



International Association of Meteorology and Atmospheric Sciences (IAMAS)

## International Ozone Commission (IO<sub>3</sub>C)

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## Press Release

**The International Ozone Commission, on the 27<sup>th</sup> anniversary of the Montreal Protocol, warns that large ozone depletion in the Polar Regions continues to occur, although global ozone has been stabilizing in the past decade**

The United Nations has declared the 16<sup>th</sup> of September as the International Day for the Protection of the Ozone Layer to commemorate the 1987 signing of the Montreal Protocol on Substances that Deplete the Ozone Layer. The Montreal Protocol is an outstanding example of a successful cooperation between scientists, governments, non-government organizations, and industry to control production and consumption of ozone-depleting substances.

The theme of the International Day for the Preservation of the Ozone Layer on **16 September 2014 is: "Ozone Layer Protection: The Mission Goes On"**<sup>1</sup>.

International Ozone Day follows the very recent release of the "Assessment for Decision-Makers" or ADM, a summary document of the Scientific Assessment of Ozone Depletion 2014 - published by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO)<sup>2</sup>.

The ADM provides key information for Montreal Protocol policy makers, and has been written by the international community of ozone research scientists.

The ADM reveals some remarkable successes resulting from the Montreal Protocol, and many challenges for the future. First, ozone-depleting substances (ODS) continue to decline in our atmosphere. By 2012, combined ODS levels had declined by about 10–15% from the peak values of ten to fifteen years ago.

Second, there are now indications that ozone levels are increasing in the stratosphere. Satellite and ground based observations of upper stratospheric ozone reveal that between 2000 and 2013 ozone has clearly increased by about 5%. This ozone increase is attributable to both a decrease of ODSs and to upper stratospheric cooling by increased levels of carbon dioxide.

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<sup>1</sup> Please visit the web site of the Ozone Secretariat for the Vienna Convention [http://montreal-protocol.org/new\\_site/en/ozone\\_day\\_details.php](http://montreal-protocol.org/new_site/en/ozone_day_details.php), where you will find suggestions for worldwide activities on the 2014 International Ozone Day

<sup>2</sup> See more at: <http://www.unep.org/newscentre/Default.aspx?DocumentID=2796&ArticleID=10978&l=en#sthash.4D43aNhY.dpuf>

Third, while upper stratospheric ozone has shown signs of an increase, the global levels of total column ozone have remained relatively unchanged since 2000. This is primarily a result of large year-to-year variations that obscure the trends.

Fourth, the Antarctic ozone hole continues to occur each spring, as expected for current ODS levels. Levels of ODSs over Antarctica are projected to decline back to 1980 levels in the 2070 period. Current 2014 ground, balloon, and satellite observations show that a large ozone hole has once again developed over Antarctica.

Fifth, the evolution of the ozone layer in the second half of the 21st century will largely depend on the atmospheric abundances of the greenhouse gases: carbon dioxide, nitrous oxide (N<sub>2</sub>O), and methane (CH<sub>4</sub>). Global ozone levels are elevated by increasing CO<sub>2</sub> and CH<sub>4</sub>, while they are further depleted by increasing N<sub>2</sub>O. However, there is great uncertainty in future column ozone because of different projections of these greenhouse gases. In addition, atmospheric models project that tropical column ozone levels will decrease during the 21st century because of these greenhouse gas increases.

Finally, while ODS levels remain high, a large stratospheric sulfuric aerosol enhancement due to a major volcanic eruption or geoengineering would result in a substantial chemical depletion of total ozone over much of the globe.

Our ability to follow these future ozone levels is crucially dependent on satellite and ground-based ozone observing systems. The maintenance and continuation of ozone observations is mandatory for improving our scientific understanding of interactions between climate change and ozone depletion, and for observing the 21<sup>st</sup> century changes of the ozone layer. The International Ozone Commission (IO<sub>3</sub>C) of IAMS-UUGG **urges national and international agencies** to observe 16 September for “**Ozone Layer Protection: The Mission Goes On**” and continue to support scientific research and stratospheric ozone measurements in order to understand and observe a return of ozone to pre-ozone-hole amounts.

***This text was last reviewed by the IO<sub>3</sub>C members on September 15<sup>th</sup>***

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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.int/pages/prog/arep/gaw/ozone/index.html>

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

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

Ozone Hole Watch: <http://ozonewatch.gsfc.nasa.gov/>

Assessments on the state of the ozone layer: [http://ozone.unep.org/Assessment\\_Panels/SAP/](http://ozone.unep.org/Assessment_Panels/SAP/)

Who is who in the Montreal Protocol: <http://www.unep.fr/ozonaction/montrealprotocolwhoswho/PageFlip.asp>