

CTD data from the Gulf of Maine in 1998 from three cruises on the R/V Susan and Caitlyn - SC9801, SC9802, and SC9803 - in the Gulf of Maine and Georges Bank as part of the U.S. GLOBEC program (GB project)

Website: <https://www.bco-dmo.org/dataset/2419>

Data Type: Cruise Results

Version: 1

Version Date: 2005-03-16

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

CTD data from the Gulf of Maine in 1998 from three cruises on the R/V Susan and Caitlyn - SC9801, SC9802, and SC9803 - in the Gulf of Maine and Georges Bank as part of the U.S. GLOBEC program.

Table of Contents

- [Coverage](#)
 - [Dataset Description](#)
 - [Methods & Sampling](#)
 - [Data Processing Description](#)
 - [Data Files](#)
 - [Parameters](#)
 - [Instruments](#)
 - [Deployments](#)
 - [Project Information](#)
 - [Program Information](#)
 - [Funding](#)
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Coverage

Spatial Extent: N:43.6182 E:-69.5615 S:42.6162 W:-69.7167

Temporal Extent: 1998-02-21 - 1998-06-02

Dataset Description

The UNH SeaBird SBE-25 SeaLogger measures:

- Temperature (degrees C) with a SeaBird SBE-3F.

- Conductivity (Siemens/m) with a SeaBird SBE-4C.
- Pressure (decibars) with a SBE 29 strain gage sensor.
- Percent light transmission with a Wet Labs CST-126R transmissometer across a 25 cm distance at the red light wavelength 660 nm. Data are presented as a percentage relative to pure water.
- Chlorophyll concentration in micrograms/liter with a Wet Labs WETStar Fluorometer model 9607003.
- PAR (photosynthetically active radiation) with a Biospherical QPS-200PD which observes an upper hemispherical total irradiance in quanta/sq-cm/sec.
- Dissolved oxygen with a SBE-23Y (Yellow Springs Instrument) in milliliters/liter.

During a cast, sensors are flushed with a SBE-5T pump at approximately 25 ml/s. The system samples and stores all data at 8 Hz (8 samples/ second). Profiling rates should be 20 meters/minute for an average of 24 samples/1 m pressure level. Normally only the downcasts are analyzed (unless a problem is noted). Sensors are factory calibrated annually.

Derived data are calculated using Matlab and/or UNH algorithms developed in accordance with standards prescribed by Fofonoff and Millard, 1983.

For additional information about the SC9801 cruise see the [NOAA Coastal Ocean Program Progress Report](#)

Additional [data processing notes](#) were provided by the contributor. Note: These notes reflect the CTD processing steps for data collected during the UNH CONVEX program. However, they are indicative of the processing performed on the data reported here. Parameter names have been changed to agree with GLOBEC requirements.

Methods & Sampling

The UNH SeaBird SBE-25 SeaLogger measures:

- Temperature (degrees C) with a SeaBird SBE-3F.
- Conductivity (Siemens/m) with a SeaBird SBE-4C.
- Pressure (decibars) with a SBE 29 strain gage sensor.
- Percent light transmission with a Wet Labs CST-126R transmissometer across a 25 cm distance at the red light wavelength 660 nm. Data are presented as a percentage relative to pure water.
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Data Processing Description

Note: The Brunt-Vaisala Frequency (N-squared) data were reprocessed by Frank Bub with raw data calculated over 1 m intervals, rather than smoothed over 5 m bins. The 5 m bins did not work well with inshore profiles. Negative numbers indicate instability. Use data with caution.

Derived data are calculated using Matlab and/or UNH algorithms developed in accordance with standards prescribed by Fofonoff and Millard, 1983.

[[table of contents](#) | [back to top](#)]

Data Files

File

ctd_fv.csv(Comma Separated Values (.csv), 259.56 KB)
 MD5:14edbe4cc12c450265ac7d0ec65b6226

Primary data file for dataset ID 2419

[[table of contents](#) | [back to top](#)]

Parameters

Parameter	Description	Units
cruiseid	cruise identification, i.e. SC9801	
si	scientific investigator's name	
station	station number	
lat	latitude, negative = South	decimal degrees
lon	longitude, negative = West	decimal degrees
time_gmt	time, at bottom of cast	HHmm, GMT
day_gmt	day of month	GMT
month_gmt	month of year	GMT
year	year	GMT
depth_w	depth of water	meters
nbin	number of data cycles per press/bin average	
press	depth of sample as pressure	decibars
temp	temperature	degrees centigrade
sal	salinity	PSU
sigma_0	sigma-theta, potential density	kilograms/meter ³
depth	sample depth	decimal meters
potemp	potential temperature	degrees centigrade
cond	conductivity	siemens/meter
light_trans	light transmission, using a transmissometer	per cent
fluor	fluorescence, chlorophyll conc.	micrograms/liter
par_scalar	photosynthetically active radiation, scalar (400-700nm)	microEinsteins/second/meter ²
o2	dissolved oxygen	milliliters/liter
bvfq	Brunt-Vaisaila Frequency (N-squared)	1/second ²
dynh_0	dynamic height, ref. to surface	meters
sound_vel		

[[table of contents](#) | [back to top](#)]

Instruments

Dataset-specific Instrument Name	CTD Seabird 25
Generic Instrument Name	CTD Sea-Bird 25
Dataset-specific Description	The UNH SeaBird SBE-25 SeaLogger measures - Temperature (degrees C) with a SeaBird SBE-3F. Conductivity (Siemens/m) with a SeaBird SBE-4C. Pressure (decibars) with a SBE 29 strain gage sensor. Percent light transmission with a Wet Labs CST-126R transmissometer across a 25 cm distance at the red light wavelength 660 nm. Data are presented as a percentage relative to pure water. Chlorophyll concentration in micrograms/liter with a Wet Labs WETStar Fluorometer model 9607003. PAR (photosynthetically active radiation) with a Biospherical QPS-200PD which observes an upper hemispherical total irradiance in quanta/sq-cm/sec. Dissolved oxygen with a SBE-23Y (Yellow Springs Instrument) in milliliters/liter. During a cast, sensors are flushed with a SBE-5T pump at approximately 25 ml/s. The system samples and stores all data at 8 Hz (8 samples/ second). Profiling rates should be 20 meters/minute for an average of 24 samples/1 m pressure level. Normally only the downcasts are analyzed (unless a problem is noted). Sensors are factory calibrated annually.
Generic Instrument Description	The Sea-Bird SBE 25 SEALOGGER CTD is battery powered and is typically used to record data in memory, eliminating the need for a large vessel, electrical sea cable, and on-board computer. All SBE 25s can also operate in real-time, transmitting data via an opto-isolated RS-232 serial port. Temperature and conductivity are measured by the SBE 3F Temperature sensor and SBE 4 Conductivity sensor (same as those used on the premium SBE 9plus CTD). The SBE 25 also includes the SBE 5P (plastic) or 5T (titanium) Submersible Pump and TC Duct. The pump-controlled, TC-ducted flow configuration significantly reduces salinity spiking caused by ship heave, and in calm waters allows slower descent rates for improved resolution of water column features. Pressure is measured by the modular SBE 29 Temperature Compensated Strain-Gauge Pressure sensor (available in eight depth ranges to suit the operating depth requirement). The SBE 25's modular design makes it easy to configure in the field for a wide range of auxiliary sensors, including optional dissolved oxygen (SBE 43), pH (SBE 18 or SBE 27), fluorescence, transmissivity, PAR, and optical backscatter sensors. More information from Sea-Bird Electronics: http://www.seabird.com .

[[table of contents](#) | [back to top](#)]

Deployments

SC9801

Website	https://www.bco-dmo.org/deployment/57481
Platform	R/V Susan and Caitlyn
Report	http://globec.who.edu/globec-dir/reports/sc9801/progress-report.html
Start Date	1998-02-21
End Date	1998-02-22
Description	<p>Sampling at two stations in Wilkinson Basin. At each station, a CTD cast and two bongo tows were taken. The bongo net rigging and deployment were comparable to that of the U.S. GLOBEC Broadscale Surveys (with one 150 μm and one 333 μm mesh net) and the sample preservation and curation were done identically. Process cruise.</p> <p>Methods & Sampling The UNH SeaBird SBE-25 SeaLogger measures: Temperature (degrees C) with a SeaBird SBE-3F. Conductivity (Siemens/m) with a SeaBird SBE-4C. Pressure (decibars) with a SBE 29 strain gage sensor. Percent light transmission with a Wet Labs CST-126R transmissometer across a 25 cm distance at the red light wavelength 660 nm. Data are presented as a percentage relative to pure water. Chlorophyll concentration in micrograms/liter with a Wet Labs WETStar Fluorometer model 9607003. PAR (photosynthetically active radiation) with a Biospherical QPS-200PD which observes an upper hemispherical total irradiance in quanta/sq-cm/sec. Dissolved oxygen with a SBE-23Y (Yellow Springs Instrument) in milliliters/liter. During a cast, sensors are flushed with a SBE-5T pump at approximately 25 ml/s. The system samples and stores all data at 8 Hz (8 samples/ second). Profiling rates should be 20 meters/minute for an average of 24 samples/1 m pressure level. Normally only the downcasts are analyzed (unless a problem is noted). Sensors are factory calibrated annually.</p> <p>Processing Description Note: The Brunt-Vaisala Frequency (N-squared) data were reprocessed by Frank Bub with raw data calculated over 1 m intervals, rather than smoothed over 5 m bins. The 5 m bins did not work well with inshore profiles. Negative numbers indicate instability. Use data with caution. Derived data are calculated using Matlab and/or UNH algorithms developed in accordance with standards prescribed by Fofonoff and Millard, 1983.</p>

SC9802

Website	https://www.bco-dmo.org/deployment/57479
Platform	R/V Susan and Caitlyn
Start Date	1998-04-26
End Date	1998-04-27
Description	<p>process</p> <p>Methods & Sampling The UNH SeaBird SBE-25 SeaLogger measures: Temperature (degrees C) with a SeaBird SBE-3F. Conductivity (Siemens/m) with a SeaBird SBE-4C. Pressure (decibars) with a SBE 29 strain gage sensor. Percent light transmission with a Wet Labs CST-126R transmissometer across a 25 cm distance at the red light wavelength 660 nm. Data are presented as a percentage relative to pure water. Chlorophyll concentration in micrograms/liter with a Wet Labs WETStar Fluorometer model 9607003. PAR (photosynthetically active radiation) with a Biospherical QPS-200PD which observes an upper hemispherical total irradiance in quanta/sq-cm/sec. Dissolved oxygen with a SBE-23Y (Yellow Springs Instrument) in milliliters/liter. During a cast, sensors are flushed with a SBE-5T pump at approximately 25 ml/s. The system samples and stores all data at 8 Hz (8 samples/ second). Profiling rates should be 20 meters/minute for an average of 24 samples/1 m pressure level. Normally only the downcasts are analyzed (unless a problem is noted). Sensors are factory calibrated annually.</p> <p>Processing Description Note: The Brunt-Vaisala Frequency (N-squared) data were reprocessed by Frank Bub with raw data calculated over 1 m intervals, rather than smoothed over 5 m bins. The 5 m bins did not work well with inshore profiles. Negative numbers indicate instability. Use data with caution. Derived data are calculated using Matlab and/or UNH algorithms developed in accordance with standards prescribed by Fofonoff and Millard, 1983.</p>

SC9803

Website	https://www.bco-dmo.org/deployment/57480
Platform	R/V Susan and Caitlyn
Start Date	1998-06-02
End Date	1998-06-03
Description	<p>process</p> <p>Methods & Sampling The UNH SeaBird SBE-25 SeaLogger measures: Temperature (degrees C) with a SeaBird SBE-3F. Conductivity (Siemens/m) with a SeaBird SBE-4C. Pressure (decibars) with a SBE 29 strain gage sensor. Percent light transmission with a Wet Labs CST-126R transmissometer across a 25 cm distance at the red light wavelength 660 nm. Data are presented as a percentage relative to pure water. Chlorophyll concentration in micrograms/liter with a Wet Labs WETStar Fluorometer model 9607003. PAR (photosynthetically active radiation) with a Biospherical QPS-200PD which observes an upper hemispherical total irradiance in quanta/sq-cm/sec. Dissolved oxygen with a SBE-23Y (Yellow Springs Instrument) in milliliters/liter. During a cast, sensors are flushed with a SBE-5T pump at approximately 25 ml/s. The system samples and stores all data at 8 Hz (8 samples/ second). Profiling rates should be 20 meters/minute for an average of 24 samples/1 m pressure level. Normally only the downcasts are analyzed (unless a problem is noted). Sensors are factory calibrated annually.</p> <p>Processing Description Note: The Brunt-Vaisala Frequency (N-squared) data were reprocessed by Frank Bub with raw data calculated over 1 m intervals, rather than smoothed over 5 m bins. The 5 m bins did not work well with inshore profiles. Negative numbers indicate instability. Use data with caution. Derived data are calculated using Matlab and/or UNH algorithms developed in accordance with standards prescribed by Fofonoff and Millard, 1983.</p>

[[table of contents](#) | [back to top](#)]

Project Information

U.S. GLOBEC Georges Bank (GB)

Website: http://globec.who.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.

[[table of contents](#) | [back to top](#)]

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).

[[table of contents](#) | [back to top](#)]

Funding

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

[[table of contents](#) | [back to top](#)]