



International Association of Meteorology and Atmospheric Sciences (IAMAS)

International Ozone Commission (IO₃C)

President

Dr. Sophie Godin-Beekmann

Tel: +33 1 80 28 54 99

Fax: +33 1 80 28 53 30

sophie.godin-beekmann@latmos.ipsl.fr

Secretary

Dr. Irina Petropavlovskikh

Tel. +1 303 497 62 79

Fax; +1 303 497 55 90

irina.petro@noaa.gov

Vice President

Dr. Paul Newman

Tel: +1 301 614 59 85

Fax: +1 301 614 59 03

Paul.A.Newman@nasa.gov

Press Release

The International Ozone Commission, on the 31st anniversary of the Vienna Convention for the Protection of the Ozone Layer, reports that despite signs of healing, the ozone layer continues to be affected by large ozone depletion in Antarctica.

The United Nations has declared the 16th of September as the International Day for the Preservation of the Ozone Layer to commemorate the 1987 signing of the Montreal Protocol on Substances that Deplete the Ozone Layer. The 1985 Vienna Convention was the framework agreement under which the Montreal Protocol was negotiated. It is an outstanding example of a successful collaboration between scientists, governments, non-government organizations, and industry to control the production and consumption of ozone-depleting substances.

The theme of the International Day for the Preservation of the Ozone Layer on **16 September 2016 is: “Working towards reducing global-warming HFCs under the Montreal Protocol”¹.**

The 2016 International Ozone Day follows the Quadrennial Ozone symposium held in Edinburgh, Scotland (September 5-9, 2016). More than 300 scientists from all over the world gathered to discuss ozone research and the current status of atmospheric ozone, including preliminary results from this year’s ozone hole.

Global stratospheric ozone amounts stopped decreasing in the late-1990s, and have stabilized at levels about 2-3 % less than those observed in 1980. The latest international assessment of stratospheric ozone (WMO, 2014)² has reported a small but statistically significant increase of ozone around 40 km, which has been attributed to both a decrease of ODSs and the cooling of the stratosphere by increased abundance of greenhouse gases. More recently, several studies have shown early signs that total ozone may be starting to recover over Antarctica. Due to the long lifetimes of ODSs in the atmosphere, full stratospheric ozone recovery will take several decades. Stratospheric ozone recovery will also be impacted by climate change.

An important achievement of the Montreal Protocol has been the successful reduction of the global production, consumption, and release into the atmosphere of ozone-depleting substances (ODSs). Atmospheric observations have shown that total chlorine from these ODSs is declining. Most of these ODSs are also potent greenhouse gases. The ODS contribution to global warming and climate change would have been much larger without the Montreal Protocol. The climate protection already achieved by the Montreal Protocol could be further improved by managing the emissions of substitute hydrofluorocarbon (HFC) gases with high global warming potentials and implementing alternative gases with lower global warming potentials. With the increases projected for HFCs, these chemicals could potentially contribute to 25% of additional global warming beyond the stabilization target of 450 ppm for CO₂ (today: 400 ppm).

¹ Please visit the web site of the Ozone Secretariat for the Vienna Convention <http://ozone.unep.org/en/precious-ozone> where you will find a description of worldwide activities on the 2015 International Ozone Day.

² <http://www.esrl.noaa.gov/csd/assessments/ozone/2014/report.html>

Ground, balloon, and satellite observations showed that the Antarctic ozone hole reappeared in the last few months, as expected. The hole typically reaches its maximum depletion by early October 2016, with the hole's area exceeding 19 million square kilometers on September 8. The ozone hole is caused by the release of man-made chemicals containing chlorine and bromine. Levels of these chemicals over Antarctica, 80% from human-produced compounds, are projected to decline back to 1980 levels in approximately the 2070 time period.

Considering the current chlorine and bromine levels in the stratosphere, polar ozone depletion can also occur over the Arctic but with a smaller magnitude compared to Antarctica. Arctic ozone depletion is very variable and strongly dependent on meteorological conditions in the stratosphere. Relatively large depletion occurred in the winter 2015-2016, due to the very cold conditions during the winter.

Our ability to follow future ozone levels is crucially dependent on satellite, balloon, and ground-based ozone observing systems. The maintenance and continuation of ozone observations is necessary for improving our scientific understanding of interactions between climate change and ozone depletion, for measuring the ongoing recovery impact of the Montreal Protocol, and for observing the ozone layer under changing climate conditions. The International Ozone Commission (IO₃C) of IAMS-IUGG urges national and international agencies to continue their support of measurements of ozone and related species, in order to understand and observe the evolution of atmospheric ozone over the 21st century.

This text was last reviewed by the IO₃C members on September 15th 2016

For more information: Dr. Irina Petropavlovskikh, Secretary of the International Ozone Commission, CIRES/NOAA, 325 Broadway R/GMD, Boulder, CO, 80305-3328, phone: 303-497-6279, fax: 303-497-5590, irina.petro@noaa.gov

IO₃C: <http://ioc.atmos.illinois.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>

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/en/assessment-panels/scientific-assessment-panel>

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