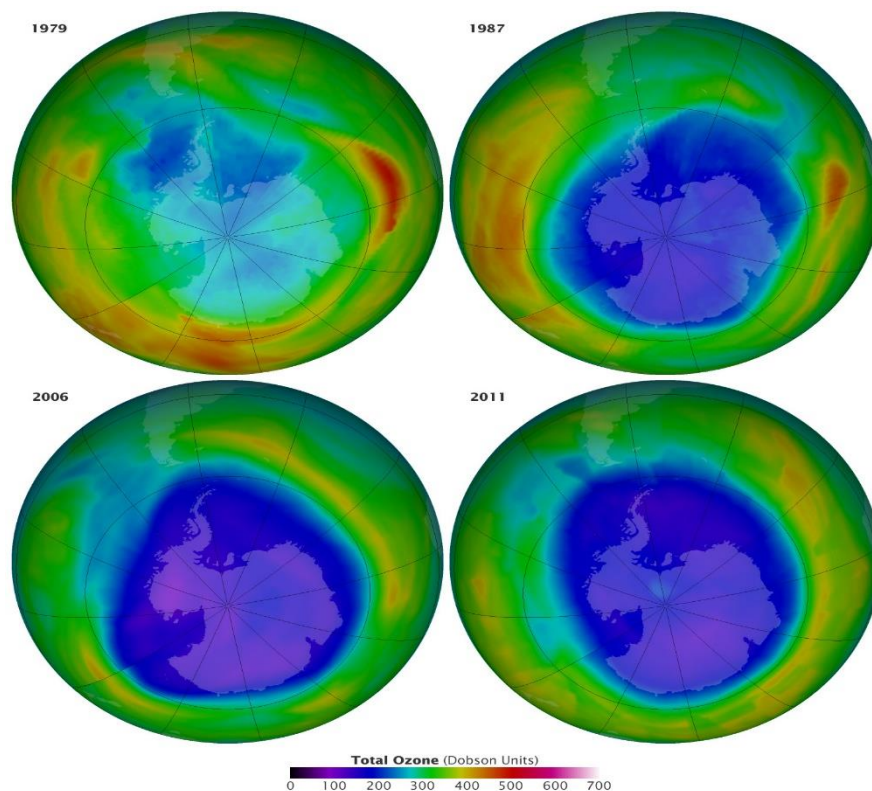


The ozone layer is a protective region of the Earth’s atmosphere that absorbs much of the Sun’s harmful ultraviolet (UV) radiation. Also known as “trioxygen,” a molecule of ozone is made up of 3 oxygen atoms bonded together forming a pale blue gas. An important layer of this gas exists in the lower stratosphere, and shields all life on earth from roughly 98 percent of the mid-range UV radiation coming from the Sun.

In the 1970s, atmospheric research began showing that the ozone layer was being depleted by manmade chemicals known as chlorofluorocarbons, or CFCs. The research revealed two problems: a steady decline in the total amount of ozone in the atmosphere, and a large gap or “hole” in the ozone layer near the Earth’s polar regions. At the time, the increased use of CFCs as aerosols, refrigerants, and propellants was producing large amounts of these compounds in the atmosphere where they break down causing them to release free chlorine. The chlorine reacts with the oxygen atoms in a molecule of ozone, thus destroying it and depleting the layer.

In 1989 an international treaty known as the Montreal Protocol was put into effect, banning the production of CFCs, halons, and other ozone-depleting chemicals. Over the course of the next couple of decades, ozone levels stabilized and even began to recover by the mid-2000s. Recovery is projected to continue over the next few decades, and the ozone hole is expected to reach pre-1980 levels by the latter half of this century. As such, the Montreal Protocol is considered to be one of the most successful international environmental agreements ever signed.



<https://earthobservatory.nasa.gov/images/79198/watching-the-ozone-hole-before-and-after-the-montreal-protocol>