

Ozone loss over the Arctic this year was so severe that for the first time it could be called an "ozone hole" like the Antarctic one, scientists report. About 20km (13 miles) above the ground, 80% of the ozone was lost, they say.

The cause was an unusually long spell of cold weather at altitude. In cold conditions, the chlorine chemicals that destroy ozone are at their most active.

It is currently impossible to predict if such losses will occur again, the team writes in the journal Nature. Early data on the scale of Arctic ozone destruction were released in April, but the Nature paper is the first that has fully analysed the data.

"Winter in the Arctic stratosphere is highly variable - some are warm, some are cold," said Michelle Santee from Nasa's Jet Propulsion Laboratory (JPL).

"But over the last few decades, the winters that are cold have been getting colder. So given that trend and the high variability, we'd anticipate that we'll have other cold ones, and if that happens while chlorine levels are high, we'd anticipate that we'd have severe ozone loss."

Ozone-destroying chemicals originate in substances such as chlorofluorocarbons (CFCs) that came into use late last century in appliances including refrigerators and fire extinguishers.

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