# Microplankton counts and carbon biomass 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/2662
**Version**: final
**Version Date**: 2002-12-11

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

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

| Contributors | Affiliation | Role |
|---|---|---|
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## Dataset Description

Microplankton counts and carbon biomass

### Methods & Sampling

See Platform deployments for cruise specific documentation

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## Data Files

| File |
| --- |

**microplankton_TT007.csv** (Comma Separated Values (.csv), 565 bytes)
MD5:dd1efce9a55f452f58aeeb1e9079d097

version October 9, 2002
(original version 24 August 1995)
(second version 24 May 2002 w/ bottle nums added)

PI: Diane Stoecker
of: University of Maryland, Horn Point Lab.
dataset: microplankton counts and carbon biomass
project/cruise: EqPac/cruise TT007
ship: R/V Thomas Thompson

**microplankton_TT008.csv** (Comma Separated Values (.csv), 2.30 KB)
MD5:7c9efef2bc015786ea6e528210089641

version October 9, 2002
(original version 24 August 1995)

PI: Diane Stoecker
of: Univ. of Maryland, Horn Point Lab.
dataset: microplankton counts and carbon biomass
project/cruise: EqPac/cruise TT008
ship: R/V Thomas Thompson

Samples obtained by drawing a one liter sample of water from Niskin bottles. Samples preserved with 20% buffered formalin. Ciliate counts and carbon biomass corrected for cell loss during fixation.

**microplankton_TT011.csv** (Comma Separated Values (.csv), 758 bytes)
MD5:2f2dd9b93392c181e4b0246facfa5630

version December 11, 2002
(previous version = June 26 2002, bottle nums added)
(previous version = 24 August 1995)

PI: Diane Stoecker
of: Univ. of Maryland, Horn Point Lab.
dataset: microplankton counts and carbon biomass
project/cruise: EqPac/cruise TT011
ship: R/V Thomas Thompson

Samples obtained by drawing a one liter sample of water from Niskin bottles. Samples preserved with 20% buffered formalin. Ciliate counts and carbon biomass corrected for cell loss during fixation.

**microplankton_TT012.csv** (Comma Separated Values (.csv), 1.90 KB)
MD5:6b20af0b392e4b09e6b51a77f7bf2e26

version October 9, 2002
(original version 24 August 1995)

PI: Diane Stoecker
of: Univ. of Maryland, Horn Point Lab.
dataset: microplankton counts and carbon biomass
project/cruise: EqPac/cruise TT012
ship: R/V Thomas Thompson

Samples obtained by drawing a one liter sample of water from Niskin bottles. Samples preserved with 20% buffered formalin. Ciliate counts and carbon biomass corrected for cell loss during fixation.

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## Parameters

| Parameter | Description | Units |
|---|---|---|
| event | event number from event log | dimensionless |
| sta | station number from event log | dimensionless |
| cast | TM or CTD cast number from event log | dimensionless |
| bot | bottle number | dimensionless |
| depth_n | nominal depth of sample | meters |
| dino_het | counts of heterotrophic dinoflagellates | cells/liter |
| rad | counts of radiolarians | cells/liter |
| foram | counts of foraminiferans | cells/liter |
| ciliates | counts of ciliates | cells/liter |
| dino_het_C | carbon biomass, heterotrophic dinoflagellates | micrograms C/liter |
| rad_C | carbon biomass, radiolarian | nanograms C/liter |
| foram_C | carbon biomass, foraminiferan | nanograms C/liter |
| ciliates_C | carbon biomass, ciliates | nanograms C/liter |

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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. |

| | |
|---|---|
| **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. |
| **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** | 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.<br><br>**Methods & Sampling**<br>PI: Diane Stoecker of: Univ. of Maryland, Horn Point Marine Lab. dataset: Microplankton counts and carbon biomass, one liter samples dates: February 10, 1992 to March 09, 1992 location: N: 7.0147 S: -12.1193 W: -140.4469 E: -135.0121 project/cruise: EqPac/TT007 - Spring Survey ship: R/V Thomas Thompson PI-Notes: Samples obtained by drawing a one liter sample of water from Niskin bottles. Samples preserved with 20% buffered formalin. Samples concentrated by sedimentation prior to microscopy. Ciliate counts and carbon biomass corrected for cell loss during fixation. All organism counts are for size class greater than 20 microns. |

**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.<br><br>**Methods & Sampling**<br>PI: Diane Stoecker of: Univ. of Maryland, Horn Point Marine Lab. dataset: Microplankton counts and carbon biomass, one liter samples dates: March 22, 1992 to April 10, 1992 location: N: 2.0027 S: -1.95 W: -140.1902 E: -139.9798 project/cruise: EqPac/TT008 - Spring Time Series ship: R/V Thomas Thompson PI-Notes Samples obtained by drawing a one liter sample of water from Niskin bottles. Samples preserved with 20% buffered formalin. Samples concentrated by sedimentation prior to microscopy. Ciliate counts and carbon biomass corrected for cell loss during fixation. All organism counts are for size class greater than 20 microns. |

**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** | 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.<br><br>**Methods & Sampling**<br>PI: Diane Stoecker of: Univ. of Maryland, Horn Point Marine Lab. dataset: Microplankton counts and carbon biomass, one liter samples dates: August 10, 1992 to September 13, 1992 location: N: 12.005 S: -11.9683 W: -140.5917 E: -134.9817 project/cruise: EqPac/TT011 - Fall Survey ship: R/V Thomas Thompson PI-Notes: Samples obtained by drawing a one liter sample of water from Niskin bottles. Samples preserved with 20% buffered formalin. Samples concentrated by sedimentation prior to microscopy. Ciliate counts and carbon biomass corrected for cell loss during fixation. All organism counts are for size class greater than 20 microns. |

**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.<br><br>**Methods & Sampling**<br>PI: Diane Stoecker of: Univ. of Maryland, Horn Point Lab. dataset: Microplankton counts and carbon biomass, one liter samples dates: October 02, 1992 to October 20, 1992 location: N: 0.013 S: -0.007 W: -140.1523 E: -139.9753 project/cruise: EqPac/TT012 - Fall Time Series ship: R/V Thomas Thompson PI-Notes: Samples obtained by drawing a one liter sample of water from Niskin bottles. Samples preserved with 20% buffered formalin. Samples concentrated by sedimentation prior to microscopy. Ciliate counts and carbon biomass corrected for cell loss during fixation. All organism counts are for size class greater than 20 microns. |

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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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