Temperature, salinity, nutrients from CTD/Niskin 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/2722
Version: October 11, 2000
Version Date: 2000-10-11

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
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Dataset Description

Temperature, salinity, nutrients from CTD/Niskin casts

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Parameters

Parameter	Description	Units
event	a unique number assigned to each sampling operation consisting of month MM, day DD hour HH and minute mm	
sta	station number	
cast	CTD cast number	
date	date (YYYYMMDD) decoded as follows YYYY = year, MM = month, DD = day Date converted to UTC(GMT).	
time_begin	start time of cast in UTC(GMT)	decimal hours
time_end	end time of cast in UTC(GMT)	decimal hours
lat_begin	start latitude of cast (negative = South)	decimal degrees
lon_begin	start longitude of cast (negative = West)	decimal degrees
lat_end	end latitude of cast	decimal degrees
lon_end	end longitude of cast	decimal degrees
bot	CTD rosette bottle number	
press	sample depth reported as pressure	decibars
depth	depth calculated from pressure	meters
temp	temperature, taken from CTD, IPTS-68	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

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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.

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Deployments

NBP-96-4

Website	https://www.bco-dmo.org/deployment/57717
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/ss.html
Start Date	1996-08-30
End Date	1996-09-24
Description	Site Survey Cruise **Methods & Sampling** PI: Lou Codispoti of: Old Dominion University dataset: Temp, salinity, nutrients from Niskin bottles dates: September 06, 1996 to September 12, 1996 location: N: -60.917 S: -64.1155 W: -170.0035 E: -169.364 project/cruise: AESOPS/NBP-96-4 - Site Survey Cruise ship: Nathaniel B. Palmer 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.

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 Niskin bottles dates: October 08, 1996 to November 06, 1996 location: N: -63.4455 S: -78.0348 W: 168.9800 E: -170.5797 project/cruise: AESOPS/NBP-96-4A - Ross Sea Process Cruise 1 ship: Nathaniel B. Palmer 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.

NBP-96-5

Website	https://www.bco-dmo.org/deployment/57719
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/m1.html
Start Date	1996-11-11
End Date	1996-12-01
Description	Moorings Deployment **Methods & Sampling** PI: Louis Codispoti of: Old Dominion University dataset: Temp, salinity, nutrients from Niskin bottles dates: November 13, 1996 to November 26, 1996 location: N: -53.0385 S: -76.5168 W: 176.9095 E: -169.6785 project/cruise: AESOPS/NBP-96-5 - Mooring and Trap Deployment ship: Nathaniel B. Palmer Sampling Methodology DMO note on calculated depth PI-Note: SOME FROZEN NUTRIENT SAMPLES WERE COLLECTED ON THIS LEG, AND SUBSEQUENTLY ANALYZED DURING PALMER LEG 97-01. THESE SAMPLES APPEARED TO SUFFER FROM VARIOUS STORAGE AND LABELING PROBLEMS, SO THEY ARE NOT INCLUDED IN THIS REPORT. 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.

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: Lou Codispoti of: Old Dominion University dataset: Temperature, salinity, nutrients from Niskin bottles dates: January 13, 1997 to February 09, 1997 location: N: -74.0029 S: -78.0498 W: 163.3383 E: -173.9992 project/cruise: AESOPS/NBP-97-1 - Ross Sea Process Cruise 2 ship: Nathaniel B. Palmer 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.

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: Lou Codispoti of: Old Dominion University dataset: Temperature, salinity, nutrients from Niskin bottles dates: April 08, 1997 to May 05, 1997 location: N: -63.5023 S: -77.964 W: 168.8260 E: -176.0699 project/cruise: AESOPS/NBP-97-3 - Ross Sea Process Cruise 3 ship: Nathaniel B. Palmer 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.

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: Lou Codispoti of: Old Dominion University dataset: Temperature, salinity, nutrients from Niskin bottles dates: November 10, 1997 to December 12, 1997 location: N: -60.1627 S: -77.888 W: 168.7308 E: -169.8918 project/cruise: AESOPS/NBP-97-8 - Ross Sea Process Cruise 4 ship: Nathaniel B. Palmer 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.

NBP-98-2

Website	https://www.bco-dmo.org/deployment/57723
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/nbp-bp_mr.html
Start Date	1998-02-25
End Date	1998-04-03
Description	Benthic Process and Moorings Recovery **Methods & Sampling** PI: Lou Codispoti of: Old Dominion University dataset: Temperature from CTD, salinity from Niskin bottles dates: February 26, 1998 to March 31, 1998 location: N: -49.9148 S: -76.5017 W: 176.8417 E: -169.5078 project/cruise: AESOPS/NBP-98-2 - Benthic Process and Mooring Recovery Cruise ship: Nathaniel B. Palmer Sampling Methodology DMO note on calculated depth DMO note: No nutrient values were submitted for this cruise. 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.

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: Temperature, salinity, nutrients from CTD cast bottles dates: October 23, 1997 to November 18, 1997 location: N: -56.9998 S: -62.341 W: -171.9 E: -168.0622 project/cruise: AESOPS/KIWI06 - APFZ Polar Front Survey Cruise 1 ship: 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.

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 CTD cast bottles dates: December 04, 1997 to December 30, 1997 location: N: -52.9143 S: -64.7418 W: -174.7303 E: -168.8302 project/cruise: AESOPS/KIWI07 - APFZ Polar Front Process Cruise 1 ship: 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.

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: Temperature, salinity, nutrients from CTD cast bottles dates: January 12, 1998 to January 28, 1998 location: N: -56.9998 S: -67.7842 W: -170.1117 E: -169.9983 project/cruise: AESOPS/KIWI08 - APFZ Polar Front Survey Cruise 2 ship: 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 3. 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.

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: Temperature, salinity, nutrients from CTD cast bottles dates: February 15, 1998 to March 15, 1998 location: N: -52.966 S: -71.3157 W: -174.7755 E: -165.9143 project/cruise: AESOPS/KIWI09 - APFZ Polar Front Process Cruise 2 ship: 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.

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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.

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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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