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<http://bco-dmo.org>

BCO-DMO

BATS

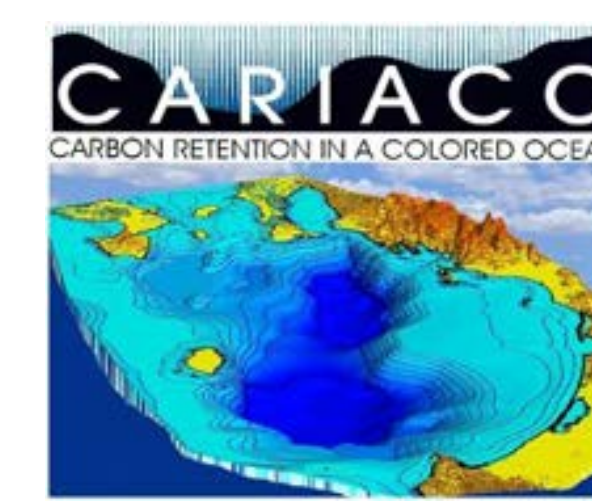
CARIACO

HOT

The Biological and Chemical Oceanography Data Management Office (BCO-DMO) is located at Woods Hole Oceanographic Institution and is funded to serve the data management requirements of investigators funded by the U.S. National Science Foundation (NSF) Biological and Chemical Oceanography Sections (OCE) and Office of Polar Programs (OPP) Antarctic Sciences (ANT) Organisms & Ecosystems Program. The office was created in late 2006, by combining the formerly independent data management offices for the U.S. GLOBEC and U.S. JGOFS programs. Data managers at BCO-DMO have worked with investigators from three of the NSF-funded, ship-based, ocean time-series programs to add the data gathered during the monthly cruises to the BCO-DMO data system. All of the CARIACO data are available from BCO-DMO, and recently the Niskin bottle data from HOT and BATS were added to the online database. Work has already been initiated to add other data including: primary production, zooplankton, biogeochemistry and particulate flux.



The Bermuda Atlantic Time-series Study (BATS, 32° 10'N, 64° 30'W) was established in 1988 to study the ocean carbon cycle by analyzing important hydrographic and biological parameters throughout the water column. BATS complements the other Sargasso Sea time-series, the Ocean Flux Program (OFP) a deep sediment trap mooring in place since 1978, and Hydrostratation "S" a hydrographic time-series sampled approximately biweekly since 1954. Currently, BATS makes monthly measurements of important hydrographic, biological and chemical parameters throughout the water column at different sites within the Sargasso Sea.



Since 1995, the CARIACO (CARBON Retention In A Colored Ocean) Program has studied the relationship between surface primary production, physical forcing variables like the wind, and the settling flux of particulate carbon in the Cariaco Basin. Located on the continental shelf of Venezuela (10.5° N, 64.67° W), the Cariaco Basin shows marked seasonal and interannual variation in hydrographic properties and primary production. Due to its high rates of sedimentation and excellent preservation, the varved sediments of the Cariaco Basin offer the opportunity to study high resolution paleoclimate and to better understand the role of the tropics in global climate change.



Since October 1988, the Hawaii Ocean Time-series (HOT) program has investigated temporal dynamics in biology, physics, and chemistry at Station ALOHA (22° 45' N, 158° W), a deep ocean field site in the oligotrophic North Pacific Subtropical Gyre (NPSG). HOT conducts near monthly ship-based sampling and makes continuous observations from moored instruments to document and study NPSG climate and ecosystem variability over semi-diurnal to decadal time scales. HOT was founded to understand the processes controlling the time-varying fluxes of carbon and associated biogenic elements in the ocean and to document changes in the physical structure of the water column.

Text-based Access to BATS Data

Person	Role	Affiliation
Nicholas Bates	Principal Investigator	Bermuda Institute of Ocean Sciences
Michael Lomas	Principal Investigator, Contact	Bermuda Institute of Ocean Sciences
Rodney Johnson	Co-Principal Investigator	Bermuda Institute of Ocean Sciences

Text-based Access to CARIACO Data

Person	Role	Affiliation
Frank Muller-Karger	Lead Principal Investigator	University of South Florida
Yrene Astor	Co-Principal Investigator	Estacion de Investigaciones Marinas de Margarita
Mary Scranton	Co-Principal Investigator	Stony Brook University
Gordon Taylor	Co-Principal Investigator	Stony Brook University
Robert Thunell	Co-Principal Investigator	University of South Carolina
Ramon Varela	Co-Principal Investigator	Estacion de Investigaciones Marinas de Margarita
Laura Lorenzoni	Contact	University of South Florida

Text-based Access to HOT Data

Person	Role	Affiliation
Matthew Church	Lead Principal Investigator	University of Hawaii
David Karl	Principal Investigator	University of Hawaii
Robert Bidigare	Co-Principal Investigator	University of Hawaii
Roger Lukas	Co-Principal Investigator	University of Hawaii



BATS Niskin Bottle Data

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# version: 20 November 2012
# Niskin bottle sample data
# from monthly cruises to the BATS site

cruise_type cruise date_type date year month day time year_decimal lon lat
-----
1 0139 02 20000314 2000 03 14 1452 2000.18996 -64.134 31.583

bot depth temp sal_ctd sal_bot sigma-t O2 O2_fixt O2_anom DIC TAIXE BO3 BO2 PO4
-----
01 3.3 19.361 36.666 36.666 26.158 226.1 19.5 0.7 2060.3 2393.5 0.11 0.00 0.00
02 3.4 19.313 36.666 36.666 26.189 226.1 19.5 0.7 2060.3 2393.5 0.11 0.00 0.00
03 10.2 19.266 36.666 36.665 26.212 225.9 19.3 0.2 2062.0 2395.5 0.00 0.00 0.00
04 10.8 19.266 36.666 36.665 26.212 225.9 19.3 0.2 2062.0 2395.5 0.00 0.00 0.00
05 20.4 19.249 36.647 36.648 26.219 226.4 19.2 0.6 2063.9 2395.5 0.14 0.00 0.00
06 30.7 19.249 36.647 36.648 26.219 226.4 19.2 0.6 2063.9 2395.5 0.14 0.00 0.00
07 41.2 19.238 36.646 36.645 26.221 226.2 19.2 0.4 2066.9 2391.5 0.11 0.00 0.00
08 40.9 19.238 36.646 36.645 26.221 226.2 19.2 0.4 2066.9 2391.5 0.11 0.00 0.00
09 60.2 19.180 36.600 36.639 26.232 224.3 19.2 -1.8 2064.7 2400.5 0.20 0.00 0.00
10 60.3 19.179 36.600 36.639 26.233 224.3 19.2 -1.8 2064.7 2400.5 0.20 0.00 0.00
11 80.4 19.090 36.637 36.637 26.235 216.9 19.2 0.5 2063.3 2395.5 0.35 0.14 0.04
12 80.1 19.090 36.637 36.637 26.235 216.9 19.2 0.5 2063.3 2395.5 0.35 0.14 0.04
13 99.7 19.080 36.637 36.637 26.235 216.9 19.2 0.5 2063.3 2395.5 0.35 0.14 0.04
14 99.8 19.080 36.637 36.637 26.235 216.9 19.2 0.5 2063.3 2395.5 0.35 0.14 0.04
15 120.8 19.078 36.637 36.637 26.240 215.7 19.2 0.5 2071.9 2404.0 1.08 0.19 0.00
17 120.3 19.078 36.637 36.637 26.240 215.7 19.2 0.5 2071.9 2404.0 1.08 0.19 0.00
18 120.3 19.078 36.637 36.637 26.240 215.7 19.2 0.5 2071.9 2404.0 1.08 0.19 0.00
    
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CARIACO Niskin Bottle Data

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# version: 05 November 2010
# source: CARIACO Master bottle file
# CARIACO Niskin bottle data

cruise_id cruise_date cruise_date_type date year month day time year_decimal lon lat
-----
0186 001 2 144.47 10.5 19951008 08 11 1995

Depth_target depth_level O2_ml_L O2_ml_L_Q O2_umol_kg O2_umol_kg_Q S10M_Cumena S10M_Cumena_Q POC_Cumena POC_Cumena_Q NO3_Cumena
-----
1 1.500 0.0 0 0.00 0 2.40 1 0.00 1 0.19
7 6.500 4.41 0 192.4 0 2.60 1 0.00 1 0.17
15 15.000 4.38 0 191.1 0 2.20 1 0.00 1 0.14
25 35.000 4.27 0 180.6 0 0.00 1 0.00 1 0.17
35 35.000 4.27 0 186.2 0 1.90 1 0.01 1 0.85
95 94.500 3.88 0 170.2 0 0.04 1 0.04 1 0.83
75 74.500 3.87 0 168.7 0 2.20 1 0.08 1 1.08
200 200.000 0.48 0 18.4 0 22.18 1 1.05 1 10.57
100 97.000 3.88 0 170.2 0 0.00 1 0.00 1 2.62
150 151.500 1.81 0 0.00 0 10.70 1 0.96 1 10.69
300 300.000 0.00 0 0.00 0 44.20 1 2.54 1 0.29
350 350.000 0.00 0 0.00 0 44.30 1 2.64 1 0.29
400 409.500 0.00 0 0.00 0 58.40 1 2.81 1 0.19
450 451.000 0.00 0 0.00 0 86.50 1 2.99 1 0.20
500 502.500 0.00 0 0.00 0 74.70 1 3.11 1 0.20
700 702.500 0.00 0 0.00 0 61.70 1 3.32 1 0.00
1000 1005.000 0.00 0 0.00 0 80.30 1 3.45 1 0.07
1200 1210.000 0.00 0 0.00 0 94.10 1 3.57 1 0.06
    
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HOT Niskin Bottle Data

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# version: 16 November 2012
# Niskin bottle sample data
# from monthly HOT cruises to deep-water Station ALOHA

cruise_name year month day time year_decimal lon lat
-----
014 1988 10 08 00

CSTRD date year month time lon lat lon depth_max pmxax
-----
6 19900413 13 04 0455 22:35 -158.008 4750 1074

ROBETTE REPLIC1 CROSS CTDRD CTDRD1 THEXA SDRGA SALINITY OXYGEN DIC pH TAIXE pO2 PO4
-----
23 1 61.5 22.289 16.087 212.9 22.227 24.229 35.0979 0.0 0.0 0.0 0.0 0.0 0.0
22 1 128.7 21.861 16.151 202.9 21.889 24.409 35.1670 214.1 0.0 0.0 0.0 0.0
21 1 137.0 21.728 16.140 205.3 21.869 24.449 35.1970 211.2 0.0 0.0 0.0 0.0
19 1 132.2 21.576 16.215 194.9 21.480 24.513 35.2002 204.9 0.0 0.0 0.0 0.0
18 1 140.4 21.393 16.200 191.3 21.043 24.504 35.2004 204.4 0.0 0.0 0.0 0.0
17 1 178.9 21.075 16.213 191.3 21.043 24.444 35.2124 199.1 2011.7 0.0 0.0 0.0 0.0
16 1 180.6 20.872 16.204 184.4 20.439 24.602 35.1187 187.0 0.0 0.0 0.0 0.0
15 1 207.0 20.767 16.227 204.2 20.213 24.743 35.2239 184.7 0.0 0.0 0.0 0.0
14 1 214.6 20.484 16.204 184.4 20.439 24.602 35.1187 187.0 0.0 0.0 0.0 0.0
13 1 231.2 19.480 16.097 183.0 19.445 24.999 35.205 190.1 2034.3 0.0 0.0 0.0 0.0
12 1 235.0 17.743 16.808 181.1 17.488 25.232 34.8600 184.0 2044.4 0.0 0.0 0.0 0.0
11 1 238.9 17.743 16.808 181.1 17.488 25.232 34.8600 184.4 2044.4 0.0 0.0 0.0 0.0
10 1 238.9 17.743 16.808 181.1 17.488 25.232 34.8600 184.4 2044.4 0.0 0.0 0.0 0.0
    
```

A variety of interfaces provide access to the online database. All are driven by metadata entered for each data set in the BCO-DMO system. Documentation (metadata) describing the who, what, where, when, how and why of each data set provides essential information used to discover and provide access to the data. Visitors to the online catalog can opt to use either the text-based access system or the map-based system to discover data resources. Once a data set of interest has been identified, tools are available to generate 'quick-view' plots and data listings. Data sets can be combined or sub-selected and then exported for download in a variety of user-selected formats.

The time-series site data are a valuable addition to the BCO-DMO data system that already includes data from many other NSF-funded coastal, ocean and Great Lakes research projects.

Acknowledgments

The BCO-DMO is funded by the U.S. National Science Foundation. We acknowledge the work done by the investigators of the ship-based, ocean time-series projects who are listed elsewhere in this poster. The user interfaces to the BCO-DMO data system have been developed in collaboration with Charlton Galvarino (Second Creek Consulting), Julie Allen (Woods Hole Oceanographic Institution) and BCO-DMO programmer, Adam Shepherd.

Select a sampling location dot on the map to display a data access tool from which one can access the data online or create 'quick-view' plots.

Niskin bottle samples (1) @ CARIACO

Niskin bottle samples (1) @ HOT