

# Particulate organic C and N, total particulate carbon from R/V Thomas G. Thompson cruises TT007, TT011 in the Equatorial Pacific in 1992 during the U.S. JGOFS Equatorial Pacific (EqPac) project

**Website:** <https://www.bco-dmo.org/dataset/2657>

**Version:** July 31, 2002

**Version Date:** 2002-07-31

## Project

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

## Program

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

| Contributors                         | Affiliation   | Role                   |
|--------------------------------------|---|------------------------|
| <a href="#">Newton, Jan</a>          | University of Washington (UW)                       | Principal Investigator |
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## Dataset Description

Particulate organic C and N, total particulate carbon

## Methods & Sampling

See Platform deployments for cruise specific documentation

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## Parameters

| Parameter   | Description  | Units            |
|-------------|--|------------------|
| event       | event/operation number from event log  |                  |
| sta         | station number from event log  |                  |
| cast        | CTD cast number from event log   |                  |
| bot         | CTD rosette bottle number  |                  |
| depth_n     | nominal sample depth   | meters           |
| TPC         | total particulate carbon, sample non-acidified, units converted by the US JGOFS Data Management Office | micromoles/liter |
| POC         | particulate organic carbon, sample acidified, units converted by the US JGOFS Data Management Office   | micromoles/liter |
| PON         | particulate organic nitrogen, units converted by the US JGOFS Data Management Office                   | micromoles/liter |
| TPC_orig    | total particulate carbon in units originally received from PI (sample non-acidified)                   | micrograms/liter |
| POC_orig    | particulate organic carbon in units originally received from PI (sample acidified)                     | micrograms/liter |
| PON_orig    | particulate organic nitrogen in units originally received from PI                                      | micrograms/liter |
| C_to_N_orig | carbon nitrogen ratio as originally received from PI   |                  |

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## Instruments

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

|                    |   |
|--------------------|---|
| <b>Website</b>     | <a href="https://www.bco-dmo.org/deployment/57728">https://www.bco-dmo.org/deployment/57728</a>   |
| <b>Platform</b>    | R/V Thomas G. Thompson  |
| <b>Start Date</b>  | 1992-01-30  |
| <b>End Date</b>    | 1992-03-13  |
| <b>Description</b> | <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><b>Methods &amp; Sampling</b><br/> PI: Jan Newton of: University of Washington dataset: Particulate organic carbon and nitrogen, total particulate carbon dates: February 03, 1992 to March 08, 1992 location: N: 12.0102 S: -12.2083 W: -140.5219 E: -134.7269 project/cruise: EQPAC/TT007 - Spring Survey ship: R/V Thomas Thompson Methodology EqPac bottle quality review summary from DMO DMO cautionary note: The DMO suspects a misalignment of either bottle numbers or the corresponding depths/pressures for events 02031635, 02040845 and 02150770. A shift of either bottle number or depth up or down by one sampling interval will align the data correctly. However, we at the DMO are not in the position to make these corrections. Event number 02101209 bottle numbers and corresponding depths are questionable, but the correct solution is not easily identified. The entire cast is in question. These correlations are based on the event/bottle number/depths reported by Murray in his final bottle cast file.</p> |

## TT011

|                    |  |
|--------------------|--|
| <b>Website</b>     | <a href="https://www.bco-dmo.org/deployment/57730">https://www.bco-dmo.org/deployment/57730</a>  |
| <b>Platform</b>    | R/V Thomas G. Thompson   |
| <b>Start Date</b>  | 1992-08-05   |
| <b>End Date</b>    | 1992-09-18   |
| <b>Description</b> | <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><b>Methods &amp; Sampling</b><br/> PI: Jan Newton of: University of Washington dataset: Particulate organic carbon and nitrogen, total particulate carbon dates: August 10, 1992 to September 15, 1992 location: N: 12.0183 S: -11.9667 W: -141.4433 E: -134.9267 project/cruise: EQPAC/TT011 - Fall Survey ship: R/V Thomas Thompson Methodology EqPac bottle quality review summary from DMO DMO Notes: 1. bottle numbers revised per Newton phone conv June 6, 1994 2. bottle and cast numbers revised per Newton e-mail Aug 15, 1994 3. cast 127, depths 100 and 120: data flagged as questionable</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 Baldrige 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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