

**Senate Standing Committee on Economics**

**ANSWERS TO QUESTIONS ON NOTICE**

Resources, Energy and Tourism Portfolio

Additional Budget Senate Estimates

23 February 2011

**Question:** AR12  
**Topic:** Seismic Testing – Impact on Scallops  
**Proof Hansard Page:** E89

**Senator Colbeck asked:**

**Senator COLBECK**—I have some very quick questions about some research that was conducted in Bass Strait recently. There have been some allegations around impact on scallops. Just to get my hierarchy straight, it was funded by the Commonwealth through Geoscience Australia. It was approved by Tasmania through their auspices. It was conducted by the Victorian government. So they are effectively the three entities that were involved in that process?

**Dr Pigram**—I think that is correct, Senator.

**Senator COLBECK**—What research are you aware of on the public record—or are you aware of, I suppose—in relation to the potential impacts on scallops of seismic testing?

**Mr Squire**—Senator, there is a study on the public record that was undertaken by Exxon Mobil back in 2003-04, from memory, which was a study of the potential impact of seismic operations on the mortality of scallops.

**Senator COLBECK**—So 2003?

**Mr Squire**—I will take the question on notice in terms of the exact date of that study, but that is my recollection.

**Senator COLBECK**—And what is your recollection of the results of that study?

**Mr Squire**—The conclusions from that study indicated that there was no increased mortality impact on scallops as the result of seismic operations.

**Senator COLBECK**—Over what time frame was the study taken? Was it taken in the immediate time frame around the seismic testing or was there any longer tail to the research?

**Mr Squire**—I will take that question on notice if that is okay. I do not recall all of the details of the study.

**Senator COLBECK**—I am more than happy to read a report. If you can, perhaps as part of that question, direct me to a website or somewhere where I might be able to pick up that report.

**Mr Squire**—Certainly. There has been a more recent study as well as a result of the issues experienced towards the end of last year, and we will certainly look to see whether we can provide that to you as well.

**Senator COLBECK**—But my understanding is that that was taken, again, over a short time frame. I think it was somewhere around six weeks before, during and after the seismic testing. And from the information I have been given, the allegations of impact did not manifest themselves within that the time. I am aware of that report that indicates not much impact, but from the information I have been given the impact has manifested itself over a longer period of time. Is that—

**Mr Squire**—I will take those elements on notice.

**Answer:**

What research are you aware of on the public record?

**Study:** ExxonMobil (subsidiary ESSO Australia) undertook a scientific study on the effects of seismic testing on the mortality of scallops. The study entitled '*Assessment of environmental effects of seismic testing on scallop fisheries in Bass Strait*' was released in July 2002 and was conducted by the Marine and Freshwater Resources Institute. The study was conducted from December 2001 to February 2002 with biological sampling of mature adult scallops being collected on the morning of 4 February 2002.

The study concluded that seismic testing had no discernable effect on the mortality rate and adductor muscle strength of scallops. Similarly there was no significant difference in the abundance of plankton (including bivalve larvae) as a result of seismic testing.

References : Parry, G.D., Heislors, S., Werner, G.F., Asplin, M.D. and Gason, A. (2002) Assessment of environmental effects of seismic testing on scallop fisheries in Bass Strait. Marine and Freshwater Resources Institute Report No. 50. Marine and Freshwater Resources Institute: Queenscliff.

**Study:** The Tasmanian Aquaculture and Fisheries Institute undertook a study, funded by the Australian Fisheries Management Authority entitled '*Assessing the short-term impact of seismic surveys on adult commercial scallops (*Pecten fumatus*) in Bass Strait*' which was released in November 2010. This study conducted a "before and after" control impact study on the short term effects of seismic surveying on adult commercial scallops between February and June 2010.

The study concluded that there was no short term (<2 months) impacts on the survival or health of adult commercial scallops post the seismic survey.

References and website details: Harrington, J.J, McAllister, J. and Semmens, J.M. (2010) Assessing the short-term impact of seismic surveys on adult commercial scallops (*Pecten fumatus*) in Bass Strait. Tasmanian Aquaculture and Fisheries Institute: University of Tasmania.

<http://www.afma.gov.au/wp-content/uploads/2010/12/Assessing-the-short-term-impact-of-seismic-surveys-on-adult-commercial-scallops-in-Bass-Strait.pdf>

**Study:** The longer term effects of seismic discharges on marine fauna were examined in a study conducted by the Department of Primary Industries entitled *'The effect of seismic surveys on catch rates of rock lobsters in western Victoria, Australia'* released in March 2006.

Seismic surveys use sound waves produced by acoustic sources to establish the geological structure beneath the ocean floor. Since 1970 all seismic surveys in Australia have used airguns which generate a lower maximum pressure. This in turn causes a lower rate of pressure change with lethal rates of pressure change only likely within a few metres of an airgun array. As a result only organisms with compressible structures such as gas filled organs (swim bladders), lungs and ears are likely to be affected by the sound waves produced during a seismic survey. Most invertebrates, including scallops, do not contain gas filled organs and are therefore more resistant to explosive pressures.

The study concluded that there was no evidence of any effects on catch rates or increased mortality of rock lobsters (or scallops) following 33 seismic surveys conducted between 1978 and 2004.

References and website details: Parry, G.D. and Gason, A. (2006) The effect of seismic surveys on catch rates of rock lobsters in western Victoria, Australia. Marine Freshwater Systems. Department of Primary Industries: Queenscliff.  
[http://www.anp.gov.br/brnd/round9/round9/guias\\_R9/sismica\\_R9/Bibliografia/Parry%20and%20Gason%202006%20-%20seismic%20x%20catch%20rates%20of%20rock%20lobsters.pdf](http://www.anp.gov.br/brnd/round9/round9/guias_R9/sismica_R9/Bibliografia/Parry%20and%20Gason%202006%20-%20seismic%20x%20catch%20rates%20of%20rock%20lobsters.pdf)