

Ozone depletion: chemistry, trends and dynamics, the extent of recovery and prospects through the 21st century

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The impact of stratospheric ozone depletion by human-produced ozone depleting substances (ODSs) was dramatically revealed by the 1985 discovery of the ozone hole. The observed global ozone decline added urgency. The international community responded in 1987 by agreeing to the Montreal Protocol (MP). Deliberate production of ODSs (CFCs, methyl chloroform, carbontetrachloride, halons, etc.) for emissive uses is now fully banned by every nation in the world under the MP. HCFCs are slated for phase out in the next few years.

In this presentation, the main findings of the WMO/UNEP Scientific Assessment of Ozone Depletion: 2014 will be reviewed. This will include ODS and ozone trends; the future projections of stratospheric ozone and the impact of future greenhouse gas levels on ozone and the stratosphere.

Plans for the WMO/UNEP Scientific Assessment of Ozone Depletion: 2018 are being developed. The MP Parties have agreed to a very broad “Terms-of-Reference” for this Assessment at the Meeting of the Parties (Nov. 2015). They requested the Scientific Assessment Panel to provide a review of our scientific knowledge, including the topics covered in the 2014 assessment. Topics to receive more attention in 2018 include an assessment of the effects of recent volcanic activity and of possible climate engineering methods on future stratospheric ozone. After many years of discussion within the MP, an amendment to the protocol to include controls on hydrofluorocarbons (HFCs) is being negotiated this year. While HFCs have small ozone depletion potentials, many have large global warming potentials