

# 'We're all in big trouble': Climate panel sees a dire future

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In this Friday, Sept. 6, 2019 file photo, storm surge from Hurricane Dorian blocks Cedar Island off from the mainland on NC 12 in Atlantic Beach, N.C., after Hurricane Dorian passed the coast. A special United Nations-affiliated oceans and ice report released on Wednesday, Sept. 24, 2019 projects three feet of rising seas by the end of the century, much fewer fish, weakening ocean currents, even less snow and ice, and nastier hurricanes, caused by climate change. (AP Photo/Tom Copeland)

Earth is in more hot water than ever before, and so are we, an expert United Nations climate panel warned in a grim new report Wednesday.

Sea levels are rising at an ever-faster rate as ice and snow shrink, and oceans are getting more acidic and losing oxygen, the Intergovernmental Panel on Climate Change said in a report issued as world leaders met at the United Nations.

It warned that if steps aren't taken to reduce emissions and slow global warming, seas will rise 3 feet by the end of the century, with many fewer fish, less snow and ice, stronger and wetter hurricanes and other, nastier weather systems.

"The oceans and the icy parts of the world are in big trouble, and that means we're all in big trouble, too," said one of the report's lead authors, Michael Oppenheimer, professor of geosciences and international affairs at Princeton University. "The changes are accelerating."

The dire effects will be felt on both land and sea, harming people, plants, animals, food, societies, infrastructure and the global economy. In fact, the international team of scientists projected for the first time that some island nations will probably become uninhabitable.

The oceans absorb more than 90% of the excess heat from carbon pollution in the air, as well as much of the carbon dioxide itself. Earth's snow and ice, called the cryosphere, are also being eroded.

"The world's oceans and cryosphere have been taking the heat for climate change for decades. The consequences for nature and humanity are sweeping and severe," said Ko Barrett, vice chair of the IPCC and a deputy assistant administrator for research at the U.S. National Oceanic and Atmospheric Administration.

The report found:

— Seas are now rising at one-seventh of an inch (3.66 millimeters) a year, which is 2.5 times faster than the rate from 1900 to 1990.

— The world's oceans have already lost 1% to 3% of the oxygen in their upper levels since 1970 and will lose more as warming continues.

—From 2006 to 2015, the ice melting from Greenland, Antarctica and the world's mountain glaciers has accelerated. They are now losing 720 billion tons (653 billion metric tons) of ice a year.

—Arctic June snow cover has shrunk more than half since 1967, down nearly 1 million square miles (2.5 million square kilometers).

—Arctic sea ice in September, the annual low point, is down almost 13% per decade since 1979. This year's low, reported Monday, tied for the second-lowest on record.

—Marine animals are likely to decrease 15%, and catches by fisheries in general are expected to decline 21% to 24%, by the end of century because of climate change.



This early Friday, Aug. 16, 2019 file photo shows an aerial view of large Icebergs floating as the sun rises near Kulusuk, Greenland. Greenland has been melting faster in the last decade, and this summer, it has seen two of the biggest melts on record since 2012. A special United Nations-affiliated oceans and ice report released on Wednesday, Sept. 24, 2019 projects three feet of rising seas by the end of the century, much fewer fish, weakening ocean currents, even less snow and ice, and nastier hurricanes, caused by climate change. (AP Photo/Felipe Dana)

"Climate change is already irreversible," French climate scientist Valérie Masson-Delmotte, a report lead author, said at a news conference in Monaco, where the document was released. "Due to the heat uptake in the ocean, we can't go back."

But many of the worst-case projections in the report can still be avoided, depending on how the world handles the emissions of heat-trapping gases, the report's authors said.

The IPCC increased its projected end-of-century sea level rise in the worst-case scenario by nearly 4 inches (10 centimeters) from its 2013 projections because of the increased recent melting of ice sheets in Greenland and Antarctica.

The new report projects that, under the business-as-usual scenario for carbon emissions, seas by the end of the century will rise between 2 feet (61 centimeters) and 43 inches (110 centimeters), with a most likely rise of 33 inches (84 centimeters). This is slightly less than the traditional 1 meter (39 inches) that scientists often use.

And sea level will rise two to three times as much over the centuries to come if warming continues, so the world is looking at a "future that certainly looks completely different than what we currently have," said report co-author Hans-Otto Portner, a German climate scientist.

The Nobel Prize-winning IPCC requires that its reports be unanimously approved. Because of that, its reports tend to show less sea level rise and smaller harm than other scientific studies, outside experts said.

"Like many of the past reports, this one is conservative in the projections, especially in how much ice can be lost in Greenland and Antarctica," said NASA oceanographer Josh Willis, who studies Greenland ice melt and wasn't part of the report.

Willis said people should be prepared for a rise in sea levels to be twice these IPCC projections.

The world's warm water coral reefs will go extinct in some places and be

dramatically different in others, the report said.

"We are already seeing the demise of the warm water coral reefs," Portner said. "That is one of the strongest warning signals that we have available."

Outside scientists praised the work but were disturbed by it.

"It is alarming to read such a thorough cataloging of all of the serious changes in the planet that we're driving," said Texas A&M University climate scientist Andrew Dessler. "What's particularly disturbing as a scientist is that virtually all of these changes were predicted years or decades ago."

The report's authors emphasized that it doesn't doom Earth to this gloomy future.

"We indicate we have a choice. Whether we go into a grim future depends on the decisions that are being made," Portner said.

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