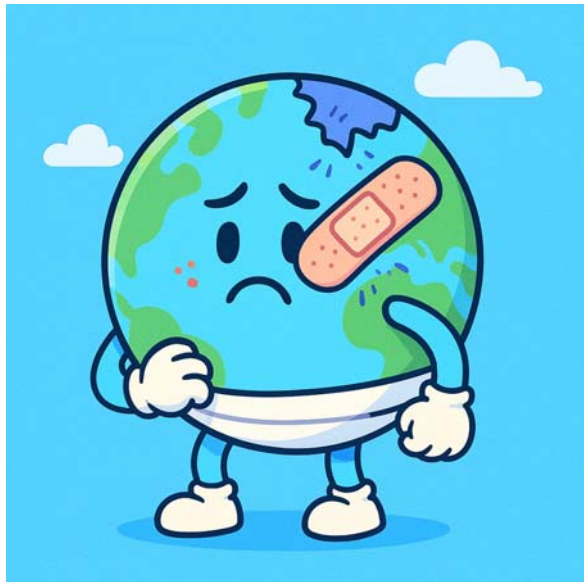


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How Long Will It Take for the Ozone Layer to Fully Recover?

High above the Earth, the ozone layer acts like a shield, protecting us from the sun's most harmful ultraviolet (UV) rays. These rays can cause sunburns, skin cancer, and damage to plants and animals. But for many years, the ozone layer was being damaged by chemicals called CFCs (chlorofluorocarbons), which were used in spray cans, refrigerators, and air conditioners.

When scientists discovered the problem in the 1980s, countries around the world took action. In 1987, they signed the Montreal Protocol, an agreement to stop making and using CFCs. Because of that effort, the ozone layer is no longer getting worse. In fact, it is starting to heal.

But healing takes time.

Ozone is made and broken down naturally in the stratosphere, a high layer of Earth's atmosphere. Even though harmful chemicals like CFCs were mostly banned, they don't disappear right away. These chemicals can stay in the atmosphere for 50 to 100 years. That means they are still floating around and slowly affecting ozone even now.

So, how long will it take for the ozone layer to fully recover? Scientists say that if countries keep following the Montreal Protocol, the ozone layer over much of the world will return to 1980 levels by the year 2040. The ozone hole over Antarctica, which is the most damaged part, will likely heal by around 2066. That may seem like a long time, but it's good news that the layer is healing at all.

Other factors like climate change and natural events such as volcanic eruptions can also affect ozone levels. That's why scientists continue to study the ozone layer carefully.

The story of the ozone layer shows that when people work together and listen to science, they can fix serious problems. The recovery may be slow, but it's happening—and it gives hope that we can protect our planet for the future.