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Press Release

Twenty three years after the signing of the Montreal protocol, the ozone layer has stabilized but a large Antarctic ozone hole continues to occur on a yearly basis

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 signed. The Protocol controls the production and use of ozone-depleting substances. It is an outstanding example of a successful cooperation between scientists, governments, non-government organizations and industry as well as between developed and developing countries. It also 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 2010 is: "Ozone layer protection: governance and compliance at their best"**[1].

The Montreal protocol has been highly successful in reducing the emissions and atmospheric abundances of most 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.

Global ozone abundances have stabilized and even shown signs of an increase at some Northern mid-latitude locations. Nevertheless, the latest evaluations of total ozone columns provide average values about 3.5% below the pre-1980 levels in the 60°S-60°N latitude range. In the Southern and Northern mid-latitudes, total ozone columns are respectively 6% and 3% below pre-1980 values. Those values have remained fairly constant over the last decade.

A large Antarctic ozone hole is still a regular seasonal feature in the Southern Hemisphere. In 2008 and 2009, the area of the ozone hole reached 25 and 24 million km^2 respectively (the

[1] Please visit the web site of the Ozone Secretariat for the Vienna Convention at the following specific address where you will find suggestions for worldwide activities on the 2010 International Ozone Day.

http://ozone.unep.org/Events/ozone_day_2010/index.shtml

Antarctic continent itself has a surface area of 14 million km^2). The latest estimates of the ozone hole area in mid-September 2010 are between 12 and 17 million km^2, less than at the same date in 2008 and 2009. The year to year variation in the size of the ozone hole is mainly related to the weather conditions in the polar stratosphere. A cold winter is associated with a large ozone hole and a mild winter is associated with a smaller ozone hole. The warmer conditions that prevailed over Antarctica in the winter 2010 result in a smaller ozone hole as compared to previous years. Antarctic ozone is estimated to remain low through the next decade and the first unambiguous signs of recovery are not expected to be detected before 2020.

Arctic ozone depletion is strongly dependent on meteorological conditions, which are highly variable in the Northern Hemisphere. The loss of ozone in total column ranges each year between 0 and 30%. Since 2005, Arctic winter and spring ozone loss has been variable but has remained in a range comparable to the values that have prevailed in the last decade. Largest ozone losses were found in the spring of 2005 and 2008.

In the polar and sub-polar regions of the Southern Hemisphere, springtime solar UV-B radiation remains elevated compared to that during the pre-ozone hole period on average by up to 40%, directly related to the Antarctic ozone hole. Episodes of high solar UV-B radiation levels lasting for a few days have also been observed. Clear-sky observations from sites in midlatitude regions show that since the late 1990s, UV irradiance levels have been approximately constant, which is consistent with ozone total column observations over this period.

Return of the global ozone layer to its levels before 1980 is expected to occur around the middle of the 21st century, as a result of the decrease of ozone depleting substances regulated by the Montreal Protocol. In Antarctica the return is predicted to occur about two decades later. However, there is a strong interplay between increases in the concentration of greenhouse gases in the atmosphere and stratospheric ozone recovery. Observations and model simulations show that the persistence of the ozone hole has affected tropospheric weather patterns at high southern latitudes. Continued increases in greenhouse gases are projected to accelerate the return of midlatitude total ozone columns to 1980 values, particularly in the Northern Hemisphere.

The Scientific Community has been working on the next Assessment of the state of the ozone layer, which will be published in 2011. The International Ozone Commission (IO_3C) 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.

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

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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
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