Particulate and dissolved organic carbon and nitrogen data from multiple cruises on R/V Wecoma, R/V Atlantis, and R/V New Horizon in the Northeast Pacific from 1997-2004 (GLOBEC NEP)

Website: https://www.bco-dmo.org/dataset/3643
Data Type: Cruise Results
Version: 1
Version Date: 2012-06-11

Project
» U.S. GLOBEC Northeast Pacific (NEP)

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

Contributors	Affiliation	Role
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Abstract
This dataset contains particulate and dissolved organic carbon and nitrogen data from the GLOBEC Northeast Pacific (NEP) Long-Term Observation Program (LTOP) cruises from 1997 to 2004. The nutrient and extracted chlorophyll data that correspond to this dataset can be also be found in the BCO-DMO database. For further hydrographic information from all cruises, see cruise reports provided on the Northeast Pacific Long Term Observation Program website, or contact Dr. A Huyer at Oregon State University, COAS,104 COAS Admin. Bldg., Corvallis, OR, 97331-5503. All particulate and dissolved organic carbon and nitrogen data in this dataset include cruise station numbers to allow comparison with the hydrographic information found in other data reports.

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Coverage

Spatial Extent: **N**:44.65 **E**:-123.45 **S**:38.13 **W**:-126.05
Temporal Extent: 1997-09-19 - 2004-09-02

Dataset Description

This dataset contains particulate and dissolved organic carbon and nitrogen data from the GLOBEC Northeast Pacific (NEP) Long-Term Observation Program (LTOP) cruises from 1997 to 2004. The nutrient and extracted chlorophyll data that correspond to this dataset can be also be found in the BCO-DMO database.

For further hydrographic information from all cruises, see cruise reports provided on the Northeast Pacific Long Term Observation Program website, or contact Dr. A Huyer at Oregon State University, COAS,104 COAS Admin. Bldg., Corvallis, OR, 97331-5503. All particulate and dissolved organic carbon and nitrogen data in this

dataset include cruise station numbers to allow comparison with the hydrographic information found in other data reports.

Methods & Sampling

At each station, water samples were collected from various depths with 5 L Niskin bottles on a 12 bottle rosette. Complete information on sample collection and analyses is available in the Data Report (PDF).

Data Processing Description

Complete analyses information is available in the Data Report (PDF).

Data are presented as depth profiles for each station along latitudinal lines. Lines are listed by decreasing latitude and stations are listed from inshore to offshore. Cruise ID and station numbers are included for reference to other cruise data. GMT date and GMT time indicate the date/time at the start of the CTD cast. Depth (pressure in dbar), temperature (°C), and salinity are also included as measured by CTD when Niskin bottles were fired (upcast). Units for POC, PON, DOC and DON are all µM.

BCO-DMO received the data in 8 Excel files, one for each year of sampling. The following modifications were made: deleted blank rows; replaced blank cells with 'nd'; changed column names to conform to BCO-DMO convention; converted .XLS files to .DAT; original time in HH:MM format and date in mm/dd/YYYY format were removed from display; added day_gmt, month_gmt, and time_gmt columns, which are calculated from the original date and time columns. The 2004 Wecoma cruise ID was corrected from 'W0409' to 'W0408D' and the Data Report was updated in June 2012 to reflect the change.

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Data Files

File
orgCN.csv(Comma Separated Values (.csv), 700.99 KB)   MD5:27e9fb0f19f345c2c69b84cfea9156bb
Primary data file for dataset ID 3643

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Parameters

Parameter	Description	Units
year	Year in YYYY format.	dimensionless
cruise_id	Alpha-numeric cruise ID number.	dimensionless
station_std	Standard station identifier; provides reference to other GLOBEC NEP cruise data. Originally named 'Station Name'.	dimensionless
station	Station number.	dimensionless
month_gmt	Month in GMT format. Converted from original 'GMT Date' field, which was in mm/dd/YYYY format.	dimensionless
day_gmt	Day in GMT format. Converted from original 'GMT Date' field, which was in mm/dd/YYYY format.	dimesionless
time_gmt	Time in GMT format. Converted from original 'GMT Time' field, which was in HH:MM format.	HHMM, 24-hr clock

lat	Latitude, positive values = North. Originally named 'Lat N'.	decimal degrees
lon	Longitude, negative values = West. Originally named 'Long W'.	decimal degrees
press	Pressure (in dbar) as measured by CTD when Niskin bottles were fired (upcast). Proxy for depth.	decibars
temp	Water temperature as measured by CTD when Niskin bottles were fired (upcast).	degrees C
sal	Salinity as measured by CTD when Niskin bottles were fired (upcast).	unknown
TN	Total Nitrogen (micromolar). Fliers greater than 1sd from the mean replicate value were deleted from the dataset. Other TN data were deleted if values were abnormally high or low according to the depth profile or expected ranges.	micromolar
TOC	Total organic Carbon (micromolar). Data from the following cruises have not been analyzed: Sept 1997 (NH 45-85), Nov 1997 (NH 25-65, FM, CR and COC lines), Jan 1998 (part of NH line, all of FM line), Apr 1998 (parts of NH, all of FM, CR and COC lines), Nov 1998 (all), all cruises in 1999, and Feb 2000. See the data report for a description of outliers omitted from dataset.	micromolar
POC	Particulate organic Carbon (micromolar). See the data report for a description of outliers omitted from dataset.	micromolar
PON	Particulate organic Nitrogen (micromolar). See the data report for a description of outliers omitted from dataset.	micromolar
DOC	Dissolved organic Carbon (micromolar). DOC was determined by subtracting POC values from TOC values. Individual data points were deleted if the coefficient of variation remained greater than 15% after removing data points greater than one sd from the mean. Various points were deleted if the sample value was determined to be below the detection limit. If POC data were missing, the corresponding DOC values were not calculated.	micromolar
DON	Dissolved organic Nitrogen (micromolar). DON was determined by subtracting PON and DIN (NH4, NO3-, and NO2-) values from TN values. Individual data points were deleted if the coefficient of variation remained greater than 15% after removing data points greater than one sd from the mean. Various points were deleted if the sample value was determined to be below the detection limit. If PON data were missing, DON values were left in if they met the following criteria: sample depth was > 50m and surrounding values were less than or equal to 10% of the DON values. Other DON data were deleted if values were abnormally high or low according to the depth profile or expected ranges.	micromolar
ISO_DateTime_UTC	Date and time (UTC) formatted to ISO8601 standard. T indicates start of time string; Z indicates UTC.	YYYY-mm-ddTHH:MM:SS.ssZ

Instruments

Dataset-specific Instrument Name	CHN Elemental Analyzer
Generic Instrument Name	CHN Elemental Analyzer
Dataset-specific Description	A Carlo Erba CNS analyzer and Control Equipment Corp. 440HA CHN elemental analyzer were used for analyses of POC and PON.
Generic Instrument Description	A CHN Elemental Analyzer is used for the determination of carbon, hydrogen, and nitrogen content in organic and other types of materials, including solids, liquids, volatile, and viscous samples.

Dataset-specific Instrument Name	Niskin bottle
Generic Instrument Name	Niskin bottle
Dataset-specific Description	At each station, water samples were collected from various depths with 5 L Niskin bottles on a 12 bottle rosette.
Generic Instrument Description	A Niskin bottle (a next generation water sampler based on the Nansen bottle) is a cylindrical, non-metallic water collection device with stoppers at both ends. The bottles can be attached individually on a hydrowire or deployed in 12, 24, or 36 bottle Rosette systems mounted on a frame and combined with a CTD. Niskin bottles are used to collect discrete water samples for a range of measurements including pigments, nutrients, plankton, etc.

Dataset-specific Instrument Name	Nutrient Autoanalyzer
Generic Instrument Name	Nutrient Autoanalyzer
Dataset-specific Description	Technicon AA-II was used for analyses of Total Nitrogen.
Generic Instrument Description	Nutrient Autoanalyzer is a generic term used when specific type, make and model were not specified. In general, a Nutrient Autoanalyzer is an automated flow-thru system for doing nutrient analysis (nitrate, ammonium, orthophosphate, and silicate) on seawater samples.

Dataset-specific Instrument Name	Total Organic Carbon Analyzer
Generic Instrument Name	Total Organic Carbon Analyzer
Dataset-specific Description	TOC analyses were perfomed using a Shimadzu TOC-500 (for 1997 and 1998 samples). The Shimadzu TOC-500 TOC analyzer measures total carbon (TC), inorganic carbon (IC) and total organic carbon (TOC) in water. TC, TOC and IC are measured by the combustion-non-dispersive infrared gas analysis method. Starting in April 2000, a Shimadzu TOC-5000A analyzer with an ASI 5000 autosampler was used.
Generic Instrument Description	A unit that accurately determines the carbon concentrations of organic compounds typically by detecting and measuring its combustion product (CO2). See description document at: http://bcodata.whoi.edu/LaurentianGreatLakes_Chemistry/bs116.pdf

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Deployments

W9709B

Website	https://www.bco-dmo.org/deployment/57621
Platform	R/V Wecoma
Start Date	1997-09-19
End Date	1997-09-20

W9711C

Website	https://www.bco-dmo.org/deployment/57622
Platform	R/V Wecoma
Start Date	1997-11-15
End Date	1997-11-22

W9801B

Website	https://www.bco-dmo.org/deployment/57623
Platform	R/V Wecoma
Start Date	1998-01-30
End Date	1998-02-02

W9804A

Website	https://www.bco-dmo.org/deployment/57624
Platform	R/V Wecoma
Start Date	1998-04-04
End Date	1998-04-10

W9808A

Website	https://www.bco-dmo.org/deployment/57625
Platform	R/V Wecoma
Start Date	1998-08-06
End Date	1998-08-14

W9809A

Website	https://www.bco-dmo.org/deployment/57626
Platform	R/V Wecoma
Start Date	1998-09-24
End Date	1998-09-26

W9811A

Website	https://www.bco-dmo.org/deployment/57627
Platform	R/V Wecoma
Start Date	1998-11-16
End Date	1998-11-20

W9902A

Website	https://www.bco-dmo.org/deployment/57628
Platform	R/V Wecoma
Start Date	1999-02-17
End Date	1999-02-18

W9904B

Website	https://www.bco-dmo.org/deployment/57629
Platform	R/V Wecoma
Start Date	1999-04-19
End Date	1999-04-22

W9907A

Website	https://www.bco-dmo.org/deployment/57630
Platform	R/V Wecoma
Start Date	1999-07-03
End Date	1999-07-09

W9909C

Website	https://www.bco-dmo.org/deployment/57631
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/sep99cr.pdf
Start Date	1999-09-22
End Date	1999-09-27

W9911A

Website	https://www.bco-dmo.org/deployment/57632
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/nov99cr.pdf
Start Date	1999-11-03
End Date	1999-11-05

W0002A

Website	https://www.bco-dmo.org/deployment/57596
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/feb00cr.pdf
Start Date	2000-02-01
End Date	2000-02-03

W0004B

Website	https://www.bco-dmo.org/deployment/57597
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/apr00cr.pdf
Start Date	2000-04-11
End Date	2000-04-17

W0007A

Website	https://www.bco-dmo.org/deployment/57599
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/jul00cr.pdf
Start Date	2000-07-07
End Date	2000-07-13

W0009A

Website	https://www.bco-dmo.org/deployment/57601
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/sep00cr.pdf
Start Date	2000-09-07
End Date	2000-09-12

W0101C

Website	https://www.bco-dmo.org/deployment/57602
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/jan01cr.pdf
Start Date	2001-01-27
End Date	2001-01-29

W0103B

Website	https://www.bco-dmo.org/deployment/57603
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/mar01cr.pdf
Start Date	2001-03-20
End Date	2001-03-24

W0107A

Website	https://www.bco-dmo.org/deployment/57604
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/jul01cr.pdf
Start Date	2001-07-06
End Date	2001-07-09

W0109A

Website	https://www.bco-dmo.org/deployment/57605
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/sep01cr.pdf
Start Date	2001-09-04
End Date	2001-09-10

W0111B

Website	https://www.bco-dmo.org/deployment/57606
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/nov01cr.pdf
Start Date	2001-11-27
End Date	2001-11-29

W0202A

Website	https://www.bco-dmo.org/deployment/57607
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/feb02cr.pdf
Start Date	2002-02-19
End Date	2002-02-21

W0204A

Website	https://www.bco-dmo.org/deployment/57608
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/apr02cr.pdf
Start Date	2002-04-04
End Date	2002-04-10

W0207A

Website	https://www.bco-dmo.org/deployment/57610
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/jul02cr.pdf
Start Date	2002-07-09
End Date	2002-07-15

AT7-21

Website	https://www.bco-dmo.org/deployment/57490
Platform	R/V Atlantis
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/sep02cr.pdf
Start Date	2002-09-27
End Date	2002-10-03
Description	funded by NSF OCE-0000733 UNOLS schedule link The original data from this cruise are available from the NSF R2R data catalog.

W0212A

Website	https://www.bco-dmo.org/deployment/57611
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/dec02cr.pdf
Start Date	2002-12-03
End Date	2002-12-05

W0302A

Website	https://www.bco-dmo.org/deployment/57612
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/feb03cr.pdf
Start Date	2003-02-14
End Date	2003-02-16

W0304A

Website	https://www.bco-dmo.org/deployment/57613
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/apr03cr.pdf
Start Date	2003-04-01
End Date	2003-04-06

NH0307A

Website	https://www.bco-dmo.org/deployment/57560
Platform	R/V New Horizon
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/jul03cr.pdf
Start Date	2003-07-02
End Date	2003-07-08

W0309B

Website	https://www.bco-dmo.org/deployment/57617
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/sep03cr.pdf
Start Date	2003-09-26
End Date	2003-10-01

W0408D

Website	https://www.bco-dmo.org/deployment/57618
Platform	R/V Wecoma
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/aug04cr.pdf
Start Date	2004-08-30
End Date	2004-09-03

Project Information

U.S. GLOBEC Northeast Pacific (NEP)

Website: http://nepglobec.bco-dmo.org

Coverage: Northeast Pacific Ocean, Gulf of Alaska

Program in a Nutshell

Goal: To understand the effects of climate variability and climate change on the distribution, abundance and production of marine animals (including commercially important living marine resources) in the eastern North Pacific. To embody this understanding in diagnostic and prognostic ecosystem models, capable of capturing the ecosystem response to major climatic fluctuations.

Approach: To study the effects of past and present climate variability on the population ecology and population dynamics of marine biota and living marine resources, and to use this information as a proxy for how the ecosystems of the eastern North Pacific may respond to future global climate change. The strong temporal variability in the physical and biological signals of the NEP will be used to examine the biophysical mechanisms through which zooplankton and salmon populations respond to physical forcing and biological interactions in the coastal regions of the two gyres. Annual and interannual variability will be studied directly through **long-term observations** and detailed **process studies**; variability at longer time scales will be examined through **retrospective analysis** of directly measured and proxy data. Coupled **biophysical models** of the ecosystems of these regions will be developed and tested using the process studies and data collected from the long-term observation programs, then further tested and improved by hindcasting selected retrospective data series.

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).

Funding