Underway MET data collected on multiple GLOBEC Long Term Observation Program (LTOP) cruises aboard R/V Wecoma in the Northeast Pacific from 1999-2003

Website: https://www.bco-dmo.org/dataset/3645

Data Type: Cruise Results

Version: 1

Version Date: 2012-05-03

Project

» U.S. GLOBEC Northeast Pacific (NEP)

Program

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

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Abstract

Underway MET data collected on GLOBEC Long Term Observation Program (LTOP) cruises (1998-2004) aboard R/V Wecoma. Data are preliminary. No error-checking or in-situ calibrations (except for salinity) have been performed.

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Coverage

Spatial Extent: **N**:45.009128 **E**:-124.04404 **S**:40.851723 **W**:-126.0571

Temporal Extent: 1999-07-03 - 2003-10-01

Dataset Description

Underway MET data collected on GLOBEC Long Term Observation Program (LTOP) cruises (1998-2004) aboard R/V Wecoma. Data are preliminary. No error-checking or in-situ calibrations (except for salinity) have been performed. Underway temperature and salinity calibration information is listed in the sensor calibration table (PDF).

Acquisition Description

Beginning in April 1999, underway data acquisition system (DAS) files from the R/V Wecoma were recorded in ASCII, and filtered by a perl script known as filterdas to calculate engineering units. The DAS files produced were comma-separated ASCII files, with one file per day at one minute sampling intervals. More information is available from Oregon State University about the Wecoma's DAS and the filtering script. BCO-DMO obtained the underway data from http://ltop.coas.oregonstate.edu/das.html

Processing Description

Parameter names were replaced to conform with BCO-DMO conventions. Values of '-999999', '9999.9990', and 'NaN' were replaced with 'nd'. The original latitude degree and minute data stored in the pcode_lat_deg and pcode_lat_min columns were merged into a single column (lat). The original longitude data stored in the pcode_long_deg and pcode_long_min columns were merged into a single column (lon). lat and lon were reformatted to decimal degrees.

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Parameters

Parameter	Description	Units
cruiseid	Cruise identifier	dimensionless
year	Year, GMT e.g. 1997.	dimensionless
month_gmt	Month of year, GMT. Calculated from yrday and year.	month, 1-12
day_gmt	Day of month, GMT. Calculated from yrday and year.	day, 1-31
lat	Latitude (south is negative). Decimal degrees calculated from degrees/decimal minutes. Originally named 'pcode_lat_deg' and 'pcode_lat_min'.	decimal degrees
lon	Longitude (west is negative). Decimal degrees calculated from degrees/decimal minutes. Originally named 'pcode_long_deg' and 'pcode_long_min'.	decimal degrees
depth_w_12	Water depth in meters recorded by high frequency (12 kHz) transducer. Originally named 'echosounder_hf_value'.	meters

temp_air	Air temperature. Originally named 'air_temp_osu_doghouse' or 'air_temp_rmyoung_doghouse' (depending on cruise).	degrees C
humidity	Percent relative humidity. Originally named 'humidity_vaisela_doghouse'.	percent
press_bar	Barometric pressure in millibars. Originally named 'baro'.	millibars
temp_ss5	Sea surface temperature measured by the thermosalinograph located 5 m below the water's surface. Originally named 'water_temp_seabird_flothru'.	degreesC
sal_ss5	Sea surface salinity, measured from thermosalinograph located 5 m below water surface.	PSU
temp_air2	Air temperature from second source. Originally named 'air_temp_vaisela_doghouse'.	degrees C
yrday	Day of the year. Originally named 'truetime_day'.	yearday, 1-365
wind_speed	Wind speed measured in m/s. Originally named 'wind_speed_doghouse'.	m/s
radiation_s	Shortwave radiation. Originally named 'down_welling_shortwave_psp_doghouse'.	watts/m^2
PAR_doghouse	PAR measured in quanta/cm^2/sec. (6 x 10^17 quanta/m^2/sec = 1 microEinstein(uE)/m^2/sec). Originally named 'down_welling_par_doghouse'.	quanta/(cm^2*s)
radiation_l	Longwave radiation. Originally named 'down_welling_longwave_doghouse'.	watts/m^2
wind_dir_stbd	Wind direction measured on the starboard side in degrees from true North. Originally named 'wind_heading_starboard'.	degrees from true North
wind_dir_port	Wind direction measured on the port side in degrees from true North. Originally named 'wind_heading_port'.	degrees from true North

wind_speed_kts_stbd	Wind speed in knots, measured from the starboard side of the ship. Originally named 'wind_speed_starboard'.	knots
wind_speed_kts_port	Wind speed in knots, measured from the port side of the ship. Originally named 'wind_speed_port'.	knots
cond_ss5	Sea surface conductivity, measured by sensor 5 m below the water's surface. Originally named 'conductivity_seabird_flothru'.	siemens/meter
temp_ss	Sea surface temperature. Originally named 'water_temp_seabird_engineroom'.	degrees C
flvolt_mV	Fluorometer reading in milliVolts (relative value). Originally named 'fluorometer_value_met2'.	milliVolts
speedlog_long	Speed ahead in knots. Originally named 'speedlog_water_longitude'.	knots
speedlog_trans	Speed to starboard (transverse). Originally named 'speedlog_water_transverse'.	knots
gyro	The gyro's reading in degrees from true North. Originally named 'gyro_compass' or 'syncro' (depending on the cruise).	degrees from true North
temp_pir_case	Temperature of the PIR case. Originally named 'pir_case_temp'.	degrees C
temp_pir_hemi	Temperature of the PIR hemisphere. Originally named 'pir_hemisphere_temp'.	degrees C
ship	Name of the ship.	dimensionless
cog	cog; units not supplied.	unknown
sog	sog; units not supplied.	unknown
time_gmt	Time, in GMT format. Calculated from hour_gmt and minute_gmt (which were originally named 'pcode_hour' and 'pcode_minute').	HHMM
ISO_DateTime_UTC	Date and time in ISO 8601 format:Â yyyy-mm-ddTHH:MM:SS.Â	unitless

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Instruments

Dataset-specific Instrument Name	CTD Sea-Bird
Generic Instrument Name	CTD Sea-Bird
Dataset-specific Description	SeaBird CTD system, including: CTD and Carousel sampler in frame, water bottles, dual C and T sensors, Oxygen sensor, 25 cm transmissometer, fluorometer, altimeter, bottom trip switch, PAR sensor data acquisition and storage system, complete backup systems.
Generic Instrument Description	Conductivity, Temperature, Depth (CTD) sensor package from SeaBird Electronics, no specific unit identified. This instrument designation is used when specific make and model are not known. See also other SeaBird instruments listed under CTD. More information from Sea-Bird Electronics.

Dataset-specific Instrument Name	Turner Designs Fluorometer -10-AU
Generic Instrument Name	Turner Designs Fluorometer -10-AU
Dataset-specific Description	Turner Designs model 10-AU fluorometer, with grab sample or flow-through cuvettes. Interfaces to DAS data logger
Generic Instrument Description	The Turner Designs 10-AU Field Fluorometer is used to measure Chlorophyll fluorescence. The 10AU Fluorometer can be set up for continuous-flow monitoring or discrete sample analyses. A variety of compounds can be measured using application-specific optical filters available from the manufacturer. (read more from Turner Designs, turnerdesigns.com, Sunnyvale, CA, USA)

Dataset-specific Instrument Name	Thermosalinograph
Generic Instrument Name	Thermosalinograph
Dataset-specific Description	Thermosalinograph, located at 5 m.
Generic Instrument Description	A thermosalinograph (TSG) is used to obtain a continuous record of sea surface temperature and salinity. On many research vessels the TSG is integrated into the ship's underway seawater sampling system and reported with the underway or alongtrack data.

Dataset-specific Instrument Name	Anemometer
Generic Instrument Name	Anemometer
Dataset-specific Description	Sonic anemometer, approx. 20 m height above waterline
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.

Dataset-specific Instrument Name	Global Positioning System Receiver
Generic Instrument Name	Global Positioning System Receiver
Dataset-specific Description	GPS - Northstar 951XDW receiver in the pilothouse and a remote display in the Dry Lab. GPS 'P-Code' Receiver - Trimble Tasman.
Generic Instrument Description	The Global Positioning System (GPS) is a U.S. space-based radionavigation system that provides reliable positioning, navigation, and timing services to civilian users on a continuous worldwide basis. The U.S. Air Force develops, maintains, and operates the space and control segments of the NAVSTAR GPS transmitter system. Ships use a variety of receivers (e.g. Trimble and Ashtech) to interpret the GPS signal and determine accurate latitude and longitude.

Dataset-specific Instrument Name	Knudsen 320 BR deepwater echosounder
Generic Instrument Name	Knudsen 320 BR deepwater echosounder
Dataset-specific Description	Knudsen 320B/R dual-frequency digital echosounder (12 kHz and 3.5 kHz). 12 kHz transducer is a single EDO 323B, 3.5 kHz is an array of sixteen ORE 137D transducers in a 4x4 configuration.
Generic Instrument Description	The Knudsen 320 B/R deepwater echosounder is a digital data logging system used to measure water depth (e.g. depth of the seafloor). The system is configured to work with different frequency transducers. For example, the Edo 323 B is a 12 kHz High Frequency (HF) transducer or it can be configured to work with an array of 3.5 kHz Low Frequency (LF) transducers mounted in the hull of a vessel.

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Deployments

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

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

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

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

W0101B

Website	https://www.bco-dmo.org/deployment/58801
Platform	R/V Wecoma
Start Date	2001-01-24
End Date	2001-01-25
Description	W0101B served as an instrument test cruise for a fiber-optic tow cable used during the 2001 and 2003 COAST (Coastal Ocean Advance in Shelf Transport) COOP project. CTD / rosette sampling also occurred along the Newport Hydrographic line (44 Â° 39.1 'N) from 1-45 nautical miles off the coast. Described breifly in this LTOP data report.

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

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

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

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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
NSF Division of Ocean Sciences (NSF OCE)	OCE-9732386
National Oceanic and Atmospheric Administration (NOAA)	NA67RJ0151 (NEP)
National Oceanic and Atmospheric Administration (NOAA)	NA86OP0589 (NEP)

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