**NEWS FROM THE UNIVERSITY OF TASMANIA, AUSTRALIA and CSIRO OCEANS AND ATMOSPHERE FLAGSHIP**

# Media Release

## Chiefs of Staff, News Directors

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# New analysis shows sea level rising faster

Research led by the University of Tasmania has revealed a more accurate picture of sea level rise in the satellite era, showing that it is in fact accelerating.

Analysing satellite data from 1993 to 2014, the team of scientists from the University and CSIRO used tide gauge data and GPS measurements of land movement to refine the satellite record.

The analysis found and corrected small inaccuracies in the existing satellite data, with results published today in *Nature Climate Change*.

Lead author on the research paper, Dr Christopher Watson from the University's School of Land and Food, said the satellite measurements of global mean sea level provide a seminal climate record.

"This information is vital as communities around the world plan and respond to our changing climate," Dr Watson said.

"Previously, it was clear that the rate of rise over the past 20 years was roughly double the rate determined over the past century – what was curious was that the rate appeared slower in the last decade relative to the one before.

"That slowing has puzzled scientists because it coincides with an increase in water entering our oceans from Greenland and West Antarctica."

Dr Watson said the research had highlighted a small overestimation of the sea level rise in the period from 1993 to 1999, which had been distorting the apparent trend.

The three core findings from the study were that:

- Seas have risen faster since 1993 relative to the slower rate over previous decades.
- After allowing for land motion at the tide gauges, the first six years of the satellite record was found to marginally overestimate the sea-level trend. The team's revised estimate of global mean sea level rise for the satellite era (1993 to mid-2014) is approximately 2.6-2.9 mm per year (the exact value depends on how land motion is estimated), slightly less than the previous estimate of 3.2 mm per year.
- The revised record suggests the rate of rise has actually increased over the satellite era (within the period 1993 to mid-2014). However, sea level varies from year to year as water is

exchanged between the land and sea in events like the Australian floods in 2011 and as a result, the observed increase in the rate of rise is not yet statistically significant.

“Unlike the previous slowing, an estimate of acceleration is striking in that it is consistent with the projections of future sea level published by the Intergovernmental Panel on Climate Change,” Dr Watson said.

Co-author, Dr John Church from CSIRO said that projections are for up to a 98 cm rise by 2100 if global greenhouse gas emissions are allowed to continue unabated.

“The projections reduce to a rise of between 28 and 61 cm if we follow paths that include very stringent mitigation of global emissions.”

“Rising sea levels will place increasing stress on the coastal zone – inundation events will become more frequent and adaptation will need to occur,” Dr Watson said.

“Agencies need to consider the impacts of accelerating sea levels and provide communities with advice and planning directions that are commensurate with the magnitude of the problem.

“Australia is reliant on other countries for launching and maintaining satellite missions such as those used in our study. We provide an important contribution to the long-term monitoring of satellite data through Australia’s Integrated Marine Observing System.”

The paper, ‘Unabated global mean sea-level rise over the satellite altimeter era’ can be viewed here: http://dx.doi.org/10.1038/nclimate2635.

An accompanying piece in *The Conversation* can be viewed here: http://theconversation.com/sea-level-is-rising-fast-and-it-seems-to-be-speeding-up-39253

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