

Wind Stress from GLOBEC Mooring ST1, the Nantucket Lightship, and buoys 44005, 44003, 44008, 44011, and 44018 in the Gulf of Maine and Georges Bank from 1975-2007 (GB project)

Website: <https://www.bco-dmo.org/dataset/2330>

Data Type: Cruise Results

Version: 1

Version Date: 2005-07-13

Project

» [U.S. GLOBEC Georges Bank](#) (GB)

Program

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

| Contributors | Affiliation | Role |
|-----------------------------------|--|------------------------|
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| Allison, Dicky | Woods Hole Oceanographic Institution (WHOI BCO-DMO) | BCO-DMO Data Manager |

Abstract

Wind Stress from GLOBEC Mooring ST1, the Nantucket Lightship, and buoys 44005, 44003, 44008, 44011, and 44018 in the Gulf of Maine and Georges Bank from 1975-2007

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Coverage

Spatial Extent: N:43 E:-66 S:40 W:-70

Temporal Extent: 1975 - 2007

Dataset Description

Wind Stress calculated for NOAA Weather Buoys, Nantucket Lightship and Globec Mooring ST1

Wind Stress as calculated by Large & Pond (JPO, '81) where the wind is corrected to 10m elevation.

Matlab code ("wstr.m") & raw data available on request from Jim Manning.

Additional information is available from Manning & Strout (2001).

Buoy/station location history:

Buoy ID 44003
LAT/LON
OPER. PERIOD (month/year)
40.8 N./68.5 W.
03/77-03/84

BUOY ID 44005
LAT/LON
OPER. PERIOD
42.7 N./68.3 W.
12/78-03/88

42.7 N./68.6 W.
06/88-08/91

42.6 N./68.6 W.
01/92-01/94

42.9 N./68.9 W.
04/94-03/01

43.2 N./69.2 W.
03/01-09/02

43.2 N./69.2 W.
02/03-06/03

Buoy ID 44008
LAT/LON
OPER. PERIOD
40.5 N./69.4 W.
8/82-06/03

Buoy ID 44011
LAT/LON
OPER. PERIOD
41.1 N./66.6 W.
05/84-05/03

Buoy ID 44018
LAT/LON
OPER. PERIOD
41.3 N./69.3 W.
07/02-06/03

Nantucket Lightship (ntls)
LAT/LON
OPER. PERIOD
40.5 N./69.46 W.
1975-1981

GLOBEC mooring site ST1
LAT/LON
OPER. PERIOD
40.864 N./67.558 W.

01/95-08/95

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updated: 13 July 2005, gfh

Methods & Sampling

Wind Stress as calculated by Large & Pond (JPO, 1981) where the wind is corrected to 10m elevation.

Data Processing Description

Matlab code ("wstr.m") & raw data available on request from Jim Manning. Additional information is available in Manning and Strout (2001)

BUOY ID 44005
LAT/LON
OPER. PERIOD
42.7 N./68.3 W.
12/78-03/88

42.7 N./68.6 W.
06/88-08/91

42.6 N./68.6 W.
01/92-01/94

42.9 N./68.9 W.
04/94-03/01

43.2 N./69.2 W.
03/01-09/02

43.2 N./69.2 W.
02/03-06/03

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Data Files

| File |
|--|
| wind_stress.csv (Comma Separated Values (.csv), 7.34 MB) MD5:ee27c3e151556e7cc3c9fe5848e24798 Primary data file for dataset ID 2330 |

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Related Publications

Large, W. G., & Pond, S. (1981). Open Ocean Momentum Flux Measurements in Moderate to Strong Winds.

Journal of Physical Oceanography, 11(3), 324–336. doi:10.1175/1520-0485(1981)011<0324:oomfmi>2.0.co;2
[https://doi.org/10.1175/1520-0485\(1981\)011<0324:OOMFMI>2.0.CO;2](https://doi.org/10.1175/1520-0485(1981)011<0324:OOMFMI>2.0.CO;2)

Methods

Manning, J., & Strout, G. (2001). Georges Bank Winds: 1975–1997. Deep Sea Research Part II: Topical Studies in Oceanography, 48(1-3), 115–135. doi:10.1016/s0967-0645(00)00116-8 [https://doi.org/10.1016/S0967-0645\(00\)00116-8](https://doi.org/10.1016/S0967-0645(00)00116-8)

Results

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Parameters

| Parameter | Description | Units |
|------------|--|-----------------|
| mooring | mooring/site identification, i.e. 440005 | |
| year | year, i.e. 1995 | |
| yrday0_gmt | yearday/time GMT | decimal yearday |
| taux | eastward wind stress, negative = West | pascals |
| tauy | northward wind stress, negative = South | pascals |

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Instruments

| | |
|---|--|
| Dataset-specific Instrument Name | Anemometer |
| Generic Instrument Name | Anemometer |
| Dataset-specific Description | An anemometer is an instrument used to measure wind speed. |
| Generic Instrument Description | An anemometer is a device for measuring the velocity or the pressure of the wind. It is commonly used to measure wind speed. Aboard research vessels, it is often mounted with other meteorological instruments and sensors. |

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Deployments

ST1

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57363 |
| Platform | GLOBEC Mooring ST1 |
| Start Date | 1995-02-01 |
| End Date | 1995-08-27 |
| Description | <p>Stratification Study mooring Georges Bank Stratification Study ST1 mooring array</p> <p>Methods & Sampling Wind Stress as calculated by Large & Pond (JPO, 1981) where the wind is corrected to 10m elevation.</p> <p>Processing Description Matlab code ("wstr.m") & raw data available on request from Jim Manning. Additional information is available in the manuscript Georges Bank Winds article, as a pdf file.. GLOBEC mooring site ST1 LAT/LON OPER. PERIOD 40.864 N./67.558 W. 01/95-08/95</p> |

NTLS

| | |
|--------------------|--|
| Website | https://www.bco-dmo.org/deployment/57694 |
| Platform | Nantucket Lightship |
| Start Date | 1975-04-29 |
| End Date | 1982-01-01 |
| Description | <p>Nantucket Lightship</p> <p>Methods & Sampling Wind Stress as calculated by Large & Pond (JPO, 1981) where the wind is corrected to 10m elevation.</p> <p>Processing Description Matlab code ("wstr.m") & raw data available on request from Jim Manning. Additional information is available in the manuscript Georges Bank Winds article, as a pdf file.. Nantucket Lightship (ntls) LAT/LON OPER. PERIOD 40.5 N./69.46 W. 1975-1981</p> |

Buoy44005

| | |
|--------------------|--|
| Website | https://www.bco-dmo.org/deployment/57696 |
| Platform | NDBC44005 Mooring |
| Report | http://www.nefsc.noaa.gov/epd/ocean/MainPage/ManningStroutWind.pdf |
| Start Date | 1978-12-15 |
| End Date | 2005-12-30 |
| Description | <p>NOAA Automated Large Navigation Buoy owned and operated by the National Data Buoy Center. See http://www.ndbc.noaa.gov/station_page.php?station=44005</p> <p>Methods & Sampling Wind Stress as calculated by Large & Pond (JPO, 1981) where the wind is corrected to 10m elevation.</p> <p>Processing Description Matlab code ("wstr.m") & raw data available on request from Jim Manning. Additional information is available in the manuscript Georges Bank Winds article, as a pdf file.. BUOY ID 44005 LAT/LON OPER. PERIOD 42.7 N./68.3 W. 12/78-03/88 42.7 N./68.6 W. 06/88-08/91 42.6 N./68.6 W. 01/92-01/94 42.9 N./68.9 W. 04/94-03/01 43.2 N./69.2 W. 03/01-09/02 43.2 N./69.2 W. 02/03-06/03</p> |

Buoy44003

| | |
|--------------------|--|
| Website | https://www.bco-dmo.org/deployment/57695 |
| Platform | NDBC44003 Mooring |
| Report | http://www.nefsc.noaa.gov/epd/ocean/MainPage/ManningStroutWind.pdf |
| Start Date | 1977-01-24 |
| End Date | 1983-12-30 |
| Description | <p>NOAA Automated Large Navigation Buoy owned by the National Data Buoy Center. http://www.ndbc.noaa.gov/station_page.php?station=44003</p> <p>Methods & Sampling Wind Stress as calculated by Large & Pond (JPO, 1981) where the wind is corrected to 10m elevation.</p> <p>Processing Description Matlab code ("wstr.m") & raw data available on request from Jim Manning. Additional information is available in the manuscript Georges Bank Winds article, as a pdf file.. Buoy ID 44003 LAT/LON OPER. PERIOD (month/year) 40.8 N./68.5 W. 03/77-03/84</p> |

Buoy44008

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57697 |
| Platform | NDBC44008 Mooring |
| Report | http://www.nefsc.noaa.gov/epd/ocean/MainPage/ManningStroutWind.pdf |
| Start Date | 1982-08-17 |
| End Date | 2007-05-30 |
| Description | <p>NOAA Automated Large Navigation Buoy owned and operated by the National Data Buoy Center. See http://www.ndbc.noaa.gov/station_page.php?station=44008</p> <p>Methods & Sampling Wind Stress as calculated by Large & Pond (JPO, 1981) where the wind is corrected to 10m elevation.</p> <p>Processing Description Matlab code ("wstr.m") & raw data available on request from Jim Manning. Additional information is available in the manuscript Georges Bank Winds article, as a pdf file.. Buoy ID 44008 LAT/LON OPER. PERIOD 40.5 N./69.4 W. 8/82-06/03</p> |

Buoy440011

| | |
|--------------------|--|
| Website | https://www.bco-dmo.org/deployment/57698 |
| Platform | NDBC44011 Mooring |
| Report | http://www.nefsc.noaa.gov/epd/ocean/MainPage/ManningStroutWind.pdf |
| Start Date | 1984-05-22 |
| End Date | 2007-05-30 |
| Description | <p>NOAA automated Large Navigation Buoy owned by National Data Buoy Center. See http://www.ndbc.noaa.gov/station_page.php?station=44011.</p> <p>Methods & Sampling Wind Stress as calculated by Large & Pond (JPO, 1981) where the wind is corrected to 10m elevation.</p> <p>Processing Description Matlab code ("wstr.m") & raw data available on request from Jim Manning. Additional information is available in the manuscript Georges Bank Winds article, as a pdf file.. Buoy ID 44011 LAT/LON OPER. PERIOD 41.1 N./66.6 W. 05/84-05/03</p> |

Buoy440018

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57699 |
| Platform | NDBC44018 Mooring |
| Report | http://www.nefsc.noaa.gov/epd/ocean/MainPage/ManningStroutWind.pdf |
| Start Date | 2002-07-30 |
| End Date | 2007-05-30 |
| Description | <p>NOAA automated Large Navigation Buoy owned by the National Data Buoy Center. http://www.ndbc.noaa.gov/station_page.php?station=44018</p> <p>Methods & Sampling Wind Stress as calculated by Large & Pond (JPO, 1981) where the wind is corrected to 10m elevation.</p> <p>Processing Description Matlab code ("wstr.m") & raw data available on request from Jim Manning. Additional information is available in the manuscript Georges Bank Winds article, as a pdf file.. Buoy ID 44018 LAT/LON OPER. PERIOD 41.3 N./69.3 W. 07/02-06/03</p> |

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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 Oceanic and Atmospheric Administration (NOAA) | unknown GB NOAA |
| NSF Division of Ocean Sciences (NSF OCE) | OCE-9634171 |
| NSF Division of Ocean Sciences (NSF OCE) | OCE-9632758 |

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