

The 2007 Antarctic ozone hole

An update from the World Meteorological Organization
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The 2007 Antarctic ozone hole is relatively small, both in terms of ozone hole area (area where the total ozone column is less than 220 Dobson Units) and in amount of destroyed ozone (ozone mass deficit, i.e. the amount of ozone that would have to be added to the ozone hole in order to fill those regions where total ozone is less than 220 Dobson Units up to 220 Dobson Units). From 1998 until now, only the ozone holes of 2002 and 2004 have been smaller than the 2007 ozone hole. It should be pointed out that this is not a sign of ozone recovery. The small ozone hole of 2007 is related to the mild temperatures of the Antarctic stratosphere during the 2007 winter. The stratosphere still contains more than enough chlorine and bromine to cause complete destruction of ozone in the 14-21 km altitude range. The amount of ozone depleting gases reached a maximum around year 2000 in the Antarctic stratosphere. This amount is now declining slowly at a rate of about 1% per year. One expects that the stratosphere will contain enough chlorine and bromine to cause severe ozone holes for another 1-2 decades. The severity of the ozone hole will, during this time period, to a large extent be determined by the meteorological conditions of the stratosphere during the Antarctic winter. Increasing amounts of greenhouse gases in the atmosphere will lead to lower temperatures in the stratosphere and this increases the risk of severe ozone holes during the next couple of decades. But there will always be interannual variability in the meteorological conditions, so one can also experience less severe ozone holes. The figures below show the ozone hole area, the ozone mass deficit, the average temperature over the 60-90°S region and the area where the temperature is low enough for the existence of polar stratospheric clouds.

More information can be found at <http://www.wmo.int/pages/prog/arep/gaw/ozone/index.html>.
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