

Southern sea levels rise drastically

April 12 2012

(Phys.org) -- Sea levels have risen about 20cm in the South West Pacific since the late 19th century, a new scientific study shows.

Sea levels in Tasmania remained relatively stable for much of the past 6000 years but around 1880 they started rising drastically, said Dr Patrick Moss from the School of [Geography](#), Planning and [Environmental Management](#) at The University of Queensland.

Between 1900 and 1950, relative sea level rose at an average rate of 4.2 mm per year.

“Overall the rate of 20th century sea level rise reconstructed from our data is 1.5 mm per year,” said Dr Moss, who co-wrote a report on the study with scientists from Plymouth University (UK), the Victoria University of Wellington (NZ), Queens University Belfast (UK), the University of Tasmania and University of Southampton (UK).

The highest rates of sea level rise occurred in the 1910s (.3 - .8 mm per year) with a second peak in the 1990s.

“The rise in 1910 probably reflects the end of the little ice age, when temperatures were about one to two degrees cooler in the northern hemisphere than today,” Dr Moss said.

“The 1990s peak is most likely indicative of human-induced climate change.”

The study used sediment cores from Tasmania's salt marshes to reconstruct a record of past sea levels.

“The surface of the marshes builds up over time in response to tidal inundation, providing an accurate record for sea level change,” Dr Moss said.

“Sea level observations in Australia only go back as far as European settlement.

“By comparing our measurements to official observations we can look at long-term changes in sea levels.”

Sediment layers in the core samples also provided physical evidence of the start of logging in Tasmania, when nuclear testing was at its peak globally, and the introduction of unleaded petrol.

Dr Moss said an accurate measurement of past sea levels had significant implications for understanding sea level rise under a changing climate.

“Any drastic changes from the norm, which persist for several decades and over a wide area, represent important climate signals,” Dr Moss said.

“This in turn has implications for where we build our cities and infrastructure.”

The results of the study, published in [Earth and Planetary Science Letters](#), indicate that the magnitude of sea level rise is much higher in the South West Pacific than elsewhere on the planet and that this could be attributed to ice-melt from sources in the northern hemisphere.

“A large ice-melt is like a fingerprint,” Dr Moss said. “When such a significant mass shifts around the earth's surface we can detect its

movement.

“Based on this, it appears likely that the primary source of sea level rise in the Southern Hemisphere is the Greenland Ice Sheet, but also mountain glaciers in Alaska, western North America and the Canadian Arctic.”

The group of scientists will do further research in [Tasmania](#) and the South Island of New Zealand, with the aim of creating a more complete picture of the extent of [sea-level](#) rise in the South West Pacific.

Provided by University of Queensland

Citation: Southern sea levels rise drastically (2012, April 12) retrieved 25 April 2024 from <https://phys.org/news/2012-04-southern-sea-drastically.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.