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Report says ozone layer depletion stopped

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AFP

The protective ozone layer in the Earth's upper atmosphere has stopped thinning and should largely be restored by mid-century thanks to a ban on harmful chemicals, say UN scientists.

The *Scientific Assessment of Ozone Depletion 2010 report* (<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=647&ArticleID=6751&l=en>)

says a 1987 international treaty that phased out chlorofluorocarbons (CFC) - substances used in refrigerators, aerosol sprays and some packing foams - has been successful.

Ozone provides a natural protective filter against harmful ultra-violet rays from the Sun, which can cause sunburn, cataracts and skin cancer as well as damage vegetation.

First observations of a seasonal ozone hole appearing over the Antarctic occurred in the 1970s and the alarm was raised in the 1980s after it was found to be worsening under the onslaught of CFCs, prompting 196 countries to join the Montreal Protocol.

"The Montreal Protocol signed in 1987 to control ozone depleting substances is working, it has protected us from further ozone depletion over the past decades," says [World Meteorological Organisation](http://www.wmo.int) (<http://www.wmo.int>) head of research Len Barrie.

"Global ozone, including ozone in the polar region is no longer decreasing but not yet increasing."

Earlier than expected

The 300 scientists who compiled the four yearly ozone assessment now expect that the ozone layer in the stratosphere will be restored to 1980 levels in 2045 to 2060. According to the report this is "slightly earlier" than expected.

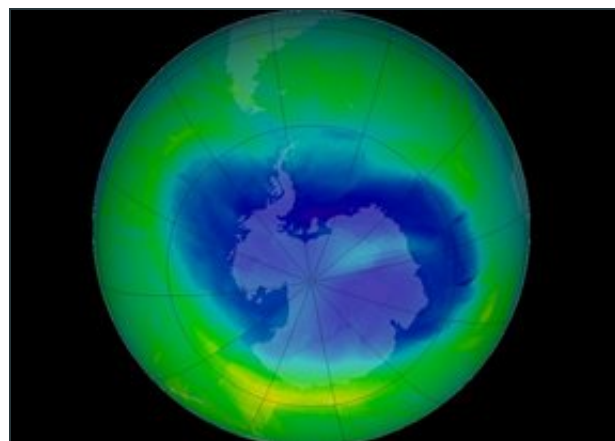
Although CFCs have been phased out, they accumulated and persist in the atmosphere and the effect of the curbs takes years to filter through.

The ozone hole over the South Pole, which varies in size and is closely monitored when it appears in springtime each year, is likely to persist even longer and may even be aggravated by climate change, the report says.

Scientists are still getting to grips with the complex interaction between ozone depletion and global warming, says Barrie.

"In the Antarctic, the impact of the ozone hole and the surface climate is becoming evident," he says.

"This leads to important changes in surface temperature and wind patterns, amongst other environmental changes."



The ozone layer in the stratosphere is expected to be restored mid-century (NASA/Goddard Space Flight Center)

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Antarctic ice growth linked to ozone hole (</science/articles/2009/04/22/2549626.htm>) , Science Online, 14 Oct 2009

Greenhouse gases

CFCs are classified among greenhouse gases that cause global warming, so the phase out "provided substantial co-benefits by reducing climate change," the report found.

Barrie estimates that it is equivalent to a reduction of about 10 gigatonnes of emissions per year.

But, the ozone-friendly substances that have replaced CFCs in plastics or as refrigerants - hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs) - are also powerful greenhouse gases.

HFCs alone are regarded as 14,000 times more powerful than carbon dioxide (CO₂), which is the focus of international efforts to tackle climate change, and HFC emissions are growing by 8% a year, according to UN agencies.

"This represents a further potential area for action within the overall climate change challenge," says UN Environment Programme chief Achim Steiner.

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