

**Senate Standing Committee on Economics**  
**ANSWERS TO QUESTIONS ON NOTICE**  
Innovation, Industry, Science and Research Portfolio  
Additional Estimates Hearing 2009-10  
10 February 2010

---

**AGENCY/DEPARTMENT:** OFFICE OF THE CHIEF SCIENTIST

**TOPIC:** Sea Levels

**REFERENCE:** Question on Notice (Hansard, 10 February 2010, E65)

**QUESTION No.:** AI-102

**Senator McGAURAN**—Two more icons—the Murray River and sea levels—have fallen over. Do you now accept what the CSIRO now accepts: that the jury is out with regard to climate change affecting the water shortages and all the problems that come with the Murray-Darling Basin?

**Prof. Sackett**—I think that it is well known that there are a variety of factors that affect the Murray-Darling Basin and I am not aware—

**Senator McGAURAN**—But climate change is not one.

**Prof. Sackett**—that the CSIRO has ever said anything other than that.

**Senator McGAURAN**—I think you said that sea levels were rising when there is, I would say, more authoritative scientific understanding that it is not. This understanding is by the Swedish geologist and former president of a sea level commission—I am surprised there is one—Nils-Axel Morner. Do you know of his scientific pitch, that the sea levels are not rising?

**Prof. Sackett**—I do not know of his scientific pitch. If it has been in a peer reviewed article I would be pleased to take that on board. The evidence of which I am aware makes it abundantly clear that sea-level rise is happening. In fact, these measurements can be made quite precisely nowadays.

**ANSWER**

***CSIRO and climate change***

My Office has been in direct contact with Dr David Post, the CSIRO scientist who was interviewed by The Canberra Times following the release of the CSIRO report ‘The science of tackling climate change’.<sup>1</sup> CSIRO’s projection in this report states that the frequency and extent of droughts in southern Australia will increase. Further, CSIRO states that it is difficult to determine with certainty how much of the drying of the last decade is attributable to human activities.

While Dr Post specifically referred to findings in Tasmania during the interview, he has indicated that these findings can be equally applied to the drought in the Murray Darling Basin.

---

<sup>1</sup> The science of tackling climate change, 2009, CSIRO

### *Sea level rising*

The observation that sea levels are rising is documented in numerous peer-reviewed publications, including those by Australian experts<sup>2</sup>. Church and White (2006)<sup>3</sup> analysed both tide-gauge records and satellite altimeter data to reconstruct sea levels from 1870 to 2004. Their work shows a rise in global mean sea level of 195 mm during this period. Their findings also indicate a significant acceleration of sea level rise, calculating that if this acceleration were to remain constant it would lead to a rise in the range of 280 to 340 mm over the period 1990 to 2100.

Scientific rebuttal of Dr Mörner's claim<sup>4</sup> that sea levels are not rising is based on the fact that Dr Mörner did not take into account correctly calibrated satellite altimeter records, all of which indeed demonstrate that sea levels are rising.<sup>5</sup>

---

<sup>2</sup> Woodworth et. al, 2009, Evidence for the accelerations of sea level on multi-decade and century timescales, *International Journal of Climatology*, 29, 777-789.

<sup>3</sup> Church, J.A. and White, N.J., 2006, A 20<sup>th</sup> century acceleration in global sea-level rise, *Geophys. Res. Lett.*, 33, L01602

<sup>4</sup> Mörner, N., 2004, Estimating future sea level changes from past records, *Global and Planetary Change*, 40, 49-54

<sup>5</sup> Nerem et. al., 2007, Comment on "Estimating future sea level change from past records" by Nils-Axel Mörner, *Global and Planetary Change*, 55, 358-360