**Dataset:** Bottle Data

**Project(s):** Investigations of *Alexandrium fundyense* dynamics in the Gulf of Maine (ALEX-GoME)

**Abstract:** This Niskin Bottle dataset from the Investigations of *Alexandrium fundyense* dynamics in the Gulf of Maine (ALEX-GoME) project includes the following data: hydrography, nutrients, pigments and *A. Fundyense* abundance data. For a complete list of measurements, refer to the supplemental document ‘Field_names.pdf’.

Multi year bottle data 2003-2010

**Note: Dataset updated with 2008/EN448 Version 3 data srg/21Mar2013**

These data include version 2 data as submitted.

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**Version 2 NOTES**

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Version 2 means that Data set has been updated in part of the new data added:
1) 2010 cruises;
2) Previously unavailable Whole cell counts from the previous cruises;
3) Previously unavailable data for Underway stations (mostly date, location).

Data files newly created or updated in this version are indicated with "_v2" in file names.
(BCO-DMO Note: for original files as contributed)

Date of creation: 5/12/2011.
Matlab code used for data merging: GM_read_alex_nuts_BTL_v2.m

No data reported for the following cruises:
- 2007/OC440
- 2008/EN456

Data not sampled or lost is indicated with NaN.
Data not available at the time but supposed to arrive is indicated with the "waiting" flag=-9.99.

**Funding:**
The cruises from 2003-2004 were supported by NOAA grant NA160P2785 (MERHAB).
The cruises from 2005-2010 were jointly funded:
- NSF grant OCE-0430724 and NIEHS grant 1P50-ES01274201 (Woods Hole Center for Oceans and Human Health)
- NOAA grant NA06NOS4780245 (GOMTOX)

Hydrographic profiles and water samples were collected with a standard CTD-rosette system with Niskin bottles. Nutrient samples were filtered through Millipore HA filters, placed immediately in a sea water-ice bath for 5–10 min, and frozen at −18°C. Concentrations of NO3+NO2, NH4, Si(OH)4 and PO4 were measured with a Bran Luebbe AA3 AutoAnalyzer using standard techniques.

*A. fundyense* cells were enumerated from water samples using an oligonucleotide probe and methods described in Anderson et al. (2005). Both *A. tamarense* and *A. fundyense* occur in the Gulf of Maine, and these are considered to be varieties of the same species. Available molecular probes cannot distinguish between them, and only detailed analysis of the thecal plates on individual cells can provide this resolution—which is not practical for large numbers of field samples. Accordingly, for the purpose of this study, the name *A. fundyense* is used to refer to both forms.


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Deployment information

Deployment description for R/V Oceanus OC447

Synoptic mapping of Alexandrium fundyense, hydrography, and velocity in the coastal current from Cape Cod to Bay of Fundy.
CTD casts, Drifter deployments, water pumping

R/V Oceanus, Voyage #447 /O447/
28 May 2008 -- 4 June 2008
Woods Hole, MA -- Woods Hole, MA

The research objective is synoptic mapping of Alexandrium fundyense, hydrography, and velocity in the coastal current from Cape Cod to Bay of Fundy.
The planned activities include CTD casts, drifter deployments, and water pumping.

Scientific personnel:
Dr. Dennis McGillicuddy, Chief Scientist, Woods Hole Oceanographic Institution
Dr. Valery Kosnyrev, Woods Hole Oceanographic Institution
Ms. Olga Kosnyreva, Woods Hole Oceanographic Institution
Mr. Keston Smith, Woods Hole Oceanographic Institution
Mr. Bruce Keafer, Woods Hole Oceanographic Institution
Mr. Kerry Norton, Woods Hole Oceanographic Institution
Dr. Bibiana Gomez Crespo, IIM/CSIC, Spain
Dr. Luciano Fernandes, Woods Hole Oceanographic Institution
Ms. Stacey Lee, Woods Hole Oceanographic Institution
Dr. David Townsend, University of Maine
Ms. Maura Thomas, University of Maine
Mr. Nathan Reback, University of Maine
Ms. Rachel Gettings, University of Maine
Mr. Morgan Brunbauer, University of Maine
Dr. Jefferson Turner, University of Massachusetts Dartmouth
Mr. Peter Milligan, University of Massachusetts Dartmouth
Ms. Meribeth Ratzel, Cape Cod Community College
Dr. Laurence Anderson, Woods Hole Oceanographic Institution
Mr. Alexander Dorsk, Woods Hole Oceanographic Institution

WHOI cruise planning synopsis

Deployment description for R/V Oceanus OC391

Synoptic mapping of Alexandrium fundyense, hydrography, and velocity in the coastal current offshore of Casco and Penobscot Bays

WHOI cruise planning synopsis

Deployment description for R/V Oceanus OC402

MERHAB - Synoptic mapping of Alexandrium fundyense, hydrography, and velocity in the coastal current offshore of Casco and Penobscot Bays

WHOI cruise planning synopsis
**Deployment description for R/V Oceanus OC412**

COHH - Synoptic mapping of Alexandrium fundyense, hydrography, and velocity in the coastal current in the Gulf of Maine.

**Deployment description for R/V Oceanus OC425**

Synoptic mapping of Alexandrium fundyense, hydrography, and velocity in the coastal current from Cape Cod to the Bay of Fundy.

**Deployment description for R/V Oceanus OC445**

Synoptic mapping of Alexandrium fundyense, hydrography, and velocity in the coastal current from Cape Cod to the Bay of Fundy. CTD casts, drifter deployments, water pumping.

R/V Oceanus, Voyage #445 (OC445)  
28 April 2008 - 5 May 2008  
Woods Hole, MA - Woods Hole, MA

The research objective is synoptic mapping of Alexandrium fundyense, hydrography, and velocity in the coastal current from Cape Cod to Georges Bank. The planned activities include CTD casts, drifter deployments, and water pumping.

Scientific personnel:
Dr. Dennis McGillicuddy, Jr., Chief Scientist, Woods Hole Oceanographic Institution  
Dr. Valery Kosnyrev, Woods Hole Oceanographic Institution  
Mr. Keston Smith, Woods Hole Oceanographic Institution  
Mr. Bruce Keafer, Woods Hole Oceanographic Institution  
Mr. Kerry Norton, Woods Hole Oceanographic Institution  
Dr. Bibiana Gomez Crespo, IIM/CSIC, Spain  
Dr. Luciano Fernandez, Woods Hole Oceanographic Institution  
Ms. Stacey Lee, Woods Hole Oceanographic Institution  
Dr. David Townsend, University of Maine  
Ms. Maura Thomas, University of Maine  
Mr. Nathan Reuck, University of Maine  
Dr. Jefferson Turner, University of Massachusetts Dartmouth  
Mr. Peter Milligan, University of Massachusetts Dartmouth  
Ms. Meribeth Ratzel, Cape Cod Community College  
Mr. Artur Palacz, University of Maine  
Dr. Laurence Anderson, Woods Hole Oceanographic Institution  
Ms. Katherine Libera, Woods Hole Oceanographic Institution  
Ms. Erin Dupuis, Woods Hole Oceanographic Institution  
Mr. Alexander Dorsk, Woods Hole Oceanographic Institution

**Deployment description for R/V Oceanus OC460**

Synoptic mapping of Alexandrium fundyense, hydrography, and velocity in the coastal current from Cape Cod to...
Deployment description for R/V Oceanus OC465

Synoptic mapping of Alexandrium fundyense, hydrography, and velocity in the coastal current from Cape Cod to Georges Bank, Cape Cod to Bay of Fundy.

WHOI cruise planning synopsis

Deployment description for R/V Oceanus OC467

Synoptic mapping of Alexandrium fundyense, hydrography, and velocity in the coastal current from Cape Cod to Georges Bank, Cape Cod to Bay of Fundy. OC467 is one of the GOMTOX project cruises to study the dynamics of Alexandrium fundyense distributions in the Gulf of Maine. GOMTOX is an observational and modeling study of nearshore and offshore shellfish toxicity, vertical toxin flux, and bloom dynamics in the Gulf of Maine, a complex shelf sea region.

WHOI cruise planning synopsis

Original cruise data are available from the NSF R2R data catalog

Instrument information

<table>
<thead>
<tr>
<th>Instrument:</th>
<th>Niskin bottle</th>
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</thead>
<tbody>
<tr>
<td>Description:</td>
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<tr>
<td>Generic Instrument Name:</td>
<td>Niskin bottle</td>
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<tr>
<td>Generic Instrument Description:</td>
<td>A Niskin bottle (a next generation water sampler based on the Nansen bottle) is a cylindrical, non-metallic water collection device with stoppers at both ends. The bottles can be attached individually on a hydrowire or deployed in 12, 24 or 36 bottle Rosette systems mounted on a frame and combined with a CTD. Niskin bottles are used to collect discrete water samples for a range of measurements including pigments, nutrients, plankton, etc.</td>
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<tr>
<th>Instrument:</th>
<th>Bran Luebbe AA3 AutoAnalyzer</th>
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<tr>
<td>Generic Instrument Description:</td>
<td>Bran Luebbe AA3 AutoAnalyzer <a href="http://seal-analytical.com/Products/AA3-SFA-Analyzer.aspx">http://seal-analytical.com/Products/AA3-SFA-Analyzer.aspx</a></td>
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<tr>
<th>Instrument:</th>
<th>CTD Sea-Bird 9</th>
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<tr>
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<tr>
<td>Generic Instrument Name:</td>
<td>CTD Sea-Bird 9</td>
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<tr>
<td>Generic Instrument Description:</td>
<td>The Sea-Bird SBE 9 is a type of CTD instrument package. The SBE 9 is the Underwater Unit and is most often combined with the SBE 11 Deck Unit (for real-time readout using conductive wire) when deployed from a research vessel. The combination of the SBE 9 and SBE 11 is called a SBE 911. The SBE 9 uses Sea-Bird’s standard modular temperature and conductivity sensors (SBE 3 and SBE 4). The SBE 9 CTD can be configured with auxiliary sensors to measure other parameters including dissolved oxygen, pH, turbidity, fluorometer, altimeter, etc.). Note that in most cases, it is more accurate to specify SBE 911 than SBE 9 since it is likely a SBE 11 deck unit was used.</td>
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more information from Sea-Bird Electronics
<table>
<thead>
<tr>
<th><strong>Instrument:</strong></th>
<th>CTD Sea-Bird SBE 911plus</th>
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<td><em>(local description not specified)</em></td>
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<tr>
<td><strong>Generic Instrument Name:</strong></td>
<td>CTD Sea-Bird SBE 911plus</td>
</tr>
<tr>
<td><strong>Generic Instrument Description:</strong></td>
<td>The Sea-Bird SBE 911plus is a type of CTD instrument package for continuous measurement of conductivity, temperature and pressure. The SBE 911plus includes the SBE 9plus Underwater Unit and the SBE 11plus Deck Unit (for real-time readout using conductive wire) for deployment from a vessel. The combination of the SBE 9plus and SBE 11plus is called a SBE 911plus. The SBE 9plus uses Sea-Bird's standard modular temperature and conductivity sensors (SBE 3plus and SBE 4). The SBE 9plus CTD can be configured with up to eight auxiliary sensors to measure other parameters including dissolved oxygen, pH, turbidity, fluorescence, light (PAR), light transmission, etc.). <a href="#">more information from Sea-Bird Electronics</a></td>
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