Uptake of dissolved free amino acids, 15N uptake, thymidine production from R/V Atlantis II cruise AII-119-5 in the North Atlantic in 1989 (U.S. JGOFS NABE project)

Website: https://www.bco-dmo.org/dataset/2603
Version: September 09, 2002
Version Date: 2002-09-09

Project
» U.S. JGOFS North Atlantic Bloom Experiment (NABE)

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

Contributors	Affiliation	Role
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Dataset Description

Uptake of dissolved free amino acids, 15N uptake, Thymidine production

Methods & Sampling

PI: David Kirchman
of: University of Delaware (Lewes, Delaware)
dataset: Uptake of dissolved free amino acids, 15N uptake, Thymidine production
dates: May 20, 1985 to May 28, 1985
location: N: 46.9 S: 46.2 W: -18.5 E: -19.9
Project/cruise: North Atlantic Bloom Experiment/Atlantis II 119, leg 5
ship: R/V Atlantis II

U.S. JGOFS North Atlantic Bloom Experiment (NABE)

Uptake of dissolved free amino acids, 15N uptake and Thymidine production

Prepared by U.S. JGOFS DMO for David Kirchman

N biomass and N uptake by heterotrophic bacteria and phytoplankton were examined during the North Atlantic spring blooom (May 18-31, 1989) aboard the R/V Atlantis II in the vicinity of 47 N, 20 W. The ship followed drifting sediment trap arrays and samples were usually obtained in the morning from CTD/30 litre Niskin rosette casts.

DMO note:
These data lack sufficient metadata to accurately determine sampling location. Data were only reported from a total of 3 sampling locations, and although there were several CTD/Rosette casts done during each of those three days, it is possible through process of elimination to determine the correct station number by matching sampling depths in the bottle data object from this cruise. There are two possible matches for the data reported from 1989-05-20, so the position is estimated from both possible station locations as 46.8333N and 18.347W.

In hopes of making these data more useful, the DMO added metadata to this data object in September 2009, to support geolocation of the data.

date	sta	cast	event	latitude	longitude	sampling_activity
19890520	27	5	05200840	46.8333	-18.3467	CTD/Rosette_200m_N-15/micro
or						
19890520	27	10	05201930	46.8333	-18.3483	CTD/Rosette_200m_N-15/micro
19890522	29	6	05221617	46.3650	-17.9333	CTD/rosette_1000m_del-N-15
19890528	35	4	05281115	46.3367	-17.8650	CTD/rosette_250m_N-15/micro

For a complete description of methodology, please refer to:
Kirchman, DL, HW Ducklow, JJ McCarthy and C Garside, 1994. Biomass and nitrogen uptake by heterotrophic bacteria during the spring phytoplankton bloom in the North Atlantic Ocean. Deep-Sea Research I, Vol.41. No.5/6, pp.879-895

Reference:
Kirchman, DL, HW Ducklow, JJ McCarthy and C Garside, 1994. Biomass and nitrogen uptake by heterotrophic bacteria during the spring phytoplankton bloom in the North Atlantic Ocean. Deep-Sea Research I, Vol.41. No.5/6, pp.879-895

Related data including measured values of heterotrophic bacteria uptake rates of dissolved free amino acids and 15N, bacteria production measured by the thymidine method, and a broad array of derived parameters are available as a downloadable Excel spreadsheet file.

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Data Files

File
uptake_aa_15N.csv (Comma Separated Values (.csv), 433 bytes) MD5:1baf91167281e9de684d9fa96f2be775 Primary data file for dataset ID 2603

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Parameters

Parameter	Description	Units
date	year, month, day as YYYYMMDD	
depth	sample depth	meters
pAmino	amino acid uptake	nanograms N/liter/hour
thy_incorp_ng	thymidine incorporation (TdR)	nanograms N/liter/hour
sta	station number	dimensionless
lat	latitude, minus = south	decimal degrees
lon	longitude, minus = west	decimal degrees

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Instruments

Dataset-specific Instrument Name	Niskin Bottle
Generic Instrument Name	Niskin bottle
Dataset-specific Description	CTD/30 litre Niskin rosette bottle used to collect 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

AII-119-5

Website	https://www.bco-dmo.org/deployment/57738
Platform	R/V Atlantis II
Start Date	1989-05-15
End Date	1989-06-06
Description	late bloom cruise; 31 locations; 61N 22W to 41N 17W

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Project Information

U.S. JGOFS North Atlantic Bloom Experiment (NABE)

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

Coverage: North Atlantic

One of the first major activities of JGOFS was a multinational pilot project, North Atlantic Bloom Experiment (NABE), carried out along longitude 20° West in 1989 through 1991. The United States participated in 1989 only, with the April deployment of two sediment trap arrays at 48° and 34° North. Three process-oriented cruises where conducted, April through July 1989, from R/V *Atlantis II* and R/V *Endeavor* focusing on sites at 46° and 59° North. Coordination of the NABE process-study cruises was supported by NSF-OCE award # 8814229. Ancillary sea surface mapping and AXBT profiling data were collected from NASA's P3 aircraft for a series of one day flights, April through June 1989.

A detailed description of NABE and the initial synthesis of the complete program data collection efforts appear

in: Topical Studies in Oceanography, JGOFS: The North Atlantic Bloom Experiment (1993), Deep-Sea Research II, Volume 40 No. 1/2.

The U.S. JGOFS Data management office compiled a preliminary NABE data report of U.S. activities: Slagle, R. and G. Heimerdinger, 1991. U.S. Joint Global Ocean Flux Study, North Atlantic Bloom Experiment, Process Study Data Report P-1, April-July 1989. NODC/U.S. JGOFS Data Management Office, Woods Hole Oceanographic Institution, 315 pp. (out of print).

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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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Funding

Funding Source	Award
National Science Foundation (NSF)	unknown NABE NSF

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