

Glaciers could disappear from several mountain ranges during this century, new report says

By Nina Avramova, CNN

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World



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(CNN) — Most glaciers in Central Europe, Western Canada and the United States would vanish in the second half of this century under the current rates of ice loss, according to a new report.

Glaciers have lost over 9,000 billion tons of ice between 1961 and 2016, according to a research letter published in the journal *Nature* on Monday. This amounts to a block of ice the size of Germany and almost 100 feet thick, or the size of the United States and 4 feet thick, said lead author Michael Zemp.

"Under current loss rates we are going to lose glaciers -- basically all glaciers -- in several mountain ranges," said Zemp, who is a lecturer in glaciology at the University of Zurich.

This ice loss has also meant global sea levels increased by up to 27 millimeters over the time period, said the letter, which was authored by 15 international scientists. This accounts for between 25% to 30% of the observed increase in global sea levels.

In this latest research, the team used data from over



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Calculations of changes in global glacier mass can be further improved, the researchers noted. One way to do this would be to have more observational data, especially from regions that are more likely to contribute to future sea level increases, such as Alaska, Arctic Canada and the Russian Arctic.

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19,000 glaciers, including satellite observation and 450 field visits. That's far more than previous studies, which Zemp said relied on data from around 500 glaciers.

Glaciers are "icons of climate change," the authors said, and the research suggests glacier loss may be larger than previously reported.

In addition to raising sea levels, Zemp said that melting glaciers can destabilize mountain ridges. Glaciers can also be an important water source for agriculture. For example, in the Peruvian Andes, he said, households depend on local glacier water in dry seasons.

By comparing current ice loss rates with remaining ice volume the researchers found that glaciers in several regions, including in the European Alps, New Zealand and Western Canada, will disappear within this century.

"But behind that there is a second bad message," said Zemp. That message? In more heavily glaciated regions, such as the Canadian Arctic, the melting of glaciers has only just "kicked in," meaning that these glaciers will continue to raise sea levels beyond 2100.

Glaciers in other regions, such as the European Alps and New Zealand, also saw significant ice losses, the study said, but they played a small role when it comes to rising global sea levels because of the regions' small glacierized areas.

Currently, up to 335 billion tons of ice are lost each year, the study found. This translates into an increase in sea levels of nearly 1 millimeter per year, according to the calculations.

Martin Siegert, co-director at the Grantham Institute for Climate Change and Environment at Imperial College London said that the research confirmed what glaciologists had expected for some time -- "that glaciers around the world are contributing as much to sea level rise as the Greenland Ice Sheet." Siegert was not involved in the new research.

"At the moment, their state of health is critical to how sea levels will rise over the coming decades," he said in an email.

"The outlook is bleak for these glaciers, however, with melting entirely over the coming century."