

Climate crisis: Sea level ‘on course to rise by one metre by 2100’ if global emissions targets are missed

Projected ocean surge would ‘devastate’ coastal areas, researchers warn

Kate Ng | 21 hours ago |



Sea levels could rise by more than one metre by the year 2100 and 5m by 2300 if global emissions targets are not achieved, according to a study.

Scientists at Nanyang Technological University (NTU) in Singapore modelled projections from over 100 international experts for the global average sea level changes based on two climate scenarios.

In the low emissions scenario, in which global warming is limited to 2C above pre-industrial levels, experts estimate a rise of 0.5m by 2100 and 0.5m to 2m by 2300.

In a high emissions scenario where global warming rises by 4.5C, the estimates surged between 0.6m and 1.3m by 2100 and 1.7m to 5.6m by 2300.

The study, which was published in science journal *Nature*, notes that melting ice shelves in the Antarctic and Greenland ice sheets are the “largest potential contributors” to global mean sea level rise, as the biggest reservoirs of land-based ice on earth.

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“Reference postulates that ice cliffs become unstable at elevations higher than 90 metres above sea level, facilitating the collapse of ice sheets during warm periods” the study states, noting that the Antarctic ice sheet is “particularly vulnerable to this process”.

It adds: “The multimeter global mean sea level rise (GMSL) rise projected by some experts... would expose up to hundreds of millions of people to coastal flooding and

devastate coastal ecosystems.

“However, the expert projections also clearly illustrate the potential for evading such large GMSL rise through successful reduction of emissions.”

The study was a collaboration between researchers from NTU, the University of Hong Kong, Maynooth University in Ireland, the UK’s Durham University, Roward University and Tufts University in the US, and the Potsdam Institute for Climate Impact Research in Germany

Professor Benjamin Horton, who led the survey, said: “The complexity of sea level projections, and the sheer amount of relevant scientific publications, make it difficult for policymakers to get an overview of the state of the science.

“To obtain this overview, it is useful to survey leading experts on the expected sea level rise, which provides a broader picture of future scenarios and informs policymakers so they can prepare necessary measures.”

Co-author Dr Andra Garner, an assistant professor of environmental science at Rowan University, said: “We now that the planet will see additional sea level rise in the future. But there are stark differences in the amount of sea level rise experts project for low emissions compared to high emissions.

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“This provides a great deal of hope for the future, as well as a strong motivation to act now to avoid the more severe impacts of rising sea levels.”

Dr Niamh Cahill, of Maynooth University, added: “This international study is based on the informed opinions of 106 sea level experts and underlines the critical importance of pursuing a low emissions policy to limit sea level rise.”

Current global emissions targets under the Paris Agreement seek to limit global warming to 1.5C and aim to strengthen participating countries’ abilities to deal with the impact of climate change.

But a number of countries are not on track to meet their obligations, while Donald Trump has withdrawn the US - one of the world’s leading carbon emitters - from the agreement entirely.

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