



NExUS Ongoing Projects and Activities Fri Nov 16 02:46:07 EST 2018

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| Name          | Ocean Acidification, Hypoxia and Warming: Experimental Investigations into Compounded Effects of Global Change on Benthic Foraminifera   |
| Description   | Excerpted from project summary at nsf.gov: This research, led by a scientist from the Woods Hole Oceanographic Institution, studies the compounded effects of ocean acidification, hypoxia, and warming on an assemblage of benthic foraminifera collected from the continental shelf off New England. Foraminifera are an ideal organism for this work because they (1) are relatively small, allowing experimentation on statistically significant populations; (2) have both calcareous and non-calcareous representatives; (3) are relatively short-lived so experiments include a major portion of their life cycle; (4) include aerobes and anaerobes; and (5) provide a fossil record allowing comparisons across time. Laboratory culturing experiments will be used to determine the response of benthic foraminifera, in terms of survival and growth, to co-varying parameters of pH and oxygen, and to explore the influence of increased temperature on these responses. The researchers will examine the relative effects of higher pCO <sub>2</sub> , lower [O <sub>2</sub> ], and higher temperature (T) on both calcareous and non-calcareous benthic foraminifera. In addition, they will examine the pre-Industrial benthic foraminiferal assemblage at the field site, and will compare that assemblage to those produced in the experiments under pre-Industrial (lower than current day) and elevated pCO <sub>2</sub> levels. |
| Sector        | <ul style="list-style-type: none"> <li>- Managed Ecosystems</li> <li>- Natural Ecosystems</li> <li>- Biota</li> </ul>  |
| Focus Area    | - Sustainability of Marine Ecosystems  |
| Region        | <ul style="list-style-type: none"> <li>- National</li> <li>- Regional Or State -- New England -- Mid-Atlantic -- South East</li> </ul>   |
| Status        | - Ongoing  |
| Timelines     | 2012-1015 (estimated)  |
| Lead Agencies | National Science Foundation (NSF) Division of Ocean Sciences (OCE), Directorate for Geosciences (GEO); Woods Hole Oceanographic Institution, Woods Hole, MA  |
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