

Nutrients from bottle casts from R/V Thomas G. Thompson cruises TT007, TT008, TT011, TT012 in the Equatorial Pacific in 1992 during the U.S. JGOFS Equatorial Pacific (EqPac) project

Website: <https://www.bco-dmo.org/dataset/2636>

Version: final

Version Date: 2002-09-05

Project

» [U.S. JGOFS Equatorial Pacific](#) (EqPac)

Program

» [U.S. Joint Global Ocean Flux Study](#) (U.S. JGOFS)

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Dataset Description

Nutrients from bottle casts

Methods & Sampling

See Platform deployments for cruise specific documentation

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Parameters

Parameter	Description	Units
event	event/operation number per event log	
sta	station number per event log	
cast	CTD cast number per event log	
date	date as year month day GMT	yymmdd
time	time of day GMT	decimal hours
bot	CTD rosette bottle number	
press	sample depth reported as pressure	decibars
NH4	ammonium	micromoles/liter
NO3	nitrate	micromoles/liter
NO2	nitrite	micromoles/liter
PO4	phosphate	micromoles/liter
SiO4	silicate	micromoles/liter
urea	urea	micromoles N/liter
depth	sample depth	meters

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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

TT007

Website	https://www.bco-dmo.org/deployment/57728
Platform	R/V Thomas G. Thompson
Start Date	1992-01-30
End Date	1992-03-13
Description	<p>Purpose: Spring Survey Cruise; 12°N-12°S at 140°W TT007 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.</p> <p>Methods & Sampling PI: Christopher Garside of: Bigelow Laboratory dataset: Nutrients dates: February 03, 1992 to March 09, 1992 location: N: 12.0674 S: -12.2083 W: -140.7452 E: -134.5151 project/cruise: EQPAC/TT007 - Spring Survey ship: Thomas Thompson Methodology: U.S. JGOFS Equatorial Pacific Process Study Sampling and Analytical Protocols (section 13) PI-Notes on Quality Procedure PI-Notes on NO3 vs. T/S misfits</p>

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	<p>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.</p> <p>Methods & Sampling PI: Patricia Wheeler of: Oregon State University dataset: Nutrients dates: March 23, 1992 to April 14, 1992 location: N: 9.0905 S: -0.0145 W: -140.0512 E: -139.9305 project/cruise: EQPAC/TT008 - Spring Time Series ship: Thomas Thompson Methodology: U.S. JGOFS Equatorial Pacific Process Study Sampling and Analytical Protocols (section 13) DMO cautionary note: The PI has flagged the following samples as suspect, most likely due either to mistrip or leaking bottles: cast 13 bottles 2,3,4 cast 15 bottles 2,3 cast 64 bottles 1,2,3 cast 68 bottles 1,2,3</p>

TT011

Website	https://www.bco-dmo.org/deployment/57730
Platform	R/V Thomas G. Thompson
Start Date	1992-08-05
End Date	1992-09-18
Description	<p>Purpose: Fall Survey; 12°N-12°S at 140°W TT011 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.</p> <p>Methods & Sampling PI: Christopher Garside of: Bigelow Laboratory dataset: Nutrients from bottle casts dates: August 10, 1992 to September 15, 1992 location: N: 12.025 S: -11.9767 W: -141.4433 E: -134.9117 project/cruise: EQPAC/TT011 - Fall Survey ship: Thomas Thompson Methodology: U.S. JGOFS Equatorial Pacific Process Study Sampling and Analytical Protocols (section 13) PI-Notes on Quality Procedure PI-Notes on NO3 vs. T/S misfits EqPac bottle quality review summary from DMO</p>

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	<p>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.</p> <p>Methods & Sampling PI: Patricia Wheeler of: Oregon State University dataset: Nutrients from Bottle Casts dates: October 02, 1992 to October 21, 1992 location: N: 0.0642 S: -0.0842 W: -140.1523 E: -139.9197 project/cruise: EQPAC/TT012 - Fall Time Series ship: Thomas Thompson Methodology: U.S. JGOFS Equatorial Pacific Process Study Sampling and Analytical Protocols (section 13) PI-Notes: Bottles flagged by Murray as being mistrips have been omitted from the file. Data have been screened for fliers (usually due to analytical problems) by checking depth profiles, N:P ratios and N:Si ratios. Consistency with TT011 was established by comparing deep profiles. Details concerning any of the unreported data are available upon request from P. Wheeler. DMO QC note (020905): event 10080449, sta 5, cast 35, bottle 4: depth is reported as 130 in this file, but Murray reports 120 for this bottle in his data</p>

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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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