Picoplankton abundance from R/V Thomas G. Thompson cruises TT008, TT012 in the Equatorial Pacific in 1992 during the U.S. JGOFS Equatorial Pacific (EqPac) project

Website: https://www.bco-dmo.org/dataset/2678
Version: August 14, 2002
Version Date: 2002-08-14

Project
» U.S. JGOFS Equatorial Pacific (EqPac)

Program
» U.S. Joint Global Ocean Flux Study (U.S. JGOFS)

Contributors	Affiliation	Role
Binder, Brian	University of Georgia (UGA)	Principal Investigator
Chisholm, Sallie W.	Massachusetts Institute of Technology (MIT-EAPS)	Co-Principal Investigator
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Dataset Description

Picoplankton abundance

Methods & Sampling

See Platform deployments for cruise specific documentation

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Data Files

File
picoplankton_TT008.csv (Comma Separated Values (.csv), 3.17 KB) MD5:8e2c9201247feb2eec8727cc9880c8b6 Version August 14, 2002 (original version November 13, 1995) Brian Binder, Sallie Chisholm, Robert Olson Picoplankton abundance Thomas Thompson Cruise TT008 Caution: Please note that the analytical procedures for enumerating the cell counts in this data set and those reported by DuRand (Diel Series) are significantly different so that combining the results of these two data sets should not be done without a review of the analytical procedures.
picoplankton_TT012.csv (Comma Separated Values (.csv), 3.91 KB) MD5:dc371670f36a87c967ada14e1ca2f5a3 Version August 14, 2002 (original version November 13, 1995) Brian Binder, Sallie Chisholm, Robert Olson Picoplankton abundance Thomas Thompson Cruise TT012 Caution: Please note that the analytical procedures for enumerating the cell counts in this data set and those reported by DuRand (Diel Series) are significantly different so that combining the results of these two data sets should not be done without a review of the analytical procedures.

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Parameters

Parameter	Description	Units
event	event number from event log	
sta	station number from event log	
cast	CTD cast number from event log	
depth_n	nominal depth	meters
bot	CTD rosette bottle number	
coccus_p_cyt	Prochlorococcus	cells/milliliter
coccus_s_cyt	Synechococcus	cells/milliliter
phyto_e_u_cyt	ultra eukaryotic phytoplankton may exceed pico size class	cells/milliliter
bact_het_cyt	heterotrophic bacteria; flow cytometry	cells/milliliter

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Instruments

Dataset-specific Instrument Name	Niskin Bottle
Generic Instrument Name	Niskin bottle
Dataset-specific Description	CTD clean rosette (Niskin) bottles were used to collect water samples.
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

TT008

Website	https://www.bco-dmo.org/deployment/57729
Platform	R/V Thomas G. Thompson
Start Date	1992-03-19
End Date	1992-04-15
Description	Purpose: Spring Time Series; Equator, 140°W TT008 was one of five cruises conducted in 1992 in support of the U.S. Equatorial Pacific (EqPac) Process Study. The five EqPac cruises aboard R/V Thomas G. Thompson included two repeat meridional sections (12°N - 12°S), 2 equatorial surveys, and a benthic survey (all at 140° W). The scientific objectives of this study were to observe the processes in the Equatorial Pacific controlling the fluxes of carbon and related elements between the atmosphere, euphotic zone, and deep ocean. As luck would have it, the survey window coincided with an El Nino event. A bonus for the research team. **Methods & Sampling** PI: Brian Binder(1), Sallie Chisholm(2), Rob Olson(3) of: (1) University of Georgia (2) Massachusetts Institute of Technology (3) Woods Hole Oceanographic Institution dataset: Picoplankton abundance dates: March 23, 1992 to April 06, 1992 location: N: 0.0313 S: -0.0145 W: -140.002 E: -139.9683 project/cruise: EqPac/TT008 - Spring Time Series ship: Thomas Thompson PI-Notes on Analysis

TT012

Website	https://www.bco-dmo.org/deployment/57731
Platform	R/V Thomas G. Thompson
Start Date	1992-09-24
End Date	1992-10-21
Description	Purpose: Fall Time Series; Equator, 140°W TT012 was one of five cruises conducted in 1992 in support of the U.S. Equatorial Pacific (EqPac) Process Study. The five EqPac cruises aboard R/V Thomas G. Thompson included two repeat meridional sections (12°N - 12°S), 2 equatorial surveys, and a benthic survey (all at 140° W). The scientific objectives of this study were to observe the processes in the Equatorial Pacific controlling the fluxes of carbon and related elements between the atmosphere, euphotic zone, and deep ocean. As luck would have it, the survey window coincided with an El Nino event. A bonus for the research team. **Methods & Sampling** PI: Brian Binder(1), Sallie Chisholm(2), Rob Olson(3) of: (1) University of Georgia (2) Massachusetts Institute of Technology (3) Woods Hole Oceanographic Institution dataset: Picoplankton abundance dates: October 02, 1992 to October 21, 1992 location: N: 0.0058 S: -0.0105 W: -140.0383 E: -139.9332 project/cruise: EqPac/TT012 - Fall Time Series ship: Thomas Thompson PI-Notes on Analysis

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Project Information

U.S. JGOFS Equatorial Pacific (EqPac)

Website: http://usjgofs.whoi.edu/research/eqpac.html

Coverage: Equatorial Pacific

The U.S. EqPac process study consisted of repeat meridional sections (12°N -12°S) across the equator in the central and eastern equatorial Pacific from 95°W to 170°W during 1992. The major scientific program was focused at 140° W consisting of two meridional surveys, two equatorial surveys, and a benthic survey aboard

the R/V Thomas Thompson. Long-term deployments of current meter and sediment trap arrays augmented the survey cruises. NOAA conducted boreal spring and fall sections east and west of 140°W from the R/V Baldridge and R/V Discoverer. Meteorological and sea surface observations were obtained from NOAA's in place TOGA-TAO buoy network.

The scientific objectives of this study were to determine the fluxes of carbon and related elements, and the processes controlling these fluxes between the Equatorial Pacific euphotic zone and the atmosphere and deep ocean. A broad overview of the program at the 140°W site is given by Murray et al. (Oceanography, 5: 134-142, 1992). A full description of the Equatorial Pacific Process Study, including the international context and the scientific results, appears in a series of Deep-Sea Research Part II special volumes:

Topical Studies in Oceanography, A U.S. JGOFS Process Study in the Equatorial Pacific (1995), Deep-Sea Research Part II, Volume 42, No. 2/3.

Topical Studies in Oceanography, A U.S. JGOFS Process Study in the Equatorial Pacific. Part 2 (1996), Deep-Sea Research Part II, Volume 43, No. 4/6.

Topical Studies in Oceanography, A U.S. JGOFS Process Study in the Equatorial Pacific (1997), Deep-Sea Research Part II, Volume 44, No. 9/10.

Topical Studies in Oceanography, The Equatorial Pacific JGOFS Synthesis (2002), Deep-Sea Research Part II, Volume 49, Nos. 13/14.

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Program Information

U.S. Joint Global Ocean Flux Study (U.S. JGOFS)

Website: http://usjgofs.whoi.edu/

Coverage: Global

The United States Joint Global Ocean Flux Study was a national component of international JGOFS and an integral part of global climate change research.

The U.S. launched the Joint Global Ocean Flux Study (JGOFS) in the late 1980s to study the ocean carbon cycle. An ambitious goal was set to understand the controls on the concentrations and fluxes of carbon and associated nutrients in the ocean. A new field of ocean biogeochemistry emerged with an emphasis on quality measurements of carbon system parameters and interdisciplinary field studies of the biological, chemical and physical process which control the ocean carbon cycle. As we studied ocean biogeochemistry, we learned that our simple views of carbon uptake and transport were severely limited, and a new "wave" of ocean science was born. U.S. JGOFS has been supported primarily by the U.S. National Science Foundation in collaboration with the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, the Department of Energy and the Office of Naval Research. U.S. JGOFS, ended in 2005 with the conclusion of the Synthesis and Modeling Project (SMP).

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