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ONE HUNDRED TWELFTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON ENERGY AND COMMERCE
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September 14, 2012

The Honorable Fred Upton
Chairman
Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Ed Whitfield
Chairman
Subcommittee on Energy and Power
Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Upton and Chairman Whitfield:

On March 21, 2012, we sent you a letter requesting that you hold a hearing on the rapid acidification of the world's oceans due to rising carbon dioxide emissions. We have not received a response to that letter. Today, we are writing again to urge you to hold a hearing on the impacts of global climate change on the world's oceans and the marine life that depend on them.

As we explained in our previous letter, when carbon dioxide enters the oceans too quickly, the oceans can acidify and damage sensitive marine ecosystems and species, particularly those that rely on shells to survive. Scientists from Stanford and the University of California at Santa Cruz recently linked ocean acidification to a mass extinction that occurred 250 million years ago. The scientists studied marine fossils from the Permian extinction period and concluded that the release of carbon dioxide into the atmosphere altered the acidity of the world's oceans, devastating coral and other shelled marine animals.[1] The authors identified

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[1] *Life in the Sea Found Its Fate in a Paroxysm of Extinction*, New York Times (Apr. 30, 2012); Jonathan L. Payne and Matthew E. Clapham, *End-Permian mass extinction in the oceans: an ancient analog for the 21st century?*, Annual Reviews of Earth and Planetary Sciences, vol. 40 at 89-111 (May 2012); Jonathan L. Payne and Matthew E. Clapham, *Acidification, anoxia, and*

similar sobering trends in today's ocean chemistry as human activities "push environmental conditions to extremes not experienced in the recent past."[2]

Some of these adverse impacts may already be occurring. Scientists recently linked ocean acidification to the rapid decline in oyster production off the coasts of Washington and Oregon. Researchers from Oregon State University and the National Oceanic and Atmospheric Administration's Pacific Marine Environmental Laboratory studied oysters at an Oregon hatchery that had reported an 80% decline in oyster production in recent years. They found that the acidic water inhibits larval oysters from developing their shells during the first day of life, slowing their growth or killing them outright.[3] One of the report's authors said that oysters are the "'canaries in the coal mines' for ocean acidification. When the CO_2 levels in the ocean are too high, they die; when we lower the CO_2 levels, they live."[4]

Warming oceans may also be affecting larger marine mammals, including the critically endangered North Atlantic right whale. Some scientists have suggested that warmer waters and melting Arctic sea ice already have altered the right whales' feeding grounds and depleted important food supplies. This food scarcity may have contributed to a disappointing calving season this year. Several adult right whales seen off the coast of Cape Cod have shown signs of malnourishment.[5]

Climate change is harming other marine species as well. Many scientists have expressed alarm at the global decline of coral reefs, which they believe is being exacerbated by climate change.[6] Scientists also recently studied a salmon population in a stream near Juneau, Alaska

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extinction: A multiple logistic regression analysis of extinction selectivity during the Middle and Late Permian, Geology, vol. 39 at 1059-1062 (Nov. 2011).

[2] Jonathan L. Payne and Matthew E. Clapham, *End-Permian mass extinction in the oceans: an ancient analog for the 21st century?,* Annual Reviews of Earth and Planetary Sciences, vol. 40 at 89-111 (May 2012).

[3] Alan Barton, Burke Hales, George G. Waldbusser, Chris Langdon and Richard A. Feely, *The Pacific oyster, Crassostrea gigas, shows negative correlation to naturally elevated carbon dioxide levels: Implications for near-term ocean acidification effects*, Limnology and Oceanography, Vol. 57(3), 698-710 (2012); National Science Foundation, *Ocean Acidification Linked With Larval Oyster Failure in Hatcheries* (Apr. 11, 2012) (press release).

[4] *Study Links Raised Carbon Dioxide Levels to Oyster Die-Offs*, New York Times (Apr. 12, 2012)

[5] *Scientists worry that warming seas may be harming the endangered right whale*, Washington Post (Apr. 30, 2012).

[6] International Coral Reef Symposium, *Consensus Statement on Climate Change and Coral Reefs* (online at http://www.icrs2012.com/Consensus_Statement.htm) (accessed Aug. 5, 2012).

and concluded that warmer waters are forcing changes to the population's reproductive and migratory patterns.[7]

Another recent study indicates that climate change could have negative impacts on deep sea marine life which was once thought to be buffered from the effects of climate change.[8] According to one of the study's authors, "Changes in temperature and food availability associated with climate change could cause widespread extinction in the deep ocean if environmental changes occur faster than deep-sea organisms can respond by shifting their ranges or adapting to new conditions."[9]

Global climate change has the potential to cause radical changes in the world's oceans and its ecosystems, including those that provide food for humans and support local economies. We urge you to schedule a hearing on this matter as soon as possible.

Sincerely,

Henry A. Waxman
Ranking Member

Bobby L. Rush
Ranking Member
Subcommittee on Energy and Power

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[7] *Alaskan Salmon Evolve Along With the Climate*, New York Times (July 16, 2012).
[8] Craig R. McClain, Andrew P. Allen, Derek P. Tittensor, and Michael A. Rex, *Energetics of life on the deep seafloor,* Proceedings of the National Academy of Sciences (Sept. 4, 2012)(online at http://www.pnas.org/content/early/2012/08/30/1208976109).
[9] *New study examines how ocean energy impacts life in the deep sea*, Phys.org (Sept. 5, 2012) (online at http://phys.org/news/2012-09-ocean-energy-impacts-life-deep.html).