




The Australian

Ice-sheet melting raising global sea levels sooner than expected, study says

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Greenland and Antarctic ice-sheet melting is 'accelerating rapidly' and raising the global sea level sooner than expected, according to a NASA study.

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THE pace at which the Greenland and Antarctic ice sheets are melting is 'accelerating rapidly' and raising the global sea level, according to a NASA study.

The findings suggest that the ice sheets - more so than ice loss from Earth's mountain glaciers and ice caps - have become "the dominant contributor to global sea level rise, much sooner than model forecasts have predicted".

The study, published on Tuesday, is the longest to date examining changes to polar ice sheet mass, combined two decades of monthly satellite measurements with regional atmospheric climate model data to study changes in mass.

"That ice sheets will dominate future sea level rise is not surprising - they hold a lot more ice mass than mountain glaciers," said lead author Eric Rignot, jointly of NASA's Jet Propulsion Laboratory and the University of California.

"What is surprising is this increased contribution by the ice sheets is already happening," he said.

Under the current trends, he said, sea level is likely to be "significantly higher" than levels projected by the UN climate change panel in 2007.

Isabella Velicogna, co-author of the study, said that the ice sheets lose mass by melting or by breaking apart in blocks of ice, which float into the ocean.

"It's related to the warming of the planet but that was not the point of the paper. We just observed the changes," said Velicogna, a professor at UC.

"It's losing mass - much more than was expected many years ago."

The study showed that in 2006, a year in which comparable results for loss from mountain glaciers and ice caps are available, the Greenland and Antarctic ice sheets lost enough mass to raise global sea level by an average of 1.3mm per year.

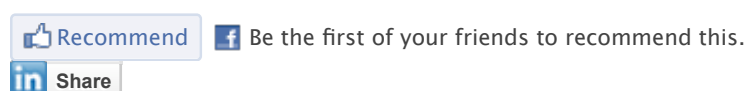
The year-on-year acceleration rate of loss on mountain glaciers and ice caps was three times smaller than that of the ice sheets, the study said.

"The authors conclude that, if current ice sheet melting rates continue for the next four decades, their cumulative loss could raise sea level by 15cm by 2050," the report said.

"When this is added to the predicted sea level contribution of 8cm from glacial ice caps and 9cm from ocean thermal expansion, total sea level rise could reach 32cm," it said.

The findings were published the March edition of *Geophysical Research Letters*.

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