

Primary production data 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/2626>

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Version Date: 1994-05-25

Project

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

Program

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

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Dataset Description

Primary Production

Methods & Sampling

See Platform deployments for cruise specific documentation

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Parameters

Parameter	Description	Units
sta	station number from event log	
event	event number from event log	
chl_a_int_1	chlorophyll-a integrated to one % light level	mg/m ² /day
pp_int_1	primary production integrated to the one % light level	mgC/m ² /day
pb_int_1	Pb (chlorophyll-a specific production) integrated to the one % light level	mgC/mgChl/day
chl_a_int_.1	chlorophyll-a integrated to 0.1 % light level	mg/m ² /day
pp_int_.1	primary production integrated to the 0.1 % light level	mgC/m ² /day
pb_int_.1	Pb (chlorophyll-a specific production) integrated to the 0.1 % light level	mgC/mgChl/day
light	light level	percent lo
depth_n	nominal depth	meters
chl_a	chlorophyll-a	mg/m ³
pp24	Primary Production, carbon assimilation	mgC/m ³ /day
pb24	chlrophyll-a specific production	mgC/mgChl/day

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Instruments

Dataset-specific Instrument Name	Trace Metal Bottle
Generic Instrument Name	Trace Metal Bottle
Dataset-specific Description	Trace metal (TM) clean rosette bottles were used to collect water samples. Eight light depths are sampled down to the 0.1 % I light depth with custom made Go-Flo bottles on a ``trace metal clean' General Oceanics rosette. The rosette was made by General Oceanics according to Moss Landing Marine Laboratory's specification; it is called the EqPac ``clean rosette.' The rosette was lowered on a Kevlar conducting hydroline with non-metal sheaves and a dedicated winch.
Generic Instrument Description	Trace metal (TM) clean rosette bottle used for collecting trace metal clean seawater samples.

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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: Richard Barber of: Duke University dataset: Primary Production dates: February 04, 1992 to March 08, 1992 location: N: 11.9952 S: -12.0315 W: -140.4368 E: -135.0112 project/cruise: EQPAC/TT007 - Spring Survey ship: Thomas Thompson PI-Notes Methods reported in: Barber, Richard T. 1993. In Situ Primary Production Protocols. U.S. Joint Global Ocean Flux Study - Equatorial Pacific Protocols, 1993, section 7.</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: Richard Barber of: Duke University dataset: Primary Production dates: March 23, 1992 to April 09, 1992 location: N: 0.0238 S: -0.0167 W: -140 E: -139.9722 project/cruise: EQPAC/TT008 - Spring Time Series ship: Thomas Thompson Methods reported in: Barber, Richard T. 1993. In Situ Primary Production Protocols. U.S. Joint Global Ocean Flux Study Equatorial Pacific Protocols, 1993, section 7.</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: Richard Barber of: Duke University dataset: Primary Production dates: August 11, 1992 to September 14, 1992 location: N: 12.0283 S: -11.9683 W: -140.7 E: -134.9183 project/cruise: EQPAC/TT011 - Fall Survey ship: Thomas Thompson Methods reported in: Barber, Richard T. 1993. In Situ Primary Production Protocols. U.S. Joint Global Ocean Flux Study Equatorial Pacific Protocols, 1993, section 7.</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: Richard Barber of: Duke University dataset: Primary Production dates: October 02, 1992 to October 20, 1992 location: N: 0.0745 S: -0.0308 W: -140.1228 E: -139.9627 project/cruise: EQPAC/TT012 - Fall Time Series ship: Thomas Thompson Methods reported in: Barber, Richard T. 1993. In Situ Primary Production Protocols. U.S. Joint Global Ocean Flux Study Equatorial Pacific Protocols, 1993, section 7.</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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