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New analysis shows sea level rising faster

University of Tasmania researchers have shown that the rate of sea level rise has accelerated since the satellite era, showing that it is in fact accelerating.

Analysing satellite data from 1993 to 2014 in the context of climate change, the team used tide gauge data and GPS measurements of land movement to refine the satellite record.

The analysis found a much smaller increase in accuracy in the 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 22 years was only half the rate determined over the past century – with the rate appearing slower in the last decade relative to the one before."

"This puzzled scientists because tide gauges within 100km of water entering our continent show a much faster rate of rise over the past 100 years."

Dr Watson said the research had highlighted a small overestimation of the sea level rise in the period 1993 to 2009.

satellite era, over previous

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 3.0 mm per year previously estimated.

The revised record shows that sea level actually increased over the satellite era (within the period 1993 to mid-2014). However, sea level rise is not uniform over the entire

~~accelerated rate of sea level rise since 2003 to the Australian coastline in 2014 and Dr~~
result. the observed increase in the rate of rise is not yet statistically significant

“ estimate of acceleration is still small but it is consistent with the projections of future sea level rise published by the Intergovernmental Panel on Climate Change ” Dr Watson said.

Co- 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 coastal ecosystems and will have more frequent and adaptation will need to occur.” Dr Watson said.

“Agencies need to consider the impacts of accelerating sea levels when making decisions about coastal planning and infrastructure.”

“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
<http://dx.doi.org/10.1038/nclimate2635>.