Salinity, nutrients, and and extracted pigments from R/V New Horizon cruise NH0007 in the Northeast Pacific in 2000 as part of the U.S. GLOBEC program (NEP project)

Website: https://www.bco-dmo.org/dataset/2461 Data Type: Cruise Results Version: 1 Version Date: 2012-08-17

Project

» U.S. GLOBEC Northeast Pacific (NEP)

Program

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

| Contributors | Affiliation | Role |
|-----------------------|---|------------------------|
| <u>Pool, Suzan S</u> | Oregon State University (OSU-CIMRS) | Principal Investigator |
| <u>Allison, Dicky</u> | Woods Hole Oceanographic Institution (WHOI BCO-DMO) | BCO-DMO Data Manager |

Abstract

Salinity, nutrients, and and extracted pigments from R/V New Horizon cruise NH0007 in the Northeast Pacific in 2000 as part of the U.S. GLOBEC program.

Table of Contents

- <u>Coverage</u>
- Dataset Description
 - <u>Methods & Sampling</u>
 - Data Processing Description
- Data Files
- Parameters
- Instruments
- Deployments
- <u>Project Information</u>
- Program Information
- <u>Funding</u>

Coverage

Spatial Extent: N:44.6554 **E**:-123.6919 **S**:38.7976 **W**:-126.1733 **Temporal Extent**: 2000-07-28 - 2000-08-12

Dataset Description

CTD Rosette Bottle Data from New Horizon cruise July 28 - August 12, 2000 (NH0007).

Notes:

(1) Actual Rosette Bottle Number (1-12) is obtained by dividing shown Bottle Position by 2 (e.g., 12 shown = 6).

(2) Chlorophyll readings done by Leah Feinberg.

(3) Chl_QCF is a quality control flag for the extracted chlorophyll data. Flagged 1 for samples that may have been rinsed with unfiltered rinse water.

Summary prepared (13 September 2001) by: Hal Batchelder Oregon State University Corvallis, OR 97331-503 hbatchelder@coas.oregonstate.edu

Methods & Sampling

Notes:

(1) Nutrient samples were collected from most bottles; all nutrient data developed from samples frozen during the cruise and analyzed ashore; data developed by Burke Hales (OSU).

- (2) Bottle Salts were run by SIO techs on Guildline Autosalinometer.
- (3) sal (sal00) salinity calculated from primary sensors (C0,T0) differ from bottle salts by less than 0.003 psu. (4) sal2 (sal11) salinity calc. from secondary sensors (C1,T1) differ from bottle salts by ca. 0.0088 psu.

Operation Detection Limits for Nutrient Concentrations (Units are micromoles per liter):

PO4 Range: 0.003-0.004; Mean = 0.004 **NO3+NO2** Range: 0.04-0.08; Mean = 0.06 **Si(OH)4** Range: 0.13-0.24; Mean = 0.16 **NO2** Range: 0.003-0.004; Mean = 0.003

Data Processing Description

BCO-DMO replaced single digit day and month values with 2-digit values (ie. replaced '7' with '07').

08/17/12: BCO-DMO added lat and lon from the NH0007 event log station locations.

[table of contents | back to top]

Data Files

File bottle_data.csv(Comma Separated Values (.csv), 140.34 KB) MD5:d13bd87eb990787a2954ba3678f2eba9 Primary data file for dataset ID 2461

[table of contents | back to top]

Parameters

| Parameter | Description | Units |
|-------------|--|--------------------|
| ship | Ship name. | dimensionless |
| cruise_id | cruise identification | dimensionless |
| sta_std | Standard station name/number. | dimensionless |
| cast | CTD cast cumber | dimensionless |
| bottle_posn | Rosette bottle position. Actual Rosette Bottle Number (1-12) is obtained by dividing shown Bottle Position by 2 (e.g., 12 shown $= 6$). | dimensionless |
| yr | Year | dimensionless |
| chl_qcf | Chlorophyll-a quality control flag, $1 =$ sample may have been rinsed with unfiltered water. | dimensionless |
| chl_a | Chlorophyll-a concentration. | ug/L |
| phaeo | Phaeopigment concentration. | ug/L |
| sal | Salinity calculated from CTD primary temperature and conductivity sensors, PSU. Originally named 'sal00'. | PSU |
| sal2 | Salinity calculated from CTD secondary temperature and conductivity sensors, PSU. Originally named 'sal11'. | PSU |
| sal_bottle | Salinity measured from bottle samples, PSU. Originally named 'bottle_salt'. | PSU |
| pressure | Pressure at depth of bottle/sample. | decibars |
| temp | Temperature from CTD primary temperature sensor. Originally named 't068'. | degrees C |
| temp2 | Temperature from CTD secondary temperature sensor. Originally named 't168'. | degrees C |
| flvolt | Fluorescence electronic data (volts). Originally named 'flc'. | volts |
| PO4 | Phosphate concentration. | umoles/L |
| Si | Silicate (Orthosilicic Acid) concentration. | umoles/L |
| NO2 | Nitrite concentration. | umoles/L |
| NH4 | Ammonium ion concentration. | umoles/L |
| trans | Light transmission (transmissometer). Originally named 'xmiss'. | percent |
| NO3_NO2 | nitrate+nitrite combined concentration. Originally named 'N+N'. | umoles/L |
| month | Month of year. | dimensionless |
| day | Day of month. | dimensionless |
| lat | Latitude in decimal degrees. | decimal degrees |
| lon | Longitude in decimal degrees. | decimal degrees |

[table of contents | back to top]

Instruments

| Dataset- specific Instrument Name | Niskin Bottle |
|--|---|
| Generic Instrument Name | Niskin bottle |
| Dataset- specific Description | Niskin bottle cast used to collect water samples for pigment, nutrient, plankton, etc. analysis |
| 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. |

[table of contents | back to top]

Deployments

NH0007

| Website | https://www.bco-dmo.org/deployment/57558 | | |
|-------------|--|--|--|
| Platform | R/V New Horizon | | |
| Report | http://globec.whoi.edu/nep/reports/ccs_cruises/nh0007/nh0007cr.pdf | | |
| Start Date | 2000-07-27 | | |
| End Date | 2000-08-12 | | |
| Description | Methods & Sampling Chl_QCF is a quality control flag for the extracted chlorophyll data. Processing Description Actual Rosette Bottle Number (1-12) is obtained by dividing shown Bottle Position by 2 (e.g. 12 shown = 6) 2Chlorophyll readings done by Leah Feinberg 3Chl_QCF is a quality control flag for the extracted chlorophyll data. Flagged 1 for samples that may have been rinsed with unfiltered rinse water. 4Bottle Salts were run by SIO techs on Guildline Autosalinometer. Sal00 - salinity calculated from primary sensors (C0,T0) differ from bottle salts by <0.003 psu. 6Sal11 - salinity calc. from secondary sensors (C1,T1) differ from bottle salts by ca. 0.0088 psu. 7Nutrient samples were collected from most bottles; all nutrient data developed from samples frozen during the cruise and analyzed ashore; data developed by Burke Hales (OSU). 8Operation Detection Limits for Nutrient Concentrations Nutrient Range Mean Variat Units PO4 0.003-0.004 0.004 Phosphate micromoles per liter NO3+NO2 0.04-0.08 0.06 Nitrate+Nitrite micromoles per liter Si(OH)4 0.13-0.24 0.16 Silicate micromoles per liter NO2 | | |

[table of contents | back to top]

Project Information

U.S. GLOBEC Northeast Pacific (NEP)

Website: <u>http://nepglobec.bco-dmo.org</u>

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.

[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 |
|--|--------------------|
| NSF Division of Ocean Sciences (NSF OCE) | <u>OCE-0000733</u> |
| National Oceanic and Atmospheric Administration (NOAA) | unknown NEP NOAA |

[table of contents | back to top]