in ozone-depleting substances. The Antarctic ozone hole is expected to continue for decades. Antarctic ozone abundances are projected to return to pre-1980 levels around 2060-2075 roughly 10-25 years later than estimated in the 2002 Assessment. The later return in the projection is primarily due to a better evaluation of the time evolution of ozone-depleting gases in the polar

regions. In the next two decades, the Antarctic ozone hole is not expected to improve significantly.

Arctic ozone depletion exhibits large year-to-year variability, driven by meteorological conditions. Over the past four decades, these conditions became more conducive to severe ozone depletion because of increasingly widespread conditions for the formation of polar stratospheric clouds during the coldest Arctic winters. This change is much larger than can be expected from the direct radiative effect of increasing greenhouse gas concentrations. The reason for the change is still unclear. Low temperature conditions have contributed to large Arctic ozone losses during some winters since the mid-1990s. Large ozone losses will likely continue to occur in cold Arctic winters during the next 15 years. The high variability in the volume of polar stratospheric clouds in these cold winters and the large differences between warm and cold winters limit our ability to predict future occurrences of large Arctic ozone loss. According to Chemistry-Climate Models, Arctic ozone levels are expected, on average, to return to pre-1980 levels before 2050.

Ozone abundances in the extrapolar regions, 60°S-60°N, have not further declined in recent years. The midlatitude column (i.e., overhead) ozone values for the 2002-2005 period were approximately 3% below pre-1980 values in the Northern Hemisphere and approximately 6% in the Southern Hemisphere, essentially the same as in the 1998-2001 period. The contribution of polar ozone depletion to midlatitude ozone depletion is substantial; the extent of the contribution is estimated to be about one-third in the Northern Hemisphere and one-half in the Southern Hemisphere. In the northern hemisphere estimates of dynamical effects on long-term trends range from ~20% to up to 50%, depending on the studies.

Measurements from some stations in unpolluted locations indicate that UV irradiance (radiation levels) has been decreasing since the late 1990s, in accordance with observed ozone increases. However, at some Northern Hemisphere stations UV irradiance is still increasing, as a consequence of long-term changes in other factors that also affect UV radiation. In polar regions, high UV irradiances lasting for a few days have been observed in association with episodes of low total ozone.

The International Ozone Commission (IO₃C) 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 members of the IO₃C have made significant contributions demonstrated in the Ozone Assessments during the past decades and are ready for further collaboration in advancing the ozone studies.

This text has been reviewed by the IO₃C members last on September 14, 2006

For more information: Professor Christos Zerefos, Secretary of the International Ozone Commission, University of Athens, Faculty of Geology & Geoenvironment, Laboratory of Climatology and Atmospheric Environment, 15784, Athens, Greece, Tel.: +30 210 3490102, Fax: +30 210 3490120, mobile: +30 6944 570099, e-mail: zerefos@geol.uoa.gr.

IO₃C: <http://ioc.atmos.uiuc.edu>,

WMO Northern Hemisphere Ozone Mapping Center: <http://lap.physics.auth.gr/ozonemaps>,

WMO Antarctic Ozone Bulletin: <http://www.wmo.ch/web/arep/ozone.html>,

European Ozone Coordinating Unit: <http://www.ozone-sec.ch.cam.ac.uk/>,

World Ozone and Ultraviolet Data Center: <http://www.woudc.org>