Temperature, salinity, nutrients from Trace Metal casts from RVIB Nathaniel B. Palmer and R/V Roger Revelle cruises in the Southern Ocean, 1997-1998 (U.S. JGOFS AESOPS project)

Website: https://www.bco-dmo.org/dataset/2738
Version: final
Version Date: 2002-12-18

Project
» U.S. JGOFS Antarctic Environment and Southern Ocean Process Study (AESOPS)

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

Contributors	Affiliation	Role
Codispoti, Louis A.	Old Dominion University (ODU)	Principal Investigator
Chandler, Cynthia L.	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

Table of Contents

Dataset Description

Temperature, salinity, nutrients from Trace Metal casts

[table of contents | back to top]

Parameters

Parameter	Description	Units
event	event number from event log	
sta	station number from event log	
cast	TM cast number	
date	date (YYYYMMDD) decoded as follows YYYY = year, MM = month, DD = day. Date converted to GMT.	
time_begin	starting time of cast in UTC	decimal hours
time_end	ending time of cast in UTC	decimal hours
lat_begin	starting latitude of cast, negative = south	decimal degrees
lon_begin	starting longitude of cast, negative = west	decimal degrees
lat_end	ending latitude of cast	decimal degrees
lon_end	ending longitude of cast	decimal degrees
bot	TM rosette bottle sequence number	
press	depth of sample reported as pressure	decibars
depth	depth calculated from pressure	meters
temp	temperature from CTD probe when sampling bottle tripped	degrees C
sal_ctd	CTD salinity (PSS-78) when bottle tripped	dimensionless
sal_bot	bottle salinity (Autosal; PSU)	dimensionless
O2_ml_L	oxygen (winkler)	milliliters/liter
O2_umol_kg	oxygen (winkler)	micromoles/kilogram
O2_umol_L	oxygen (winkler)	micromoles/liter
NO3	nitrate	micromoles/liter
PO4	phosphate	micromoles/liter
SiO4	silicate	micromoles/liter
NO2	nitrite	micromoles/liter
NH4	ammonium	micromoles N/liter
lat	latitude of cast, negative = south	decimal degrees
lon	longitude of cast, negative = west	decimal degrees
depth_n	nominal sample depth	meters

[table of contents | back to top]

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.

[table of contents | back to top]

Deployments

NBP-96-04A

Website	https://www.bco-dmo.org/deployment/57718
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/p1.html
Start Date	1996-10-02
End Date	1996-11-08
Description	Ross Sea Process Study 1 **Methods & Sampling** PI: Louis Codispoti of: Old Dominion University dataset: Temp, salinity, nutrients from Trace Metal casts dates: October 08, 1996 to November 05, 1996 location: N: -63.454 S: -77.9638 W: 168.9967 E: -170.5822 project/cruise: AESOPS/NBP-96-4A - Ross Sea Process Cruise 1 ship: R/V Nathaniel B. Palmer Sampling Methodology DMO note on calculated depth AESOPS Investigators, Please note: Begin and end parameters for time, latitude and longitude are used in the core CTD, Bottle and TM bottle data. Investigators submitting data related to CTD/Bottle/TM casts are urged to use the single lat/lon entry from the Chief Scientist's event log. DMO note (020513): add depth calculated from pressure

NBP-97-01

Website	https://www.bco-dmo.org/deployment/57720
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/p2.html
Start Date	1997-01-13
End Date	1997-02-11
Description	Ross Sea Process Study 2 **Methods & Sampling** PI: Louis Codispoti of: Old Dominion University dataset: Temp, salinity, nutrients from Trace Metal casts dates: January 15, 1997 to February 08, 1997 location: N: -73.9972 S: -78.043 W: 163.3482 E: -175.9906 project/cruise: AESOPS/NBP-97-1 - Ross Sea Process Cruise 2 ship: R/V Nathaniel B. Palmer Sampling Methodology DMO note on calculated depth AESOPS Investigators, Please note: Begin and end parameters for time, latitude and longitude are used in the core CTD, Bottle and TM bottle data. Investigators submitting data related to CTD/Bottle/TM casts are urged to use the single lat/lon entry from the Chief Scientist's event log. DMO note (020513): add depth calculated from pressure

NBP-97-03

Website	https://www.bco-dmo.org/deployment/57721
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/p3.html
Start Date	1997-04-04
End Date	1997-05-11
Description	Ross Sea Process Study 3 **Methods & Sampling** PI: Louis Codispoti of: Old Dominion University dataset: Temp, salinity, nutrients from Trace Metal casts dates: April 09, 1997 to April 24, 1997 location: N: -67.6378 S: -77.9962 W: 169.0144 E: -176.0121 project/cruise: AESOPS/NBP-97-3 - Ross Sea Process Cruise 3 ship: R/V Nathaniel B. Palmer Sampling Methodology DMO note on calculated depth AESOPS Investigators, Please note: Begin and end parameters for time, latitude and longitude are used in the core CTD, Bottle and TM bottle data. Investigators submitting data related to CTD/Bottle/TM casts are urged to use the single lat/lon entry from the Chief Scientist's event log. DMO note (020409): add several events to facilitate bottleTM merge: added events: 04121818, 04141658 and 04201924 For these events ONLY, depth is nominal depth (depth_n) and pressure was calculated from depth_n DMO note (020513): add depth calculated from pressure

NBP-97-08

Website	https://www.bco-dmo.org/deployment/57722
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/p4.html
Start Date	1997-11-05
End Date	1997-12-13
Description	Ross Sea Process Study 4 SeaWiFS transmits images to U.S. JGOFS scientists aboard the Palmer, for first time on November 23, 1997. **Methods & Sampling** PI: Louis Codispoti of: Old Dominion University dataset: Temp, salinity, nutrients from Trace Metal casts dates: November 14, 1997 to December 11, 1997 location: N: -71.4372 S: -76.6287 W: 168.9257 E: -177.9637 project/cruise: AESOPS/NBP-97-8 - Ross Sea Process Cruise 4 ship: R/V Nathaniel B. Palmer Sampling Methodology DMO note on calculated depth AESOPS Investigators, Please note: Begin and end parameters for time, latitude and longitude are used in the core CTD, Bottle and TM bottle data. Investigators submitting data related to CTD/Bottle/TM casts are urged to use the single lat/lon entry from the Chief Scientist's event log. DMO note (020513): add depth calculated from pressure

KIWI6

Website	https://www.bco-dmo.org/deployment/57724
Platform	R/V Roger Revelle
Report	http://usjgofs.whoi.edu/aesops/RRs1.html
Start Date	1997-10-20
End Date	1997-11-24
Description	Polar Front Survey I **Methods & Sampling** PI: Louis Codispoti of: Old Dominion University dataset: Temp, salinity, nutrients from Trace Metal casts dates: October 24, 1997 to November 04, 1997 location: N: -57 S: -62.3658 W: -170.0765 E: -168.9993 project/cruise: AESOPS/KIWI06 - APFZ Polar Front Survey Cruise 1 ship: R/V Roger Revelle Sampling Methodology DMO note on calculated depth AESOPS Investigators, Please note: Begin and end parameters for time, latitude and longitude are provided in the core CTD and Bottle data. Investigators submitting data related to CTD/Bottle casts are urged to use the single lat/lon entry from the Chief Scientist's event log. DMO note (020513): add depth calculated from pressure

KIWI7

Website	https://www.bco-dmo.org/deployment/57725
Platform	R/V Roger Revelle
Report	http://usjgofs.whoi.edu/aesops/RRp1.html
Start Date	1997-12-02
End Date	1998-01-03
Description	Polar Front Process I **Methods & Sampling** PI: Louis Codispoti of: Old Dominion University dataset: Temperature, salinity, nutrients from TM cast bottles dates: December 05, 1997 to December 30, 1997 location: N: -52.9388 S: -64.696 W: -174.7217 E: -168.8332 project/cruise: AESOPS/KIWI07 - APFZ Polar Front Process Cruise 1 ship: R/V Roger Revelle Sampling Methodology Please note: The trace metal clean rosette on this leg was equipped with 6, 30-l Go-Flo bottles and did NOT include a CTD. It was a temporary replacement for the 8-bottle, CTD equipped system that was lost on 13 November 1997.

KIWI8

Website	https://www.bco-dmo.org/deployment/57726
Platform	R/V Roger Revelle
Report	http://usjgofs.whoi.edu/aesops/RRs2.html
Start Date	1998-01-08
End Date	1998-02-08
Description	Polar Front Survey II **Methods & Sampling** PI: Louis Codispoti of: Old Dominion University dataset: Temp, salinity, nutrients from Trace Metal casts dates: January 16, 1998 to January 28, 1998 location: N: -60 S: -67.7842 W: -170.1283 E: -170.1 project/cruise: AESOPS/KIWI08 - APFZ Polar Front Survey Cruise 2 ship: R/V Roger Revelle Sampling Methodology DMO note on calculated depth PI Note: PROBLEMS WERE ENCOUNTERED WITH THE AMMONIUM ANALYSIS AT THE BEGINNING OF THIS CRUISE. THUS, AMMONIUM DATA ARE NOT REPORTED UNTIL STATION 4, CAST 2. AESOPS Investigators, Please note: Begin and end parameters for time, latitude and longitude are provided in the core CTD and Bottle data. Investigators submitting data related to CTD/Bottle casts are urged to use the single lat/lon entry from the Chief Scientist's event log. DMO note (020513): add depth calculated from pressure

KIWI9

Website	https://www.bco-dmo.org/deployment/57727
Platform	R/V Roger Revelle
Report	http://usjgofs.whoi.edu/aesops/RRp2.html
Start Date	1998-02-13
End Date	1998-03-19
Description	Polar Front Process II **Methods & Sampling** PI: Louis Codispoti of: Old Dominion University dataset: Temp, salinity, nutrients from Trace Metal casts dates: February 18, 1998 to March 14, 1998 location: N: -54.3333 S: -71.3072 W: -173.3333 E: -165.9132 project/cruise: AESOPS/KIWI09 - APFZ Polar Front Process Cruise 2 ship: R/V Roger Revelle Sampling Methodology DMO note on calculated depth AESOPS Investigators, Please note: Begin and end parameters for time, latitude and longitude are provided in the core CTD and Bottle data. Investigators submitting data related to CTD/Bottle casts are urged to use the single lat/lon entry from the Chief Scientist's event log. DMO note (020513): add depth calculated from pressure

[table of contents | back to top]

Project Information

U.S. JGOFS Antarctic Environment and Southern Ocean Process Study (AESOPS)

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

Coverage: Southern Ocean, Ross Sea

The U.S. Southern Ocean JGOFS program, called Antarctic Environment and Southern Ocean Process Study (AESOPS), began in August 1996 and continued through March 1998. The U.S. JGOFS AESOPS program focused on two regions in the Southern Ocean: an east/west section of the Ross-Sea continental shelf along 76.5°S, and a second north/south section of the Southern Ocean spanning the Antarctic Circumpolar Current (ACC) at ~170°W (identified as the Polar Front). The science program, coordinated by Antarctic Support Associates (ASA), comprised eleven cruises using the R.V.I.B Nathaniel B. Palmer and R/V Roger Revelle as observational platforms and for deployment and recovery of instrumented moorings and sediment-trap arrays. The Ross-Sea region was occupied on six occasions and the Polar Front five times. Mapping data were obtained from SeaSoar, ADCP, and bathymetric systems. Satellite coverage was provided by the NASA SeaWiFS and the NOAA/NASA Pathfinder programs.

[table of contents | back to top]

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).

[table of contents | back to top]