International Association of Meteorology and Atmospheric Sciences (IAMAS)

International Ozone Commission (IO_3C)

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Press Release

The International Ozone Commission, on the 26th 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 16th of September as the International Day for the Protection of the Ozone Layer to commemorate the signing in 1987 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 use of ozone-depleting substances. It provides an excellent example of global cooperation on a complex environmental issue.

The theme of the International Day for the Preservation of the Ozone Layer on **16 September 2013 is: "A healthy atmosphere, the future we want"**[1].

The Montreal Protocol has been highly successful in reducing atmospheric levels of ozone-depleting substances. Recent ground-based and space-based measurements show that the stratospheric amounts of chlorine and bromine, the species most harmful to the ozone layer, continue to decline. In response, global ozone abundances have stabilized at about 3.5% below 1980 levels.

However, large Antarctic ozone holes are still appearing each year during the Southern Hemisphere spring. In 2013, the ozone hole has exceeded an area of 21.9 million km^2, as of Sept. 10. High levels of chlorine and bromine from human-produced ozone depleting substances cause the ozone hole. Southern Hemisphere meteorological conditions can cause large year-to-year variations in the severity of the ozone hole, which explains the somewhat smaller ozone hole observed in 2012 compared to previous years. In addition, the Antarctic ozone hole has also been shown to significantly affect the Southern Hemisphere surface temperature, wind structure, and rainfall pattern.

Large ozone depletions have also been observed in the Arctic in past years. For example, the Arctic ozone depletion observed in March 2011 was the largest on record, and as with the

1 Please visit the web site of the Ozone Secretariat for the Vienna Convention http://montreal-protocol.org/new_site/en/ozone_day_details.php, where you will find suggestions for worldwide activities on the 2013 International Ozone Day

Antarctic ozone hole, resulted from chlorine and bromine from the human-produced ozone depleting substances. The Arctic differs from the Antarctic because of the natural higher levels of ozone, and the much greater year-to-year variability of meteorological conditions. Large Arctic depletions do not consistently appear because of this variability, but can be expected in future years while chlorine and bromine levels remain high.

Return of the Antarctic ozone layer to pre-1980 levels is projected in approximately 2060. Global ozone levels are projected to return to pre-1980 levels somewhat earlier. There is a strong interplay between increases in the concentration of greenhouse gases in the atmosphere and stratospheric ozone recovery. Greenhouse gases are projected to accelerate the recovery of ozone in middle latitudes while they will likely cause a decrease of ozone in the tropics by the end of this century.

Our ability to monitor the ozone layer crucially depends 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 recovery of the ozone layer. The International Ozone Commission (IO_3C) of IAMAS-IUGG **urges national and international agencies** to support scientific research and stratospheric ozone measurements in order to understand and observe a return to **"A healthy atmosphere, the future we want".**

This text was last reviewed by the IO_3C members on September 15th

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