



## MEMORANDUM OF SUPPORT

### FEDERAL OCEAN ACIDIFICATION RESEARCH AND MONITORING ACT OF 2007 OR FOARAM ACT

S. 1581 LAUTENBERG/CANTWELL

H.R. 4174 ALLEN

#### JUSTIFICATION

Global warming is threatening our oceans by increasing ocean temperatures, raising sea levels, and changing our ocean's chemistry. Since the Industrial Revolution our oceans have absorbed billions of tons of greenhouse gases, which is shifting the ocean's basic chemistry. This change is known as Ocean Acidification.

Our oceans naturally serve as a carbon dioxide sink. The chemical reaction between carbon dioxide and seawater forms carbonic acid, which decreases carbonate ions (also known as calcium carbonate) in the waters, a key building block of marine animal shells. Calcium carbonate is essential for crustaceans to build their shells, such as mussels, clams, lobsters, and crabs. Calcium carbonate is also essential for corals to survive. Scientist predicts that raising acidity levels in our oceans can literally dissolve ecologically important coral reefs<sup>1</sup>. **As the oceans become more acidic carbonate ions will become scarcer, jeopardizing our shellfish and coral reefs, marine creatures at the bottom of the food chain, and ultimately our fisheries.**

**Ocean acidification poses significant negative impacts on marine life that will create adverse consequences for coastal economies dependent upon fishing, tourism, and related activities.**

The average acidity (pH) of the ocean is presently just above 8. The sea absorbs 22-25 million tons of CO<sub>2</sub> each day. The past two centuries of industrialization resulted in decreasing the ocean's pH by 0.1 unit. If this pattern continues, the Intergovernmental Panel on Climate Change (IPCC) predicts ocean pH will decline further up to 0.35 by the end of the century. The more acidic water is, the slower calcification occurs; which weakens calcium carbonate-dependent sea life. And at higher CO<sub>2</sub> concentrations the mussel shell even dissolves (greater than 1800ppmv). By 2100, mussels are expected to calcify their shells 25 percent slower than currently (~740ppmv); oysters, 10 percent slower, expected to result in lower shellfish yields. Mussels and oysters represent a large

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<sup>1</sup> McAuliffe, Kathleen, "Ocean Reflux", Discover. 2008 July: pg 28-37.

part of worldwide aquaculture production<sup>2</sup>. Long Island Sound generates \$8.5 billion annually to New York and Connecticut that includes the interconnected shellfish and tourism industries.

**Shellfish are a valuable and healthy food source and also shape the maritime culture of the region. Ocean acidification threatens the shellfish of Long Island Sound and therefore the economy of the region.**

Increasing human understanding of ocean acidification through science is essential to informing sound policies to address this harmful impact from global climate change. This legislation empowers NOAA to develop a specific program on ocean acidification, to increase our knowledge base to inform mitigation and adaptation approaches to conserve marine ecosystems.

## **SUMMARY OF PROVISIONS**

- Establishes the Interagency Committee on Ocean Acidification to oversee the planning, establishment, and coordination of a plan to improve the understanding of the role of increased ocean acidification on marine ecosystems.
- Charges the Interagency Committee on Ocean Acidification to develop adaptation techniques to effectively conserve marine ecosystems as they adapt with ocean acidification.
- Requires a triennial report to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology of the House of Representatives containing a summary of federally funded ocean acidification research and monitoring activities, an analysis of the progress made toward achieving certain goals and priorities, and recommendations for future activities, including policy recommendations.
- Requires the Committee to develop a strategic research and implementation plan for coordinated federal activities.
- Directs the Secretary of Commerce to establish and maintain an ocean acidification program within the National Oceanic and Atmospheric Administration (NOAA) to implement such strategic research and implementation plan.
- Authorizes appropriating \$30 million to NOAA for 2008-2012 to carry out this Act.
- Requires that, of appropriations made available to carry out this Act: (1) the Secretary of Commerce make at least 60% available to other departments and agencies; and (2) at least 50% be allocated for competitive grants.

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***Citizens Campaign for the Environment  
Strongly Supports the Federal Ocean Acidification Research and Monitoring Act  
of 2007 (H.R. 4174 / S. 1581).***

**[www.citizenscampaign.org](http://www.citizenscampaign.org)**

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<sup>2</sup> Netherlands Institute of Ecology (2007, March 19). Ocean Acidification Predicted To Harm Shellfish, Aquaculture. *ScienceDaily*. Retrieved July 18, 2008, from <http://www.sciencedaily.com/releases/2007/03/070318133722.htm>