Ice brine bacteria data from RVIB Nathaniel B. Palmer cruise NBP0204 in the Southern Ocean in 2002 (SOGLOBEC project; Sea Ice Microbes project)

Website: https://www.bco-dmo.org/dataset/2349

Data Type: Cruise Results

Version: 1

Version Date: 2003-12-03

Project

» U.S. GLOBEC Southern Ocean (SOGLOBEC)

» GLOBEC: Sea Ice Microbial Communities (Sea Ice Microbes)

Programs

» U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

» U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

Contributors	Affiliation	Role
Fritsen, Chris H.	Desert Research Institute (DRI)	Principal Investigator
Allison, Dicky	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

Abstract

Ice brine bacteria data from RVIB Nathaniel B. Palmer cruise NBP0204 in the Southern Ocean in 2002 (SOGLOBEC project; Sea Ice Microbes project)

Table of Contents

Coverage

Spatial Extent: **N**:-66.1 **E**:-65.61 **S**:-68.863 **W**:-76.781

Temporal Extent: 2002-08-06 - 2002-09-11

Dataset Description

Bacteria Chlorophyll *a* in Ice Brine

Contributor:
Dr. Christian Fritsen
University and Community College System of Nevada
Desert Research Institute
Div. of Earth and Ecosystem Sciences
2215 Raggio Parkway
Reno, NV 89512
Office: 775/673-7487

Methods:
Brine samples were collected from auger holes that were drilled into sea ice using a 2 inch kovacs coring auger. Brine that flowed into the bottom of the hole was collected using a tygon tubing attached to a 60 cc syringe. Cholorophyll-a concentrations were determined using the techniques as reported in previous submissions of ice core and water column data. Multiple sample numbers reflect replicate samples taken from the same hole.

updated: April 10, 2007

Acquisition Description

Brine samples were collected from auger holes that were drilled into sea ice using a 2 inch kovacs coring auger. Brine that flowed into the bottom of the hole was collected using a tygon tubing attached to a 60 cc syringe. Cholorophyll-a concentrations were determined using the techniques as reported in previous submissions of ice core and water column data. Multiple sample numbers reflect replicate samples taken from the same hole.

Processing Description

```
#   Ice brine chlorophyll-a concentrations from ice core holes
#            Southern Ocean, GLOBEC
#   C. Fritsen, Desert Research Institute
#   RVIB Nathaniel B. Palmer cruise NMP02-04, July-Sept 2002
#            * chla = chlorophyll-a, micrograms per liter (ug/l)
#            * lat = latitude reported in decimal degrees south
#            * lon = longitude reportred in decimal degrees west
#            * bot_depth  =  depth to bottom of ice core hole in meters
```

[table of contents | back to top]

Parameters

Parameter	Description	Units
cruiseid	cruise identification	
year	year	
station	station identification	
event	event number from event log	
lat	latitude, negative = South	decimal degrees
lon	longitude, negative = West	decimal degrees
month_gmt	month of year	GMT
day_gmt	day of month	GMT
yrday_gmt	day of year, Jan. 1 = 1	GMT
sample_id	brine sample number/identification	
bottom_depth	depth to bottom of ice core hole	decimal meters
chl_a_ugm	total chlorophyll a pigment concentration	micrograms/liter

[table of contents | back to top]

Instruments

Dataset-specific Instrument Name	IceCoring
Generic Instrument Name	Ice Corer
Dataset-specific Description	Brine samples were collected from auger holes that were drilled into sea ice using a 2 inch kovacs coring auger. Brine that flowed into the bottom of the hole was collected using a tygon tubing attached to a 60 cc syringe.
Generic Instrument Description	An ice corer is used to drill into deep ice and remove long cylinders of ice from which information about the past and present can be inferred. Polar ice cores contain a record of the past atmosphere - temperature, precipitation, gas content, chemical composition, and other properties. This can reveal a broad spectrum of information on past environmental, and particularly climatic, changes. They can also be used to study bacteria and chlorophyll production in the waters from which the ice core was extracted.

[table of contents | back to top]

Deployments

NBP0204

Website	https://www.bco-dmo.org/deployment/57643
Platform	RVIB Nathaniel B. Palmer
Report	http://globec.whoi.edu/so-dir/reports/nbp0204/nbp0204b.html
Start Date	2002-07-31
End Date	2002-09-18
Description	**Acquisition Description** Brine samples were collected from auger holes that were drilled into sea ice using a 2 inch kovacs coring auger. Brine that flowed into the bottom of the hole was collected using a tygon tubing attached to a 60 cc syringe. Cholorophyll-a concentrations were determined using the techniques as reported in previous submissions of ice core and water column data. Multiple sample numbers reflect replicate samples taken from the same hole. **Processing Description** # Ice brine chlorophyll-a concentrations from ice core holes # Southern Ocean, GLOBEC # C. Fritsen, Desert Research Institute # RVIB Nathaniel B. Palmer cruise NMP02-04, July-Sept 2002 # * chla = chlorophyll-a, micrograms per liter (ug/l) # * lat = latitude reported in decimal degrees south # * lon = longitude reportred in decimal degrees west # * bot_depth = depth to bottom of ice core hole in meters

Project Information

U.S. GLOBEC Southern Ocean (SOGLOBEC)

Website: http://www.ccpo.odu.edu/Research/globec_menu.html

Coverage: Southern Ocean

The fundamental objectives of United States Global Ocean Ecosystems Dynamics (U.S. GLOBEC) Program are dependent upon the cooperation of scientists from several disciplines. Physicists, biologists, and chemists must make use of data collected during U.S. GLOBEC field programs to further our understanding of the interplay of physics, biology, and chemistry. Our objectives require quantitative analysis of interdisciplinary data sets and, therefore, data must be exchanged between researchers. To extract the full scientific value, data must be made available to the scientific community on a timely basis.

GLOBEC: Sea Ice Microbial Communities (Sea Ice Microbes)

Coverage: Southern Ocean

The U.S. Global Ocean Ecosystems Dynamics (U.S. GLOBEC) program has the goal of understanding and ultimately predicting how populations of marine animal species respond to natural and anthropogenic changes in climate. Research in the Southern Ocean (SO) indicates strong coupling between climatic processes and ecosystem dynamics via the annual formation and destruction of sea ice. The Southern Ocean GLOBEC Program (SO GLOBEC) will investigate the dynamic relationship between physical processes and ecosystem responses through identification of critical parameters that affect the distribution, abundance and population dynamics of target species. The overall goals of the SO GLOBEC program are to elucidate shelf circulation processes and their effect on sea ice formation and krill distribution, and to examine the factors which govern krill survivorship and availability to higher trophic levels, including penguins, seals and whales. The focus of the U.S. contribution to the international SO GLOBEC program will be on winter processes. This component will focus on the distribution and activities of sea ice microbial communities. This will be accomplished using an integrated combination of sampling (vertical profiles, horizontal

surveys, and under-ice surveys) and observational protocols. Experiments will be designed to estimate microbial activity within the sea ice and at the ice-seawater interface. The research will be coordinated with components studying the water column productivity and the sea ice habitat. The result of the integrated SO GLOBEC program will be to improve the predictability of living marine resources, especially with respect to local and global climatic shifts.

[table of contents | back to top]

Program Information

U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

Website: http://www.usglobec.org/

Coverage: Global

U.S. GLOBEC (GLOBal ocean ECosystems dynamics) is a research program organized by oceanographers and fisheries scientists to address the question of how global climate change may affect the abundance and production of animals in the sea. The U.S. GLOBEC Program currently had major research efforts underway in the Georges Bank / Northwest Atlantic Region, and the Northeast Pacific (with components in the California Current and in the Coastal Gulf of Alaska). U.S. GLOBEC was a major contributor to International GLOBEC efforts in the Southern Ocean and Western Antarctic Peninsula (WAP).

U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

Website: http://www.usglobec.org/

Coverage: Global

U.S. GLOBEC (GLOBal ocean ECosystems dynamics) is a research program organized by oceanographers and fisheries scientists to address the question of how global climate change may affect the abundance and production of animals in the sea. The U.S. GLOBEC Program currently had major research efforts underway in the Georges Bank / Northwest Atlantic Region, and the Northeast Pacific (with components in the California Current and in the Coastal Gulf of Alaska). U.S. GLOBEC was a major contributor to International GLOBEC efforts in the Southern Ocean and Western Antarctic Peninsula (WAP).

[table of contents | back to top]

Funding

Funding Source	Award
NSF Antarctic Sciences (NSF ANT)	ANT-9910098

[table of contents | back to top]