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## *The Ozone Story*



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UNITED NATIONS ENVIRONMENT PROGRAMME

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## Foreword

The discovery of the ozone “hole” in 1985 shocked the world. It has come to be regarded as one of this century’s major environmental disasters. What is not generally known is that scientists have, since 1974 been warning the world that the ozone layer will deplete rapidly unless we stop using ozone depleting chemicals. It took 11 years of assessment, research, and negotiations to promote the first general ozone agreement in 1985. This agreement, known as the Vienna Convention for the Protection of the Ozone Layer, was a pledge by the Governments to protect the ozone layer. The specific commitments came in 1987 through the Montreal Protocol on Substances that Deplete the Ozone Layer.

Governments have, over the years, taken action to strengthen the Protocol through amendments. The implementation of the Protocol has led to a dramatic drop in the consumption of ozone depleting chemicals in the last ten years. Scientists predict that the ozone layer will begin to recover in a few years and will be fully restored by the year 2050, if we complete the implementation of the Protocol.

The efforts of the world community to restore the ozone layer is a fascinating example of how the humanity can act as one to face a common danger. It shows how everyone can contribute to the welfare of humanity and of the environment.

The cartoons which follow tell the story in a simple form. If you are interested in more details, you can visit our website (<http://www.unep.org/ozone>) and many other linked websites from all over the world of scientific organizations such as NASA and World Meteorological Organization (WMO), Governments, UN Organizations and many Non-Governmental Organizations.

Now, carry on and enjoy.....

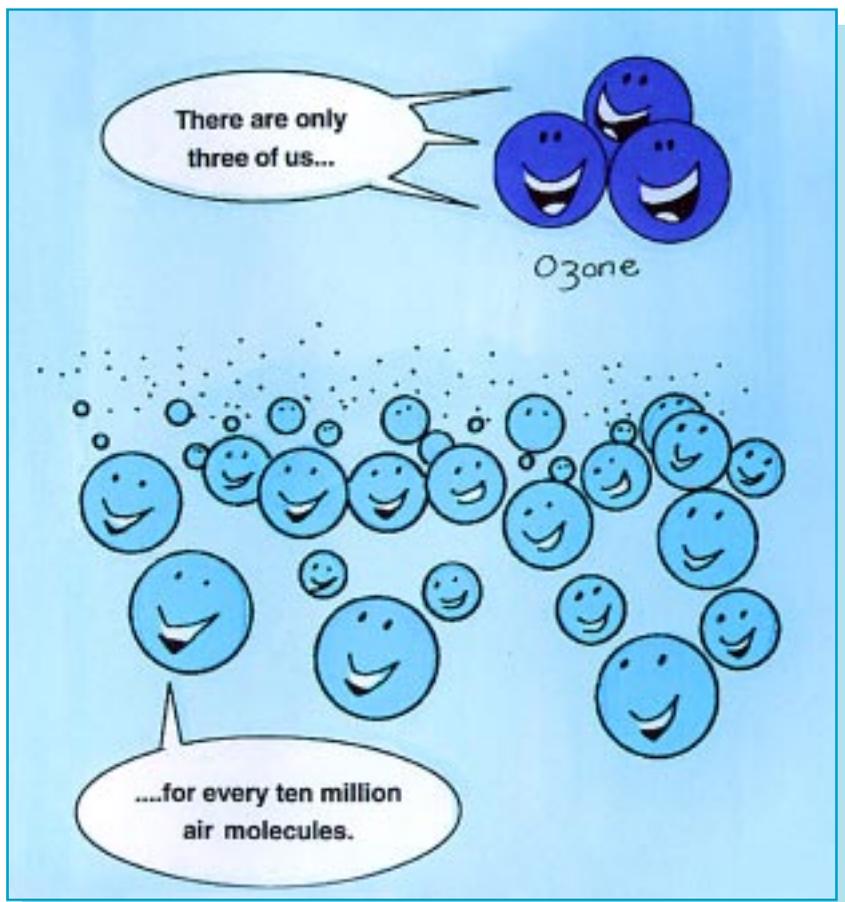
A handwritten signature in black ink, appearing to read "Klaus Topfer". The signature is stylized and includes a horizontal line above the name.

Klaus Topfer  
Executive Director

United Nations Environment Programme



*"The ozone layer is a thin layer of ozone in the atmosphere, 10 - 50 kilometres above the earth."*



*"Ozone ( $O_3$ ) has three atoms. It is very rare, only three out of 10 million molecules in the air are ozone. Ninety per cent of ozone is in the upper atmosphere."*



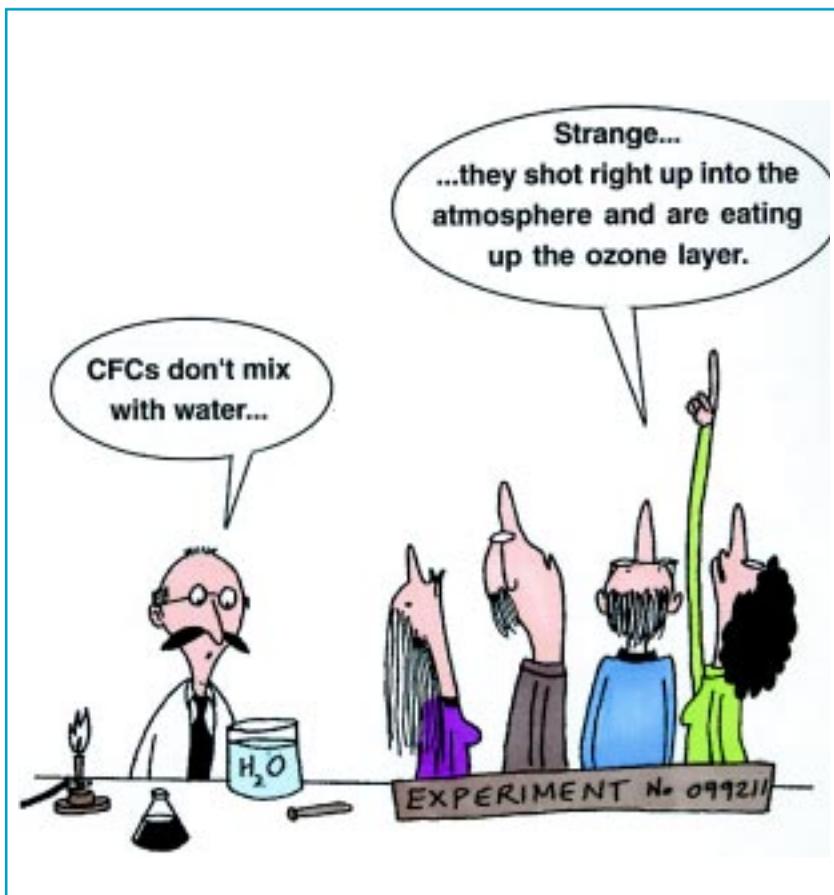
*"The ozone layer absorbs most of the harmful ultraviolet-B (UV-B) radiation from the sun."*



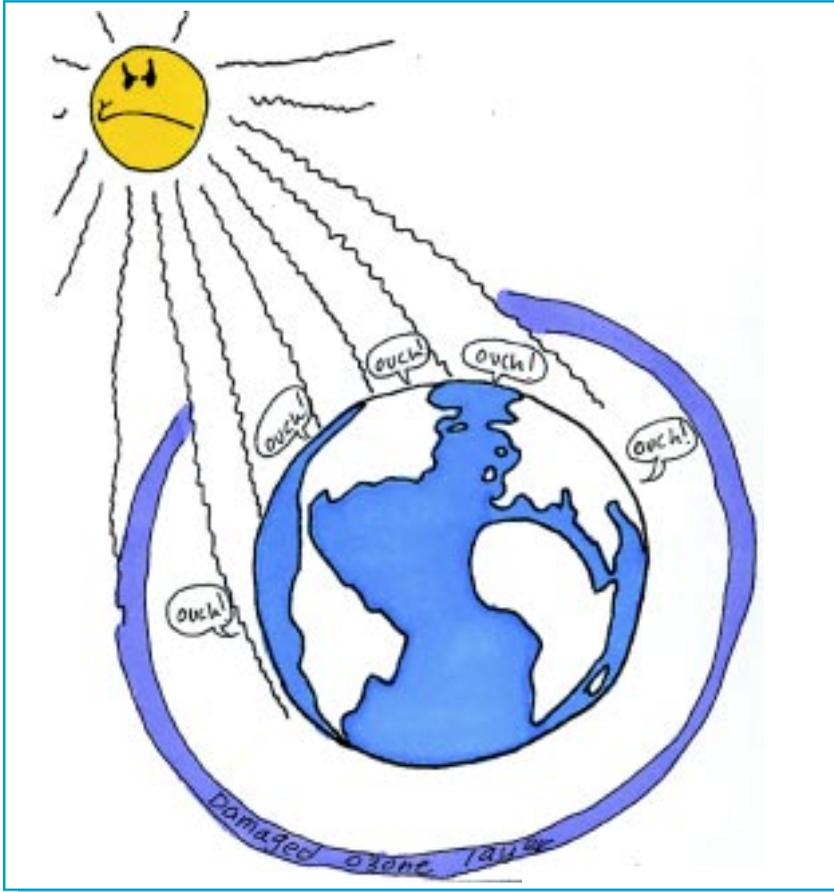
*"Wonder gas" CFCs were invented in 1928 for commercial applications.*



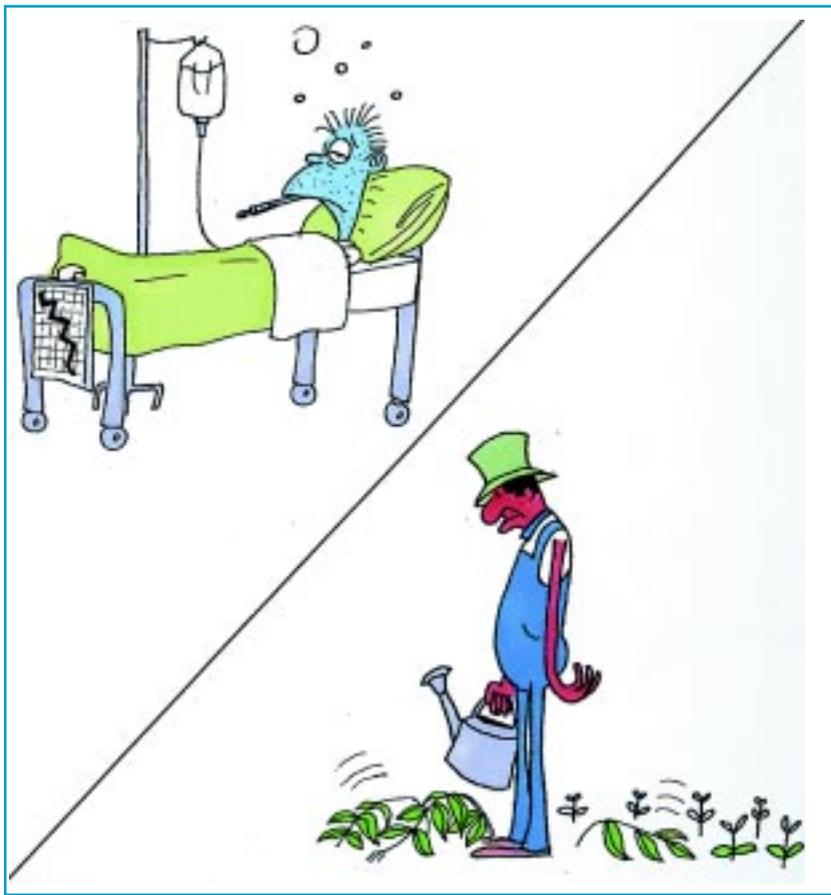
*"...use of CFCs increases rapidly..."*



*"Scientists discover a link between CFCs and ozone layer depletion."*



*"If the ozone layer depletes, more harmful UV-B radiation will reach the earth through the damaged ozone layer."*



*“More UV-B radiation means more skin cancers, more diseases and eye cataracts, less yield from plants, less productivity from oceans, damage to plastics...”*

1977



*"In 1977, the United Nations Environment Programme (UNEP) sets up a co-ordinating committee to study the ozone layer."*

1978



*"In 1978, the United States of America, Canada, Sweden and Norway ban the use of CFCs in aerosols."*

1981



*"In 1981, UNEP starts inter-governmental negotiations to protect the ozone layer."*



*"After 1982, in the absence of other moves, the consumption of CFCs increases again. Industry demands proof of ozone depletion due to CFCs."*

1985



*"Governments agree to study, exchange information and protect the ozone layer - through the Vienna Convention for the Protection of the Ozone Layer (1985). Scientists continue to find proof of ozone depletion."*

1985

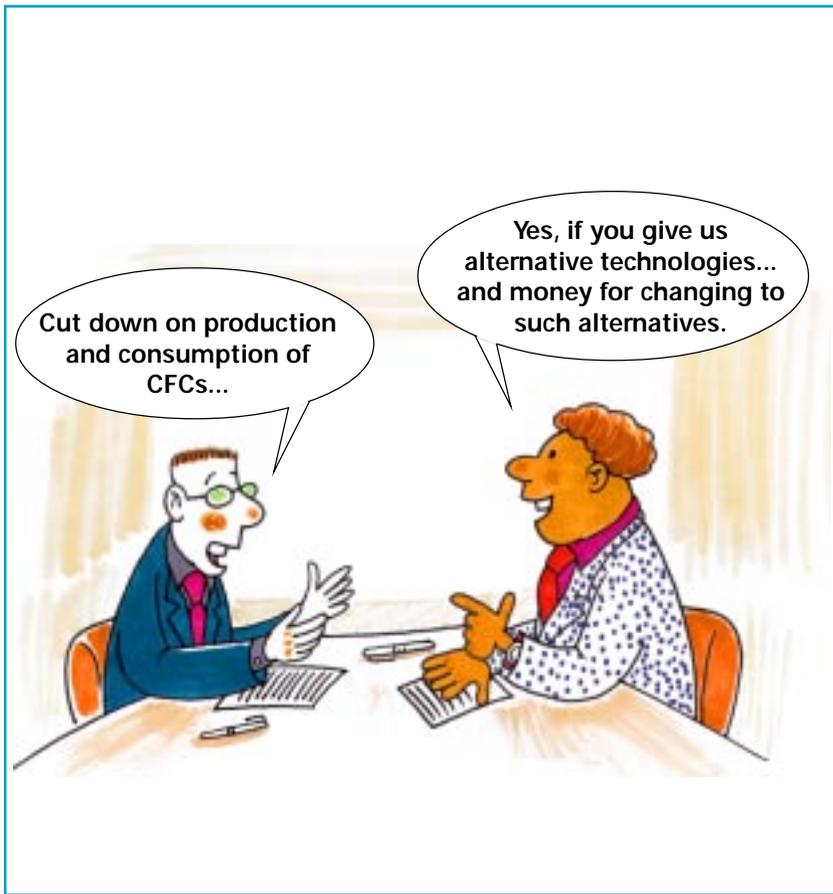


*"The British Antarctic Team discovers severe thinning in the ozone layer over Antarctica - the ozone hole."*

*The Montreal Protocol on Substances  
that Deplete the ozone Layer – 1987*



*"In 1987, 46 governments agree to a fifty per cent cut in the production and consumption of CFCs by the year 2000; a freeze in production and consumption of halons by 1992; further controls linked to assessments by experts."*



*"Many developing countries ask for alternative technologies and financial assistance to implement the Montreal Protocol."*

1988



*"In 1988, the UNEP - WMO report on ozone trends links CFCs to ozone depletion."*

1989



*"In 1989, the UNEP Assessment Panel of experts reports  
THE NEED for tougher controls."*

*London Amendment – 1990*



*“Parties agree to completely phase out CFCs by the year 2000, and to establish a Multilateral Fund to assist developing countries. US\$ 240 million was allocated for 1991 - 1993.”*



*“UNEP Assessment Panels recommend that more substances (HCFCs, methyl bromide) are controlled and that the phase out of CFCs is advanced.”*

*Copenhagen Amendment - 1992*



*"In 1992, it was decided that the developed countries phase out HCFCs by 2030, freeze methyl bromide by 1995 and that the phase out of CFCs be brought forward to 1996."*

1993



*"In 1993, the Meeting of the Parties, held in Bangkok, agrees to a replenishment of the Multilateral Fund - US\$455 million for 1994 - 1996."*



*"Halons are phased out by industrialized countries. UNEP Assessment Panels recommend tougher controls on methyl bromide."*



*"Some countries, the Russian Federation and others, report an inability to phase out CFCs by 1996 due to their internal problems. The Global Environment Facility (GEF) offers to help them. Developing countries agree to phase out methyl bromide by 2010."*

1996



*"The Meeting of the Parties held in Costa Rica, approves the replenishment of the Multilateral Fund and gives US\$466 million for 1997 - 1999."*

1996



*Industrialized countries*

*Montreal Amendment - 1997*



*"Industrialized countries agree to phase out methyl bromide by 2005. Developing countries will phase out the same by 2015."*

*Montreal Amendment – 1997*



*"Licensing for the import and export of CFCs was introduced."*



*"GEF assists countries with economies in transition to phase out CFCs."*

1999



*The Ozone meetings in Beijing in December 1999 approved a replenishment of the Multilateral Fund of US\$ 440 million for the years 2000-2002 for continuing the phase-out of CFCs, in addition to the carry-over of US\$ 35.7 million from the previous period.*

1999



*The 11th Meeting of the Parties in Beijing banned bromochloromethane, (a new ozone-depleting chemical) and put controls on production of HCFCs and trade in HCFCs with non-Parties.*

1999



*The Beijing Declaration (December 1999) reiterated the commitment of all Governments to continue full implementation of the Montreal Protocol and ensure the protection of the ozone layer.*

*What can I do to protect the Ozone Layer?*



*"Do not release CFCs - recycle them!"*

*What can I do?*



*"Demand ozone friendly products."*





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## Comments

