Chlorophyll-a on F/V Sea Eagle and F/V Frosti salmon trawl cruises in the Northeast Pacific in 2000 as part of the U.S. GLOBEC program (NEP project)

Website: https://www.bco-dmo.org/dataset/2463
Data Type: Cruise Results
Version: 1
Version Date: 2007-04-11

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

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

Contributors	Affiliation	Role
Brodeur, Richard D	National Oceanic and Atmospheric Administration (NOAA)	Co-Principal Investigator
Pool, Suzan S	Oregon State University (OSU-CIMRS)	Co-Principal Investigator
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Abstract
Chlorophyll-a on F/V Sea Eagle and F/V Frosti salmon trawl cruises in the Northeast Pacific in 2000 as part of the U.S. GLOBEC program (NEP project)

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Coverage

Spatial Extent: **N**:44.7043 **E**:-124.1283 **S**:41.8276 **W**:-126.0131
Temporal Extent: 2000-05-29 - 2002-08-17

Dataset Description

U.S. GLOBEC Northeast Pacific, California Current System
Mesoscale Process Studies Chlorophyll a Data

During juvenile salmonid trawling cruises, additional sampling included CTD profiles, neuston net tows, and chlorophyll a water samples. At most stations, data on all parameters were collected.

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Methods & Sampling

Replicate samples for in-vitro chlorophyll a were collected from 3-m depth with a 1-l Niskin water sampler. Sampling done at all stations at which salmon trawling was done; additional sampling at most stations was a CTD, plankton sampling.

Data Processing Description

Samples were immediately filtered through GF/F glass fiber filters, then frozen for further analysis in the laboratory. One of two replicates was processed whereas the other was a back up sample. Chlorophyll a was processed using the cold-acetone extraction method and measured with a Turner Designs 10-AU fluorometer (Arar and Collins, 1997).

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Data Files

File
chl_a_3m.csv (Comma Separated Values (.csv), 33.92 KB) MD5:9538fbfb73d628e26480cbaa60b0d569 Primary data file for dataset ID 2463

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Related Publications

Arar, E. J. & Collins, G. B. (1997). In vitro determination of chlorophyll a and phaeophtin a in marine and freshwater phytoplankton by fluorescence – USEPA Method 445.0. Revision 1.2. In: USEPA methods for determination of chemical substances in marine and estuarine environmental samples. Cincinnati, OH. URL: https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=NERL&dirEntryId=309417
Methods

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Parameters

Parameter	Description	Units
yr	year	dimensionless
cruise_id	cruise ID	dimensionless
cast	cast number within cruise	dimensionless
sta_std	standard station name	dimensionless
lat	latitude (decimal degrees)	decimal degrees
lon	longitude (decimal degrees)	decimal degrees
depth_w	bottom depth of station (meters)	meters
month_local	local month	dimensionless
day_local	local day	dimensionless
time_local	local time (24-hr)	dimensionless
inst	sampling instrument	dimensionless
depth	sample depth (meters)	meters
chl_a	chlorophyll a concentration (ug/L)	ug/L
phaeo	phaeophytin a concentration (ug/L)	ug/L
comments	comments about particular sample	dimensionless
timezone	Time zone, relative to GMT time.	hours
ship	Name of the vessel.	dimensionless

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Instruments

Dataset-specific Instrument Name	Niskin Bottle
Generic Instrument Name	Niskin bottle
Dataset-specific Description	Niskin bottle sample at 3-m depth. Replicate samples for in-vitro chlorophyll a were collected from 3-m depth with a 1-l Niskin water sampler.
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.

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Deployments

SE0005

Website	https://www.bco-dmo.org/deployment/57576
Platform	F/V Sea Eagle
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/se0005cr.pdf
Start Date	2000-05-29
End Date	2000-06-11
Description	**Methods & Sampling** Replicate samples for in-vitro chlorophyll a were collected from 3-m depth with a 1-l Niskin water sampler. **Processing Description** Samples were immediately filtered through GF/F glass fiber filters, then frozen for further analysis in the laboratory. One of two replicates was processed whereas the other was a back up sample. Chlorophyll a was processed using the cold-acetone extraction method and measured with a Turner Designs 10-AU fluorometer (Arar and Collins, 1997).

SE0007

Website	https://www.bco-dmo.org/deployment/57577
Platform	F/V Sea Eagle
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/se0007cr.pdf
Start Date	2000-07-28
End Date	2000-08-12
Description	**Methods & Sampling** Replicate samples for in-vitro chlorophyll a were collected from 3-m depth with a 1-l Niskin water sampler. **Processing Description** Samples were immediately filtered through GF/F glass fiber filters, then frozen for further analysis in the laboratory. One of two replicates was processed whereas the other was a back up sample. Chlorophyll a was processed using the cold-acetone extraction method and measured with a Turner Designs 10-AU fluorometer (Arar and Collins, 1997).

FR0206-01

Website	https://www.bco-dmo.org/deployment/57497
Platform	F/V Frosti
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/fr0206/fr0206cr.pdf
Start Date	2002-05-31
End Date	2002-06-08
Description	Event logs provide an overall summary of the sampling activities during a cruise. A hard copy of the event log is also included in the cruise report. Further documentation about event logs is available in Chief Scientist Data Reporting Requirements. For further information contact the Data Management Office Last updated November 03, 2006; gfh 20 May 2011, dld - This cruise consisted of Leg 1 and Leg 2. Metadata is edited to reflect this information which was gleaned from the event log and the cruise report. Leg 1 departed Astoria, OR late on 31 May and ended with a brief port stop in Newport, OR to exchange some science personnel and take on supplies on 8 June. The Chief Scientist was Robert Emmett. Leg 2 began late in the afternoon of 8 June departing from Newport, OR and ended 18 June in Newport, OR. The Chief Scientist was Richard Brodeur. **Methods & Sampling** Replicate samples for in-vitro chlorophyll a were collected from 3-m depth with a 1-l Niskin water sampler. **Processing Description** Samples were immediately filtered through GF/F glass fiber filters, then frozen for further analysis in the laboratory. One of two replicates was processed whereas the other was a back up sample. Chlorophyll a was processed using the cold-acetone extraction method and measured with a Turner Designs 10-AU fluorometer (Arar and Collins, 1997).

FR0208

Website	https://www.bco-dmo.org/deployment/57498
Platform	F/V Frosti
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/fr0208/fr0208cr.pdf
Start Date	2002-08-01
End Date	2002-08-17
Description	**Methods & Sampling** Replicate samples for in-vitro chlorophyll a were collected from 3-m depth with a 1-l Niskin water sampler. **Processing Description** Samples were immediately filtered through GF/F glass fiber filters, then frozen for further analysis in the laboratory. One of two replicates was processed whereas the other was a back up sample. Chlorophyll a was processed using the cold-acetone extraction method and measured with a Turner Designs 10-AU fluorometer (Arar and Collins, 1997).

FR0206-02

Website	https://www.bco-dmo.org/deployment/58670
Platform	F/V Frosti
Report	http://globec.whoi.edu/nep/reports/ccs_cruises/fr0206/fr0206cr.pdf
Start Date	2002-06-08
End Date	2002-06-18
Description	Event logs provide an overall summary of the sampling activities during a cruise. A hard copy of the event log is also included in the cruise report. Further documentation about event logs is available in Chief Scientist Data Reporting Requirements. For further information contact the Data Management Office Last updated November 03, 2006; gfh 20 May 2011, dld - This cruise consisted of Leg 1 and Leg 2. Metadata is edited to reflect this information which was gleaned from the event log and the cruise report. Leg 1 departed Astoria, OR late on 31 May and ended with a brief port stop in Newport, OR to exchange some science personnel and take on supplies on 8 June. The Chief Scientist was Robert Emmett. Leg 2 began late in the afternoon of 8 June departing from Newport, OR and ended 18 June in Newport, OR. The Chief Scientist was Richard Brodeur. **Methods & Sampling** Replicate samples for in-vitro chlorophyll a were collected from 3-m depth with a 1-l Niskin water sampler. **Processing Description** Samples were immediately filtered through GF/F glass fiber filters, then frozen for further analysis in the laboratory. One of two replicates was processed whereas the other was a back up sample. Chlorophyll a was processed using the cold-acetone extraction method and measured with a Turner Designs 10-AU fluorometer (Arar and Collins, 1997).

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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.

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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
NSF Division of Ocean Sciences (NSF OCE)	OCE-0000733
National Oceanic and Atmospheric Administration (NOAA)	unknown NEP NOAA

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