

# Extracted Chlorophyll and Phaeopigment data collected from R/V Endeavor cruises EN259, EN262, EN264, EN266, and EN267II in the Gulf of Maine and Georges Bank in 1995 as part of the U.S. GLOBEC program (GB project)

**Website:** <https://www.bco-dmo.org/dataset/2416>

**Data Type:** Cruise Results

**Version:** 1

**Version Date:** 2005-08-05

## Project

» [U.S. GLOBEC Georges Bank](#) (GB)

## Program

» [U.S. GLOBal ocean ECosystems dynamics](#) (U.S. GLOBEC)

Contributors	Affiliation	Role
<a href="#">Gifford, Dian J.</a>	University of Rhode Island (URI-GSO)	Principal Investigator
<a href="#">Manning, James P.</a>	Northeast Fisheries Science Center - Woods Hole (NOAA NEFSC)	Co-Principal Investigator
<a href="#">Allison, Dicky</a>	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

## Abstract

Extracted Chlorophyll and Phaeopigment data collected from R/V Endeavor cruises EN259, EN262, EN264, EN266, and EN267II in the Gulf of Maine and Georges Bank in 1995 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](#)

## Coverage

**Spatial Extent:** N:42.3192 E:-65.7268 S:40.5347 W:-68.9588

**Temporal Extent:** 1995-01-11 - 1995-06-16

## Dataset Description

## Extracted Chlorophyll and Phaeopigment

**DMO note:** The data reported consists of three replicates per each depth horizon sampled.

**PI Responsible:** Dian J. Gifford

Samples for water column chlorophyll and phaeopigment were collected and analyzed during the following Vital

rates 1995 U.S. GLOBEC Georges Bank process cruises:

- EN259
- EN262
- EN264
- EN266
- EN267B (aka EN267II and EN267 LEG 2)

**Water Collection:** Seawater was collected using 10-L teflon-lined Go-flo bottles mounted on the Neil Brown CTD rosette. Water was drained into opaque brown 1-L bottles immediately after collection and refrigerated until processed. Samples were collected onto filters within one hour of water collection. In areas where the water column was well mixed, water was collected from the top, middle and bottom of the water column. When the water column was stratified, water was collected from the top, middles and bottom of the water column as well as around the hydrographic features of interest.

**Sample Processing:** Samples were prepared for total, <20  $\mu\text{m}$ , and <5  $\mu\text{m}$  chlorophyll and phaeopigment. Samples for total pigments consisted of bulk seawater. Samples for < 20  $\mu\text{m}$  and < 5  $\mu\text{m}$  pigments were passed gently through clean Nitex meshes of appropriate porosity and the filtrate retained for analysis. Three replicate 50-ml samples of each size fraction were collected onto 25 mm GF/F filters, placed into 5 ml of 90% acetone in a capped test tube, and extracted in the freezer for 24 hours prior to analysis.

**Sample Analysis:** The filters were removed from defrosted test tubes with a clean stainless steel spatula, the tube wiped clean with a Kimwipe, and samples read on a Turner Designs Model 10 fluorometer before and after acidification with 10% HCl (Parsons et al., 1984).

**Caveat:** In general, pigment concentrations in the <5  $\mu\text{m}$  samples were approximately equal to the <20  $\mu\text{m}$  samples (i.e., there was very little chlorophyll in the 5-20  $\mu\text{m}$  size range: most chlorophyll < 20  $\mu\text{m}$  was also < 5  $\mu\text{m}$ ). Because of the difficulty of passing seawater quantitatively through the 5  $\mu\text{m}$  mesh, the <5  $\mu\text{m}$  data are more variable than the Total and < 20  $\mu\text{m}$  data. To avoid confusion, the < 5  $\mu\text{m}$  data are not included in the data files. The data are available, and scientific investigators who need it should contact the PI directly.

**Data Use:** The data are available for use by any scientific investigator who wishes to use them. The PI must be consulted prior to publication.

#### **Data Submitted by:**

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*updated: Aug 05, 2005, gfh*

## **Methods & Sampling**

Seawater was collected using 10-L teflon-lined Go-flo bottles mounted on the Neil Brown CTD rosette. Water was drained into opaque brown 1-L bottles immediately after collection and refrigerated until processed. Samples were collected onto filters within one hour of water collection. In areas where the water column was well mixed, water was collected from the top, middle and bottom of the water column. When the water column was stratified, water was collected from the top, middles and bottom of the water column as well as around

the hydrographic features of interest.

## Data Processing Description

**Sample Processing:** Samples were prepared for total, <20  $\mu\text{m}$ , and <5  $\mu\text{m}$  chlorophyll and phaeopigment. Samples for total pigments consisted of bulk seawater. Samples for < 20  $\mu\text{m}$  and < 5  $\mu\text{m}$  pigments were passed gently through clean Nitex meshes of appropriate porosity and the filtrate retained for analysis. Three replicate 50-ml samples of each size fraction were collected onto 25 mm GF/F filters, placed into 5 ml of 90% acetone in a capped test tube, and extracted in the freezer for 24 hours prior to analysis.

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

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## Data Files

File
<b>chlor_phaeo.csv</b> (Comma Separated Values (.csv), 36.55 KB) MD5:c9b5eafd5f0cadcb5fe12969a2deae7f
Primary data file for dataset ID 2416

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

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## Parameters

Parameter	Description	Units
cruiseid	Cruise identification	
leg	Leg of cruise	
cast	Cast number	
day_local	Day of month, local time	
month_local	Month of year, local time	
year	Year	
time_local	Local time	HHmm
lat	Latitude	decimal degrees
lon	Longitude	decimal degrees
depth	Depth of sample	meters
chl_a	Total chlorophyll a	micrograms/liter
phaeo	Total phaeopigment	micrograms/liter
chl_a_20u	chlorophyll a pigment, less than 20 micron size fraction	micrograms/liter
phaeo_20u	phaeopigment, less than 20 micron size fraction	micrograms/liter

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

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## Instruments

<b>Dataset-specific Instrument Name</b>	Go-flo Bottle
<b>Generic Instrument Name</b>	GO-FLO Bottle
<b>Dataset-specific Description</b>	Seawater was collected using 10-L teflon-lined Go-flo bottles mounted on the Neil Brown CTD rosette.
<b>Generic Instrument Description</b>	GO-FLO bottle cast used to collect water samples for pigment, nutrient, plankton, etc. The GO-FLO sampling bottle is specially designed to avoid sample contamination at the surface, internal spring contamination, loss of sample on deck (internal seals), and exchange of water from different depths.

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

## Deployments

### EN259

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57399">https://www.bco-dmo.org/deployment/57399</a>
<b>Platform</b>	R/V Endeavor
<b>Report</b>	<a href="http://globec.who.edu/globec-dir/reports/en259.html">http://globec.who.edu/globec-dir/reports/en259.html</a>
<b>Start Date</b>	1995-01-10
<b>End Date</b>	1995-01-22
<b>Description</b>	<p>process zoology</p> <p><b>Methods &amp; Sampling</b>  Seawater was collected using 10-L teflon-lined Go-flo bottles mounted on the Neil Brown CTD rosette. Water was drained into opaque brown 1-L bottles immediately after collection and refrigerated until processed. Samples were collected onto filters within one hour of water collection. In areas where the water column was well mixed, water was collected from the top, middle and bottom of the water column. When the water column was stratified, water was collected from the top, middles and bottom of the water column as well as around the hydrographic features of interest.</p> <p><b>Processing Description</b>  Sample Processing: Samples were prepared for total,</p>

### EN262

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57402">https://www.bco-dmo.org/deployment/57402</a>
<b>Platform</b>	R/V Endeavor
<b>Report</b>	<a href="http://globec.whoi.edu/globec-dir/reports/en262/EN262.pdf">http://globec.whoi.edu/globec-dir/reports/en262/EN262.pdf</a>
<b>Start Date</b>	1995-02-23
<b>End Date</b>	1995-03-10
<b>Description</b>	<p>process zoology</p> <p><b>Methods &amp; Sampling</b>  Seawater was collected using 10-L teflon-lined Go-flo bottles mounted on the Neil Brown CTD rosette. Water was drained into opaque brown 1-L bottles immediately after collection and refrigerated until processed. Samples were collected onto filters within one hour of water collection. In areas where the water column was well mixed, water was collected from the top, middle and bottom of the water column. When the water column was stratified, water was collected from the top, middles and bottom of the water column as well as around the hydrographic features of interest.</p> <p><b>Processing Description</b>  Sample Processing: Samples were prepared for total,</p>

#### EN264

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57404">https://www.bco-dmo.org/deployment/57404</a>
<b>Platform</b>	R/V Endeavor
<b>Report</b>	<a href="http://globec.whoi.edu/globec-dir/reports/en264.html">http://globec.whoi.edu/globec-dir/reports/en264.html</a>
<b>Start Date</b>	1995-03-26
<b>End Date</b>	1995-04-08
<b>Description</b>	<p>process zoology</p> <p><b>Methods &amp; Sampling</b>  Seawater was collected using 10-L teflon-lined Go-flo bottles mounted on the Neil Brown CTD rosette. Water was drained into opaque brown 1-L bottles immediately after collection and refrigerated until processed. Samples were collected onto filters within one hour of water collection. In areas where the water column was well mixed, water was collected from the top, middle and bottom of the water column. When the water column was stratified, water was collected from the top, middles and bottom of the water column as well as around the hydrographic features of interest.</p> <p><b>Processing Description</b>  Sample Processing: Samples were prepared for total,</p>

#### EN266

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57406">https://www.bco-dmo.org/deployment/57406</a>
<b>Platform</b>	R/V Endeavor
<b>Report</b>	<a href="http://globec.whoi.edu/globec-dir/reports/en266/EN266.pdf">http://globec.whoi.edu/globec-dir/reports/en266/EN266.pdf</a>
<b>Start Date</b>	1995-04-26
<b>End Date</b>	1995-05-08
<b>Description</b>	<p>process zoology</p> <p><b>Methods &amp; Sampling</b>  Seawater was collected using 10-L teflon-lined Go-flo bottles mounted on the Neil Brown CTD rosette. Water was drained into opaque brown 1-L bottles immediately after collection and refrigerated until processed. Samples were collected onto filters within one hour of water collection. In areas where the water column was well mixed, water was collected from the top, middle and bottom of the water column. When the water column was stratified, water was collected from the top, middles and bottom of the water column as well as around the hydrographic features of interest.</p> <p><b>Processing Description</b>  Sample Processing: Samples were prepared for total,</p>

## EN267II

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57408">https://www.bco-dmo.org/deployment/57408</a>
<b>Platform</b>	R/V Endeavor
<b>Report</b>	<a href="http://globec.whoi.edu/globec-dir/reports/en267L2/EN267L2.pdf">http://globec.whoi.edu/globec-dir/reports/en267L2/EN267L2.pdf</a>
<b>Start Date</b>	1995-06-08
<b>End Date</b>	1995-06-19
<b>Description</b>	<p>process</p> <p><b>Methods &amp; Sampling</b>  Seawater was collected using 10-L teflon-lined Go-flo bottles mounted on the Neil Brown CTD rosette. Water was drained into opaque brown 1-L bottles immediately after collection and refrigerated until processed. Samples were collected onto filters within one hour of water collection. In areas where the water column was well mixed, water was collected from the top, middle and bottom of the water column. When the water column was stratified, water was collected from the top, middles and bottom of the water column as well as around the hydrographic features of interest.</p> <p><b>Processing Description</b>  Sample Processing: Samples were prepared for total,</p>

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

## Project Information

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

**Website:** [http://globec.whoi.edu/globec\\_program.html](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.

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

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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).

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

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## Funding

Funding Source	Award
National Science Foundation (NSF)	<a href="#">unknown GB NSF</a>
National Oceanic and Atmospheric Administration (NOAA)	<a href="#">unknown GB NOAA</a>

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