# Data from mooring deployed on Northeast Peak in the Georges Bank, Northeast Peak in 1999

**Website**: https://www.bco-dmo.org/dataset/2503
**Data Type**: Cruise Results
**Version**: 1
**Version Date**: 2005-08-10

**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**
Data from mooring deployed on Northeast Peak in the Georges Bank, Northeast Peak in 1999

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## Coverage

**Spatial Extent**: **Lat**:41.7333 **Lon**:-66.5333
**Temporal Extent**: 1999-03-12 - 1999-08-14

## Dataset Description

### GLOBEC Georges Bank Long-term Moored Array Component

### N.E. Peak Mooring Site
### 41 44' N, 66 32' W

One deployment was made in 1999 at this site, Mar 12. 1999 to Aug 14 1999. (Dates reflect dates of data not deployment time)

**Note:**
Sampling rates vary from instrument to instrument.

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1. The nominal position of the mooring is the designed deployment site and actual deployments varied by about 0.5 nm around this position.
2. Sensor depths are nominal designed depths.  In water sensors vary around this designed depth by about 1 m, variation larger at greater distance below buoy.
3. Temperatures are listed in the IPTS68 standard, rather than IPT90.
4. Salinity conversion from conductivity was done with PSS78
5. Sensor normalization was done with pre-cruise calibrations, and checked with post-cruise calibrations.
6. Only minor editing has been done to remove spikes from records.
7. No corrections have been made to fluorometer and transmissometer data to remove biological fouling induced drift.
8. No corrections have been made to salinity for drifts due to biological fouling.

*updated 08/10/05; gfh*

### Methods & Sampling

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### Data Processing Description

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## Data Files

| File |
| --- |
| **NEP1999.csv** (Comma Separated Values (.csv), 13.65 MB)<br>MD5:00a61dfcb1ad9874d16861e1cc881765<br><br>Primary data file for dataset ID 2503 |

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## Parameters

| Parameter | Description | Units |
|---|---|---|
| brief_desc | data type description | unitless |
| year_start | starting year of mooring deployment | unitless |
| lat | latitude, negative = South | decimal degrees |
| lon | longitude, negative = West | decimal degrees |
| depth | depth of instrument, negative = height above sea surf. | meters |
| hour_gmt | time GMT in hours (0-23) | unitless |
| minute_gmt | time GMT in minutes (0-59) | unitless |
| seconds_gmt | time GMT in seconds | unitless |
| day_gmt | day of month GMT (1-31) | unitless |
| month_gmt | month of year GMT (1-12) | unitless |
| year | year | unitless |
| julian_day | Julian day. In this convention, Julian day 2440000 begins at 0000 hours, May 23, 1968 | unitless |
| flvolt | fluorescense | volts |
| opt_back | not defined; possibly optical backscatter | unknown |
| trans | light transmission | percent |
| par_scalar | scalar PAR | microEinstein/meter^2/second |
| cond | conductivity | seimens/meter |
| sal | salinity, PSS78 | unitless |

| | | |
|---|---|---|
| sigma_0 | sigma-theta or potential density: density which takes into account adiabatic heating/cooling with changes in pressure | kg/m^3 |
| temp | water temperature, IPTS68 | decimal deg. C |
| temp_air | air temperature | decimal deg. C |
| yrday_gmt | GMT day and decimal time, as 326.5 for the 326th day of the year, or November 22 at 1200 hours (noon). In the case of drifter data, year day may be continuous over a multi year period. | unitless |

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## Instruments

| | |
|---|---|
| **Dataset-specific Instrument Name** | Acoustic Doppler Current Profiler |
| **Generic Instrument Name** | Acoustic Doppler Current Profiler |
| **Dataset-specific Description** | 300-khz RD Instruments Workhorse ADCP mounted in a downward looking configuration in an in-line frame with auxiliary battery pack |
| **Generic Instrument Description** | The ADCP measures water currents with sound, using a principle of sound waves called the Doppler effect. A sound wave has a higher frequency, or pitch, when it moves to you than when it moves away. You hear the Doppler effect in action when a car speeds past with a characteristic building of sound that fades when the car passes. The ADCP works by transmitting "pings" of sound at a constant frequency into the water. (The pings are so highly pitched that humans and even dolphins can't hear them.) As the sound waves travel, they ricochet off particles suspended in the moving water, and reflect back to the instrument. Due to the Doppler effect, sound waves bounced back from a particle moving away from the profiler have a slightly lowered frequency when they return. Particles moving toward the instrument send back higher frequency waves. The difference in frequency between the waves the profiler sends out and the waves it receives is called the Doppler shift. The instrument uses this shift to calculate how fast the particle and the water around it are moving. Sound waves that hit particles far from the profiler take longer to come back than waves that strike close by. By measuring the time it takes for the waves to bounce back and the Doppler shift, the profiler can measure current speed at many different depths with each series of pings. (More from WHOI instruments listing). |

| | |
|---|---|
| **Dataset-specific Instrument Name** | MicroCat |
| **Generic Instrument Name** | CTD Sea-Bird MicroCAT 37 |
| **Dataset-specific Description** | MicroCAT (SBE-37) was mounted about 72-m depth (4m above bottom) to measure near-bottom water properties |
| **Generic Instrument Description** | The Sea-Bird MicroCAT CTD unit is a high-accuracy conductivity and temperature recorder based on the Sea-Bird SBE 37 MicroCAT series of products. It can be configured with optional pressure sensor, internal batteries, memory, built-in Inductive Modem, integral Pump, and/or SBE-43 Integrated Dissolved Oxygen sensor. Constructed of titanium and other non-corroding materials for long life with minimal maintenance, the MicroCAT is designed for long duration on moorings. In a typical mooring, a modem module housed in the buoy communicates with underwater instruments and is interfaced to a computer or data logger via serial port. The computer or data logger is programmed to poll each instrument on the mooring for its data, and send the data to a telemetry transmitter (satellite link, cell phone, RF modem, etc.). The MicroCAT saves data in memory for upload after recovery, providing a data backup if real-time telemetry is interrupted. |

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|---|---|
| **Dataset-specific Instrument Name** | Sea-Bird Seacat CTD |
| **Generic Instrument Name** | CTD Sea-Bird SEACAT |
| **Dataset-specific Description** | The SEACATs are mounted parallel with the mooring cable and tie wrapped and taped to the cable. |
| **Generic Instrument Description** | The CTD SEACAT recorder is an instrument package manufactured by Sea-Bird Electronics. The first Sea-Bird SEACAT Recorder was the original SBE 16 SEACAT developed in 1987. There are several model numbers including the SBE 16plus (SEACAT C-T Recorder (P optional))and the SBE 19 (SBE 19plus SEACAT Profiler measures conductivity, temperature, and pressure (depth)). More information from Sea-Bird Electronics. |

| | |
|---|---|
| **Dataset-specific Instrument Name** | LiCor Scalar Photosynthetically Active Radiation Sensor |
| **Generic Instrument Name** | LI-COR LI-192 PAR Sensor |
| **Dataset-specific Description** | LiCor scalar(4steradians) PAR sensor. |
| **Generic Instrument Description** | The LI-192 Underwater Quantum Sensor (UWQ) measures underwater or atmospheric Photon Flux Density (PPFD) (Photosynthetically Available Radiation from 360 degrees) using a Silicon Photodiode and glass filters encased in a waterproof housing. The LI-192 is cosine corrected and features corrosion resistant, rugged construction for use in freshwater or saltwater and pressures up to 800 psi (5500 kPa, 560 meters depth). Typical output is in um s-1 m-2. The LI-192 uses computer-tailored filter glass to achieve the desired quantum response. Calibration is traceable to NIST. The LI-192 serial numbers begin with UWQ-XXXXX. LI-COR has been producing Underwater Quantum Sensors since 1973. These LI-192 sensors are typically listed as LI-192SA to designate the 2-pin connector on the base of the housing and require an Underwater Cable (LI-COR part number 2222UWB) to connect to the pins on the Sensor and connect to a data recording device. The LI-192 differs from the LI-193 primarily in sensitivity and angular response. 193: Sensitivity: Typically 7 uA per 1000 umol s-1 m-2 in water. Azimuth: < ± 3% error over 360° at 90° from normal axis. Angular Response: < ± 4% error up to ± 90° from normal axis. 192: Sensitivity: Typically 4 uA per 1000 umol s-1 m-2 in water. Azimuth: < ± 1% error over 360° at 45° elevation. Cosine Correction: Optimized for underwater and atmospheric use. (www.licor.com) |

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|---|---|
| **Dataset-specific Instrument Name** | Rotronics |
| **Generic Instrument Name** | Rotronics Temperature and Humidity Probe |
| **Dataset-specific Description** | Temperature & Humidity sensor |
| **Generic Instrument Description** | Rotronics device used to measure air temperature |

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|---|---|
| **Dataset-specific Instrument Name** | SeaTech Fluorometer |
| **Generic Instrument Name** | Sea Tech Fluorometer |
| **Dataset-specific Description** | Sea Tech chlorophyll-a fluorometer |
| **Generic Instrument Description** | The Sea Tech chlorophyll-a fluorometer has internally selectable settings to adjust for different ranges of chlorophyll concentration, and is designed to measure chlorophyll-a fluorescence in situ. The instrument is stable with time and temperature and uses specially selected optical filters enabling accurate measurements of chlorophyll a. It can be deployed in moored or profiling mode. This instrument designation is used when specific make and model are not known. The Sea Tech Fluorometer was manufactured by Sea Tech, Inc. (Corvalis, OR, USA). |

| | |
|---|---|
| **Dataset-specific Instrument Name** | SeaTech Transmissometer |
| **Generic Instrument Name** | Sea Tech Transmissometer |
| **Dataset-specific Description** | Sea Tech 25-cm path-length transmissometer |
| **Generic Instrument Description** | The Sea Tech Transmissometer can be deployed in either moored or profiling mode to estimate the concentration of suspended or particulate matter in seawater. The transmissometer measures the beam attenuation coefficient in the red spectral band (660 nm) of the laser lightsource over the instrument's path-length (e.g. 20 or 25 cm). This instrument designation is used when specific make and model are not known. The Sea Tech Transmissometer was manufactured by Sea Tech, Inc. (Corvalis, OR, USA). |

| | |
|---|---|
| **Dataset-specific Instrument Name** | SBE-3 |
| **Generic Instrument Name** | Sea-Bird SBE-3 Temperature Sensor |
| **Dataset-specific Description** | SBE-3 Temperature |
| **Generic Instrument Description** | The SBE-3 is a slow response, frequency output temperature sensor manufactured by Sea-Bird Electronics, Inc. (Bellevue, Washington, USA). It has an initial accuracy of +/- 0.001 degrees Celsius with a stability of +/- 0.002 degrees Celsius per year and measures seawater temperature in the range of -5.0 to +35 degrees Celsius. More information from Sea-Bird Electronics: https://www.seabird.com/products/sbe-3-oceanographic-temperature-sensor |

| | |
|---|---|
| **Dataset-specific Instrument Name** | SBE-4 |
| **Generic Instrument Name** | Sea-Bird SBE-4 Conductivity Sensor |
| **Dataset-specific Description** | SBE-4 Conductivity |
| **Generic Instrument Description** | The Sea-Bird SBE-4 conductivity sensor is a modular, self-contained instrument that measures conductivity from 0 to 7 Siemens/meter. The sensors (Version 2; S/N 2000 and higher) have electrically isolated power circuits and optically coupled outputs to eliminate any possibility of noise and corrosion caused by ground loops. The sensing element is a cylindrical, flow-through, borosilicate glass cell with three internal platinum electrodes. Because the outer electrodes are connected together, electric fields are confined inside the cell, making the measured resistance (and instrument calibration) independent of calibration bath size or proximity to protective cages or other objects. |

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## Deployments

**NE_Peak**

| | |
|---|---|
| **Website** | https://www.bco-dmo.org/deployment/57359 |
| **Platform** | GB NEP Mooring |
| **Report** | http://globec.whoi.edu/globec-dir/data_doc/WHOI-2005-11.pdf |
| **Start Date** | 1995-11-01 |
| **End Date** | 1999-08-14 |
| **Description** | U.S. GLOBEC Georges Bank Long-Term Moored Program<br><br>**Methods & Sampling**<br>One deployment was made in 1999 at this site, Mar 12. 1999 to Aug 14 1999. (Dates reflect dates of data not deployment time)<br><br>**Processing Description**<br>1. The nominal position of the mooring is the designed deployment site and actual deployments varied by about 0.5 nm around this position. 2. Sensor depths are nominal designed depths. In water sensors vary around this designed depth by about 1 m, variation larger at greater distance below buoy. 3. Temperatures are listed in the IPTS68 standard, rather than IPT90. 4. Salinity conversion from conductivity was done with PSS78 5. Sensor normalization was done with pre-cruise calibrations, and checked with post-cruise calibrations. 6. Only minor editing has been done to remove spikes from records. 7. No corrections have been made to fluorometer and transmissometer data to remove biological fouling induced drift. 8. No corrections have been made to salinity for drifts due to biological fouling. |

**NEP_buoy_dep2**

| | |
|---|---|
| **Website** | https://www.bco-dmo.org/deployment/58020 |
| **Platform** | GB NEP Mooring |
| **Report** | http://globec.whoi.edu/globec-dir/data_doc/WHOI-2005-11.pdf |
| **Start Date** | 1996-10-28 |
| **End Date** | 1996-12-19 |
| **Description** | U.S. GLOBEC Georges Bank Long-Term Moored Program |

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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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