



## Media Release

### Tasmanian researchers to map the Australian coastline's sensitivity to rising sea levels

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In a global first, researchers from the University of Tasmania's School of Geography and Environmental Studies will assess and map the Australian coastline's sensitivity to sea level rise, on behalf of the Australian Greenhouse Office and Geoscience Australia.

The Chief Executive of UTAS Innovation LTD, Tony Baker said Australia would most likely be the first entire continent to have such an assessment carried out.

"Sea levels have risen by 10 to 20 cm around the globe over the past century, after staying stable for 6000 years.

"Softer and low lying coastal areas around the world are now at unprecedented risk of flooding and erosion, so governments can determine which areas are most at risk for future planning.

"What is really exciting is that techniques developed in Tasmania to map the Tasmanian coastline will be used for this initial national assessment." Mr Baker said.

For the assessment, an electronic map of the entire Australian coastline will be produced that shows the locations of all shorelines sensitive to sea level rise.

The map will be in the form of a "Smartline" geographic information system (GIS) which will enable rapid interrogation and extraction of information.

Geomorphic (land form) maps already exist for most of the Australian coast, but unfortunately these have been prepared for a range of purposes and are in a mix of paper and electronic formats, at differing scales, resolutions and geomorphic or geological classification schemes.

For the first time, all the existing information will be put into a consistent scheme, so sections of coastline can be compared and analysed on the same basis.

The team of researchers will be working through the University's commercial arm, UTAS Innovation Ltd., and will be led by Mr Chris Sharples (coastal geomorphologist) and Dr Richard Mount (GIS and remote sensing specialist).

The team will be working in the University's School of Geography and Environmental Studies and the head of the school, Dr Elaine Stratford, said Chris Sharples developed the "Smartline" GIS line map format to prepare geomorphic and coastal vulnerability maps of the Tasmanian coastline.

"The geomorphic classification used for the Tasmanian map will be modified and adapted to capture the broad range of mainland Australian coastal types, and will be peer-reviewed in a national workshop prior to final application to the national map." Dr. Stratford said.

In Tasmania, the sea level has increased by 14 cm since it was first measured at Pt Arthur in 1840.

Chris Sharples said, over the last decade, very sensitive satellite measurements have shown that sea levels are continuing to rise.

"Sandy beaches, tidal flats and sand dunes are losing their capacity to recover from severe erosion events during storms.

"They will become more and more vulnerable to erosion in storms, like the one in June that left beachfront buildings at Narrabeen Beach in New South Wales perched on a sand cliff." Mr Sharples said.

Additional components of the National Shoreline Geomorphic and Stability Mapping Project include tagging the map with beach numbers to enable the map to be linked directly to the Australian Beach Safety and Management Program (ABSAMP) database maintained by Surf Life Saving Australia (SLSA).

The final nationally consistent coastal geomorphic and stability map will be a critical component of a major national study being undertaken by the Australian Greenhouse Office to conduct a 'first pass' national coastal vulnerability assessment. The assessment will determine where coastal infrastructure and ecosystems will be most at risk from climate change. The information from this study will be available on Geoscience Australia's website through their OzCoasts portal next year.

[www.ozcoasts.org.au](http://www.ozcoasts.org.au)

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For more information contact Richard Gerathy on 0419 203 075.

## ***Questions and Answers***

### **What is the timeframe for the project?**

The project has commenced and should conclude in February 2008.

### **Will the team be physically mapping the Australian Coastline?**

The primary task for the project is to identify the various geomorphic mapping datasets which have been previously created for various parts of the Australian coast, to extract or translate the relevant geomorphic data from each into a single nationally-consistent geomorphic classification scheme, and to combine these into a single national map.

### **What is the advantage of using the “Smartline” mapping technique?**

This mapping format, whilst not providing some of the advantages of polygon or grid maps, has its own important advantages including the ability to allow rapid capture of multiple-attribute information which can be very spatially-detailed in the along-shore direction, and the ability to be readily interrogated (e.g., by GIS queries) to provide a wide range of information such as the identification of sensitive (“potentially unstable”) shoreline segments.

### **Will the new map have a consistent scale?**

Whilst the scale and resolution of the resulting nationally-consistent map will vary depending on the scale and availability of pre-existing geomorphic mapping of different parts of the Australian coast. The critical advantage of the map will be the provision, for the first time, of a seamless coastal geomorphic map of the whole Australian coastline, which is classified in a single nationally-consistent way.