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Sea levels to rise at double expected rate: evidence mounts

Scientists have presented new evidence that strengthens the likelihood that global sea levels will rise at double the rate predicted by the United Nations Intergovernmental Panel on Climate Change.

Delivering a keynote presentation at the *Australian Earth Sciences Convention* in Canberra, Professor Tim Naish, Director of Antarctic Research Centre at the Victoria University of Wellington in New Zealand said new data supports predictions that global sea levels will rise by one metre or more by the end of the century, not the half a metre upper limit as reported by the climate change panel.

“Rising sea levels will have a significant impact on coastal communities globally, as 150 million people live within one metre elevation of sea level,” he said.

Professor Naish is part of an international collaboration of scientists drilling sediment cores from Antarctica’s seafloor. His research team has taken sediment cores from next to the West Antarctic Ice Sheet, an unstable polar ice sheet considered to be highly sensitive to rising temperatures.

These sediment cores are providing scientists with information on Antarctica’s ice sheet and climate history over the past 10 million years. Along with other geological and geophysical data, they provide information on a warmer period in the planet’s history when there was no ice on west Antarctica at all. Professor Naish said scientists believed this period coincided with a time when the planet was two to three degrees Celsius warmer than it was today.

“Given many climate models predict the planet will warm by the same two to three degrees over the next 50 to 100 years, scientists need to urgently understand how temperature changes will affect the polar ice sheet and the speed of likely change,” he said. “A couple of degrees of temperature change can lead to quite dramatic changes across the world.”

In a related presentation, University of Queensland researcher, Dr Kevin Welsh has presented preliminary data from sediment cores that were drilled during an international expedition to the coast of Wilkes Land, which is part of the Australian sector of East Antarctica. The purpose of this work is to reconstruct the history of the East Antarctic Ice Sheet from its inception approximately 34 million years ago to its present size.

“The poles are an important cog in the climate system. Giant ice sheets on Antarctica behave like mirrors, reflecting the sun’s energy and moderating the world’s temperatures,” he added. “The waxing and waning of these ice sheets contributes to changes in sea level and can affect ocean circulation, which affects the climate by transporting heat around the planet.”

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Dr Welsh went on to say that the East Antarctic Ice Sheet is known to hold most of the world's fresh water and would have an even greater effect on sea levels if it were to melt. The data from the sediment cores would be used to understand how dynamic the ice sheet is and to help create more accurate climate models for predicting future trends.

"The best way to predict what will happen in the future is to better understand what has happened in the past," he said.

Ends

Issued on behalf of the Geological Society of Australia by Connection Communications. For further information or to arrange an interview with Prof Tim Naish or Dr Kevin Welsh, please call Maria Padua on 0419 200 935.