# Scientific sampling event log from R/V Endeavor cruise EN524 along the continental shelf of New England in 2013 (OA, Hypoxia and Warming project)

**Website**: https://www.bco-dmo.org/dataset/3953
**Data Type**: Cruise Results
**Version**: 1
**Version Date**: 2013-05-24

**Project**
» Ocean Acidification, Hypoxia and Warming: Experimental Investigations into Compounded Effects of Global Change on Benthic Foraminifera (OA, Hypoxia and Warming)

**Program**
» Science, Engineering and Education for Sustainability NSF-Wide Investment (SEES): Ocean Acidification (formerly CRI-OA) (SEES-OA)

| Contributors | Affiliation | Role |
|---|---|---|
| Bernhard, Joan M. | Woods Hole Oceanographic Institution (WHOI) | Chief Scientist |
| Rauch, Shannon | Woods Hole Oceanographic Institution (WHOI BCO-DMO) | BCO-DMO Data Manager |

**Abstract**
Scientific sampling event log from R/V Endeavor cruise EN524 along the continental shelf of New England in 2013.

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## Coverage

**Spatial Extent**: **N**:41.4922 **E**:-70.4825 **S**:40.4292 **W**:-71.4188
**Temporal Extent**: 2013-05-19 - 2013-05-22

## Dataset Description

Log of instrument deployments and significant events during the EN524 cruise on R/V Endeavor from 5/19/2013 to 5/22/2013.

### Methods & Sampling

The science party used the R2R event logger (DreamPlug version Release 2.1.16 compiled on May 3 2013 at 14:58:12) to record instrument deployments. The original event log and other underway data submitted by the vessel operator will be available from the NSF R2R cruise catalog: http://www.rvdata.us/catalog/EN524

The final event was entered by the marine technician at the end of the cruise to note when the science

seawater flow-through system was stopped, the SBE21 thermosalinograph (TSG) logging was stopped (at around 13:57 UTC), and the system was flushed with fresh water.

### Data Processing Description

depth_w and depth_instr_max values were added by Chief Scientist post-cruise.

BCO-DMO made the following modifcations:
- Modified parameter names;
- 'NaN' and blanks were replaced with 'nd' to indicate no data;
- lat and lon formatted to 4 decimal places;
- Separated the original date-time parameter into month_utc, day_utc, year, and time_utc columns;
- Removed trailing '.001' from all event numbers;
- Removed testing events logged prior to the start of the cruise;
- Added 'sci_event' column, containing the science party's event numbers as recorded in the 'comment' column.

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## Data Files

| File |
|---|
| **EN524_eventlog.csv** (Comma Separated Values (.csv), 7.51 KB)<br>MD5:2983ec543ab9a47dc6ebff668048320e<br>Primary data file for dataset ID 3953 |

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## Parameters

| Parameter | Description | Units |
|---|---|---|
| event | ID number for the event; YYYYmmdd.HHMM | unitless |
| sci_event | Event number designation provided by science party. | integer |
| instrument | Name of instrument. | dimensionless |
| action | Activity performed with the instrument. | dimensionless |
| month_utc | 2-digit month of year (UTC) in mm format | unitless |
| day_utc | 2-digit day of month (UTC) in dd format. | unitless |
| year | 4-digit year of the cruise in YYYY format | unitless |
| time_utc | Time (UTC) in HHMM format that the event took place | unitless |
| ISO_DateTime_UTC | Date/Time (UTC) formatted to ISO 8601 standard in YYYY-mm-ddTHH:MM:SS.ss format. | yyyy-MM-dd'T'HH:mm:ssxx |
| station | Alpha-numeric code representing the sampling station. | dimensionless |
| depth_w | Depth of the water (bottom depth). Name changed from 'Seafloor' during processing. | meters |
| depth_instr_max | Maximum depth of instrument deploymnet. | meters |
| lat | Latitude in decimal degrees. Positive values = North. | decimal degrees |
| lon | Longitude in decimal degrees. Negative values = West. | decimal degrees |
| author | Name of person entering the event. | dimensionless |
| comment | Comment entered about the sampling event; free-text. | dimensionless |

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## Deployments

**EN524**

| | |
|---|---|
| **Website** | https://www.bco-dmo.org/deployment/59031 |
| **Platform** | R/V Endeavor |
| **Start Date** | 2013-05-19 |
| **End Date** | 2013-05-22 |
| **Description** | UNOLS cruise request: http://strs.unols.org/Public/diu_project_view.aspx?project_id=103010 The May cruise is the first for the NSF OCE funded Ocean Acidification, Hypoxia and Warming project also known by the project researchers as "OA Propagule". The cruise was timed such that samples would be collected soon after the spring bloom. During the cruise, investigators plan to collect CTD profile data, including dissolved oxygen, bottom water with Niskin bottles deployed on the CTD rosette, MC800 multicores, and Soutar boxcores from the "Mud Patch" study site. The study area is located on the continental shelf approximately 50 nm south of Martha's Vineyard (40.43 N 70.5 W). The original cruise event log and other underway data submitted by the vessel operator will be available from the NSF R2R cruise catalog. Cruise track image from the University of Rhode Island, the vessel operator. |

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## Project Information

**Ocean Acidification, Hypoxia and Warming: Experimental Investigations into Compounded Effects of Global Change on Benthic Foraminifera (OA, Hypoxia and Warming)**

**Coverage**: continental shelf off New England

**from the NSF award abstract:**

The average sea surface temperature (SST) has increased over the last 100 years, rising atmospheric partial pressure of carbon dioxide (pCO2) is lowering the pH of the oceans, and the extent and intensity of low-oxygen bottom waters is growing, at least in certain regions. The biological impacts of these ongoing changes -- warming, acidification, and hypoxia -- have each been studied independently, but few studies have explored the possible interactions among these stressors.

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 pCO2, lower [O2], 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 pCO2 levels.

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## Program Information

**Science, Engineering and Education for Sustainability NSF-Wide Investment (SEES): Ocean Acidification (formerly CRI-OA) (SEES-OA)**

**Website**: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503477

**Coverage**: global

NSF Climate Research Investment (CRI) activities that were initiated in 2010 are now included under Science, Engineering and Education for Sustainability NSF-Wide Investment (SEES). SEES is a portfolio of activities that highlights NSF's unique role in helping society address the challenge(s) of achieving sustainability. Detailed information about the SEES program is available from NSF (https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504707).

In recognition of the need for basic research concerning the nature, extent and impact of ocean acidification on oceanic environments in the past, present and future, the goal of the SEES: OA program is to understand (a) the chemistry and physical chemistry of ocean acidification; (b) how ocean acidification interacts with processes at the organismal level; and (c) how the earth system history informs our understanding of the effects of ocean acidification on the present day and future ocean.

**Solicitations issued under this program:**
NSF 10-530, FY 2010-FY2011
NSF 12-500, FY 2012
NSF 12-600, FY 2013
NSF 13-586, FY 2014
NSF 13-586 was the final solicitation that will be released for this program.

**PI Meetings:**
1st U.S. Ocean Acidification PI Meeting(March 22-24, 2011, Woods Hole, MA)
2nd U.S. Ocean Acidification PI Meeting(Sept. 18-20, 2013, Washington, DC)
3rd U.S. Ocean Acidification PI Meeting (June 9-11, 2015, Woods Hole, MA – Tentative)

**NSF media releases for the Ocean Acidification Program:**

Press Release 10-186 NSF Awards Grants to Study Effects of Ocean Acidification

Discovery Blue Mussels "Hang On" Along Rocky Shores: For How Long?

Discovery nsf.gov - National Science Foundation (NSF) Discoveries - Trouble in Paradise: Ocean Acidification This Way Comes - US National Science Foundation (NSF)

Press Release 12-179 nsf.gov - National Science Foundation (NSF) News - Ocean Acidification: Finding New Answers Through National Science Foundation Research Grants - US National Science Foundation (NSF)

Press Release 13-102 World Oceans Month Brings Mixed News for Oysters

Press Release 13-108 nsf.gov - National Science Foundation (NSF) News - Natural Underwater Springs Show How Coral Reefs Respond to Ocean Acidification - US National Science Foundation (NSF)

Press Release 13-148 Ocean acidification: Making new discoveries through National Science Foundation research grants

Press Release 13-148 - Video nsf.gov - News - Video - NSF Ocean Sciences Division Director David Conover answers questions about ocean acidification. - US National Science Foundation (NSF)

Press Release 14-010 nsf.gov - National Science Foundation (NSF) News - Palau's coral reefs surprisingly resistant to ocean acidification - US National Science Foundation (NSF)

Press Release 14-116 nsf.gov - National Science Foundation (NSF) News - Ocean Acidification: NSF awards $11.4 million in new grants to study effects on marine ecosystems - US National Science Foundation (NSF)

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## Funding

| Funding Source | Award |
| --- | --- |
| NSF Division of Ocean Sciences (NSF OCE) | OCE-1219948 |


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