# Volume backscatter acoustics data collected on R/V Albatross IV cruises AL9205 and AL9607 in the Gulf of Maine and Georges Bank in 1992 and 1996 (GB project)

**Website**: https://www.bco-dmo.org/dataset/2398
**Data Type**: Cruise Results
**Version**: 1
**Version Date**: 2009-01-07

**Project**
» U.S. GLOBEC Georges Bank (GB)

**Program**
» U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

| Contributors | Affiliation | Role |
|---|---|---|
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**Abstract**
Volume backscatter acoustics data collected on R/V Albatross IV cruises AL9205 and AL9607 in the Gulf of Maine and Georges Bank in 1992 and 1996 (GB project)

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## Coverage

**Spatial Extent**: **N**:42.286167 **E**:-65.851333 **S**:40.415667 **W**:-69.031333
**Temporal Extent**: 1992 - 1995

## Dataset Description

### Volume back scattering, Albatross IV 9205 and 9607

The data are reported at 20 depth intervals (1-20meters) per yearday and position over a given track line.

*last updated January 7, 2009*

#### Methods & Sampling

The data are reported at 20 depth intervals (1-20meters) per yearday and position over a given track line.

### Data Processing Description

Uses the vbs method, similar in function to the def method.

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## Data Files

| File |
|---|
| **vbs.csv**(Comma Separated Values (.csv), 119.31 MB)<br>MD5:0413a98826564fa48afa61d7d12ce99c<br>Primary data file for dataset ID 2398 |

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## Parameters

| Parameter | Description | Units |
|---|---|---|
| cruiseid | cruise identification | |
| year | year of cruise | |
| track_line | track line identification | |
| yrday_utc | year day, utc (equates to date and time) | dec. yearday |
| lat | latitude, negative = South | dec. degrees |
| lon | longitude, negative = West | dec. degrees |
| depth_bin_2 | depth of observation, based on an averaging of two meter bins | meters |
| transducer | depth of transducer | meters |
| vbs_coef | volume back sattering coefficient | meter**-1 |

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## Instruments

| | |
|---|---|
| **Dataset-specific Instrument Name** | Greene Bomber |
| **Generic Instrument Name** | Greene Bomber |
| **Generic Instrument Description** | The Greene Bomber is a ENDECO V-fin towed body with overall dimensions of length: 139.7 cm; width at front: 66 cm; width at rear: 142.2 cm; height: 48.26 cm. It is constructed primarily of fiberglass. Since the early 1990's it has been towed just below the sea surface with acoustic and environmental sensors to provide continuous profiles of the water column acoustic backscattering and target strengths from zooplankton with a size range of ~ 1.5 mm to 100 mm, and sea surface environmental properties (temperature, salinity, and fluorescence). It was first used with a BioSonics dual-beam acoustic system operating at 420 kHz and 1 MHz or 120 and 420 kHz. The environmental sensing system (ESS) was the ESS used on MOCNESS. In 1997 the acoustics were changed to a HTI acousitic system with 120 and 420 kHz transducers. In 2010, two additional HTI transducers (43 and 200 kHz) were added. For additional detail see: Wiebe, P. and C. Greene. 1994. The use of high frequency acoustics in the study of zooplankton spatial and temporal patterns. Proc. NIPR Symp. Polar Biol. 7: 133-157. Wiebe, P.H., D. Mountain, T.K. Stanton, C. Greene, G. Lough, S. Kaartvedt, J. Dawson, and N. Copley. 1996. Acoustical study of the spatial distribution of plankton on Georges Bank and the relation of volume backscattering strength to the taxonomic composition of the plankton. Deep-Sea Research II. 43: 1971-2001. Wiebe, PH; Stanton, T K; Benfield, M C; Mountain, D G; Greene, CH. 1997. High-frequency acoustic volume backscattering in the Georges Bank coastal region and its interpretation using scattering models. IEEE Journal of Oceanic Engineering22(3): 445-464. |

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## Deployments

**AL9205**

| | |
|---|---|
| **Website** | https://www.bco-dmo.org/deployment/57365 |
| **Platform** | R/V Albatross IV |
| **Report** | http://globec.whoi.edu/globec-dir/reports/al9205/AL9205DataReport.pdf |
| **Start Date** | 1992-05-18 |
| **End Date** | 1992-05-29 |
| **Description** | process<br><br>**Methods & Sampling**<br>The data are reported at 20 depth intervals (1-20meters) per yearday and position over a given track line.<br><br>**Processing Description**<br>Uses the vbs method, similar in function to the def method. |

**AL9607**

| | |
|---|---|
| **Website** | https://www.bco-dmo.org/deployment/57376 |
| **Platform** | R/V Albatross IV |
| **Report** | http://globec.whoi.edu/globec-dir/reports/al9607/AL9607.pdf |
| **Start Date** | 1996-06-03 |
| **End Date** | 1996-06-13 |
| **Description** | broad-scale<br><br>**Methods & Sampling**<br>The data are reported at 20 depth intervals (1-20meters) per yearday and position over a given track line.<br><br>**Processing Description**<br>Uses the vbs method, similar in function to the def method. |

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## Project Information

**U.S. GLOBEC Georges Bank (GB)**

**Website**: http://globec.whoi.edu/globec_program.html

**Coverage**: Georges Bank, Gulf of Maine, Northwest Atlantic Ocean

The U.S. GLOBEC Georges Bank Program is a large multi- disciplinary multi-year oceanographic effort. The proximate goal is to understand the population dynamics of key species on the Bank - Cod, Haddock, and two species of zooplankton (*Calanus finmarchicus* and *Pseudocalanus*) - in terms of their coupling to the physical environment and in terms of their predators and prey. The ultimate goal is to be able to predict changes in the distribution and abundance of these species as a result of changes in their physical and biotic environment as well as to anticipate how their populations might respond to climate change.

The effort is substantial, requiring broad-scale surveys of the entire Bank, and process studies which focus both on the links between the target species and their physical environment, and the determination of fundamental aspects of these species' life history (birth rates, growth rates, death rates, etc).

Equally important are the modelling efforts that are ongoing which seek to provide realistic predictions of the flow field and which utilize the life history information to produce an integrated view of the dynamics of the populations.

The U.S. GLOBEC Georges Bank Executive Committee (EXCO) provides program leadership and effective communication with the funding agencies.

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## Program Information

**U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)**

**Website**: http://www.usglobec.org/

**Coverage**: Global

U.S. GLOBEC (GLOBal ocean ECosystems dynamics) is a research program organized by oceanographers and fisheries scientists to address the question of how global climate change may affect the abundance and production of animals in the sea.

The U.S. GLOBEC Program currently had major research efforts underway in the Georges Bank / Northwest Atlantic Region, and the Northeast Pacific (with components in the California Current and in the Coastal Gulf of Alaska). U.S. GLOBEC was a major contributor to International GLOBEC efforts in the Southern Ocean and Western Antarctic Peninsula (WAP).

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## Funding


| Funding Source | Award |
|---|---|
| National Science Foundation (NSF) | unknown GB NSF |
| National Oceanic and Atmospheric Administration (NOAA) | unknown GB NOAA |


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