

20 QUESTIONS & ANSWERS

ABOUT THE OZONE LAYER

2022 Update



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This report is available on the internet at the following locations:

<https://ozone.unep.org/science/assessment/sap>

<https://www.csl.noaa.gov/assessments/ozone/2022>

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Cover image: Artistic rendering of the Aura spacecraft in Earth orbit. Aura, launched in 2004 by the U.S. National Aeronautics and Space Administration (NASA), carries four instruments: the Microwave Limb Sounder (MLS), High Resolution Dynamics Limb Sounder (HIRDLS), Tropospheric Emission Spectrometer (TES) and Ozone Monitoring Instrument (OMI). The instrument suite has provided observations of stratospheric and tropospheric ozone abundances, as well as a wide range of other chemical and physical properties of the atmosphere. The observations have been used extensively to guide the scientific community's understanding of the effects of human activity on Earth's protective ozone layer. Of particular importance have been the MLS observations of the chemical conditions in the ozone layer over Antarctica, including halogen species (ClO and HCl) and nitric acid (HNO₃) (see Fig. Q7-3). Image credit: NASA.

Cover design by Chelsea R. Thompson



← The Aura spacecraft in a clean-room, prior to launch. Photo credit: NASA

TWENTY QUESTIONS & ANSWERS ABOUT THE OZONE LAYER

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PREFACE

This document, *Twenty Questions and Answers About the Ozone Layer: 2022 Update*, is a component of the *Scientific Assessment of Ozone Depletion: 2022* report. The report is prepared quadrennially by the Scientific Assessment Panel (SAP) of the Montreal Protocol on Substances that Deplete the Ozone Layer*. The 2022 edition of the Twenty Questions document is the fifth update of the original edition that appeared in the 2002 Assessment Report. The motivation behind this scientific publication is to tell the story of ozone depletion, ozone-depleting substances and the success of the Montreal Protocol. The questions and answers format divides the narrative into topics that can be read and studied individually by the intended audience of specialists and non-specialists. The topics range from the most basic (e.g., What is ozone?) to more recent developments (e.g., the Kigali Amendment to the Montreal Protocol). Each question begins with a short answer followed by a longer, more comprehensive answer. Figures enhance the narrative by illustrating key concepts and results. This document is principally based on scientific results presented in the 2022 and earlier Assessment Reports and has been extensively reviewed by scientists and non-specialists to ensure quality and readability.

We hope that you find this Twenty Questions and Answers edition of value in communicating the scientific basis of ozone depletion and the success of the Montreal Protocol in protecting the ozone layer and climate.

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* <https://ozone.unep.org/science/assessment/sap>