

Biological and Chemical Oceanography Data Management Office (BCO-DMO)

Cyndy Chandler
18 July 2011



BCO-DMO

- What is BCO-DMO?
- Who is BCO-DMO?
- Data Management at BCO-DMO
- BCO-DMO Data System



BCO-DMO staff provide data management support, at no cost to the project, for investigators and projects funded by NSF Ocean Sciences Biological and Chemical Oceanography Sections or NSF OPP ANT Organisms & Ecosystems Program

- partner with individual investigators and those associated with collaborative research projects
- data management support throughout the project
- capture and record documentation (metadata) sufficient to support data reuse and re-purposing
- load data and metadata into a relational database and ensure their availability online
- ensure final archive in appropriate data center (e.g. NODC); connect with special repositories (e.g. CDIAC, OBIS, GenBank)

'proposal to preservation'

BCO-DMO Staff



- Biology Department

- Peter Wiebe (Lead Investigator)
- Robert Groman (co-PI)
- Dicky Allison (Data Specialist)
- Tobias Work (Programmer)

U.S. GLOBEC DMO

- Marine Chemistry and Geochemistry

- David Glover (co-PI)
- Cyndy Chandler (co-PI)
- Stephen Gegg (Data Specialist)

former U.S. JGOFS DMO

- additional data specialists, consultants and collaborators as needed



BCO-DMO staff are funded to ...

- support NSF OCE and OPP funded researchers
- ensure that data are ...
 - available to the research community in a timely manner
 - sufficiently documented to facilitate reuse and re-purposing
- work with investigators during all phases of research:
 - data management planning and stewardship
 - proposal writing (NSF data management plans)
 - cruise preparation
 - cruise and data documentation
 - effective organization of data in the BCO-DMO data system
 - permanent archive of data at NODC

BCO-DMO staff work in partnership with PIs

- to create well-documented data sets from research programs involving a wide variety of sampling gear



Data Discovery and Availability

- our primary task is to ensure that data from NSF OCE funded awards are freely available online
- the BCO-DMO data system and interfaces facilitate
 - data discovery
 - data access to assess fitness-for-purpose
 - data export and download
 - data preservation in a permanent archive (the National Oceanographic Data Center (NODC))

Database

- Welcome
- Programs 19
- Projects 155
- Deployments 1368
- Instruments 231
- Datasets 5229
- People 1114
- Affiliations 251
- Funding 40
- Parameters 1174

Data Access

- Geospatial access

<http://bco-dmo.org/>
BCO-DMO
Text-based browse

Biological and Chemical Oceanography Database

The Biological and Chemical Oceanography Data Management Office (BCODMO) staff members work with investigators to publish data from research projects funded by the Biological and Chemical Oceanography Sections at the U.S. National Science Foundation. The data sets and supporting documentation from oceanographic research projects are freely available from this database. The data available here are intended solely for scholarly use by the academic and scientific community, with the express understanding that any such use will properly acknowledge the originating Investigator. Anyone wishing to use portions of this data collection in a presentation, report, thesis or publication should contact the originating investigator (PI). It is expected that all customary courtesies and privileges attached to data use will be strictly honored. Use or reproduction of any material herein for any commercial purpose is prohibited without prior written permission from the BCO-DMO. (see the complete citation, usage, and copyright information).

To locate data sets of interest use the navigation links in the column on the left or a link below if you are interested in results from a particular research project.

The database currently includes data contributed from these research initiatives:

Programs and associated projects

Census of Marine Life (CoML)

- Census of Marine Zooplankton-2004-2010 (CMarZ_2004-2010)
- International Indian Ocean Expedition (IIOE)
- Nishida-Pacific-Oithona (Nishida-Oithona)
- ORI-Historical (ORI_Historical)

Climate Research Investment - Ocean Acidification (CRI-OA)

- Horizontal and Vertical Distribution of Thecosome Pteropods in Relation to Carbonate Chemistry in the Northwest Atlantic and Northeast Pacific (Ocean Acidification and Pteropods)

Comparative Analysis of Marine Ecosystem Organization (CAMEO)

- An Integrative Approach to Managing the Dewatering of Estuaries (DewaterEst)
- Building the Foundation in N. California Current Shelf-Slope-Oceanic Ecosystems (CalCurEco)
- CAMEO: Building the Foundation: An End-to-End Modeling Workshop (CAMWkshp)
- Comparative Dynamics of Ecosystem Components from the Northeast Atlantic Shelf and Pacific Coast: New Approaches to Forecasting and Understanding Variability and Structure in Marine Ecosystems (EcoCompDyn)

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List of projects

Atlantic

Search projects

14 records matching >>> **Atlantic** <<<

Project	Acronym	Start	End
Amazon influence on the Atlantic: CarbOn export from Nitrogen fixation by DiAtom Symbioses	ANACONDAS	2010-01	2012-08
Atlantic Meridional Transect programme	AMT		
Atmospheric aerosol deposition rates and chemistry in western Atlantic trade winds	OCB-033	2007-01	2009-12
Bermuda Atlantic Time-series Study	BATS	1988-10	2013-08
Carbon cycling in the North Atlantic from regional to basin scales: Satellite data, in situ observations, and numerical models	OCB-022		
Carbon Dioxide Dynamics in Mode Water of the North Atlantic Ocean	CarboMODE	2007-04	2010-03
Comparative Dynamics of Ecosystem Components from the Northeast Atlantic Shelf and Pacific Coast: New Approaches to Forecasting and Understanding Variability and Structure in Marine Ecosystems	EcoCompDyn	2008-01	
Horizontal and Vertical Distribution of Thecosome Pteropods in Relation to Carbonate Chemistry in the Northwest Atlantic and Northeast Pacific	Ocean Acidification and Pteropods	2010-10	2011-09
North Atlantic Bloom Experiment 2008	NAB 2008	2006-10	2011-09
North Atlantic Spring Bloom 2005	NASB 2005	2004-11	2007-08
Quantification of Trichodesmium spp. vertical and horizontal abundance patterns and nitrogen fixation in the western North Atlantic	Trichodesmium	2009-12	2012-11
Sources of Iron to the EasterN tropical Atlantic	SIRENA	2007-07	2010-08
U.S. GEOTRACES North Atlantic Transect	U.S. GEOTRACES NAT	2010-10	2010-12
U.S. JGOFS North Atlantic Bloom Experiment	NABE	1989-04	1989-07

North Atlantic Bloom Experiment 2008

- Principal investigators:
 - Eric D'Asaro, University of Washington, Applied Physics Laboratory
 - Mary Jane Perry, University of Maine, Darling Marine Center
 - Craig Lee, University of Washington, Applied Physics Laboratory
 - Katja Fennel, Dalhousie University
- Data liaison: Ivona Cetinic, University of Maine
- Complex field sampling program
 - four cruises, floats and glider deployments
 - detailed supporting documentation

Database

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Data Access

- [Geospatial access](#)

Project: North Atlantic Bloom Experiment 2008

Acronym: NAB 2008

Program: Ocean Carbon & Biogeochemistry [OCB]

URL:

Start date: 2006-10

End date: 2011-09

Geolocation: North Atlantic, 60 ° North

► **Description:**

More information about project North Atlantic Bloom Experiment 2008

► **Funding**

▼ **Datasets associated with North Atlantic Bloom Experiment 2008**

Dataset

- Biofloat_48 All Sensor Profiles
- Biofloat_48 CSTAR transmissometer Profiles
- Biofloat_48 CTD Profiles
- Biofloat_48 Hyperspectral Downwelling Plane Irradiance (Ed) Profiles
- Biofloat_48 Hyperspectral Upwelling Plane Radiance (Lu) Profiles
- Biofloat_48 LI-COR sensor PAR profiles
- Biofloat_48 Optode dissolved oxygen sensor Profiles
- Biofloat_48 Satlantic ISUS Nitrate profiles
- Biofloat_48 Seabird dissolved oxygen sensor Profiles
- Biofloat_48 surface GPS position and time data
- Biofloat_48 track
- Biofloat_48 Wetlabs FLNTU chlorophyll sensor Profiles
- Calibration Reports - NAB08
- cruise track
- CTD 1m averaged profiles
- CTD full resolution profiles
- Niskin Bottle Hydrography
- Seaglider Profiles



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Data Access

- [Geospatial access](#)

Use a map to find data

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Search

Deployment quick find:

[Start over](#) [Restore original layout](#)

Available programs

Name	#
CAMEO	0
CoML	100
CRI-OA	0
ETBC	1
FeSynth	15
GoMK - DHOS	7
Historical	11

[Select all](#) [Deselect all](#)

Available projects

Name	#
AESOPS	15
AMT	0
ANACONDAS	1
Anammox Black Sea	3
Ant2006	2
AntarcticASPIRE	1

Include projects not belonging to any programs?

[Select all](#) [Deselect all](#)

Available deployments

Name
A16N_33R0200306_01
AB_63_1
AB_63_2
AB_63_3
AB_63_4A
AB_63_A
AB_64_5

[Select all](#) [Deselect all](#)

Visible deployments

Right-click a row for more options

[Clear all selections](#)

<input type="checkbox"/> <input type="checkbox"/> A16N_33R0200306_01
<input type="checkbox"/> <input type="checkbox"/> AB_63_1
<input type="checkbox"/> <input type="checkbox"/> AB_63_2
<input type="checkbox"/> <input type="checkbox"/> AB_63_3
<input type="checkbox"/> <input type="checkbox"/> AB_63_4A
<input type="checkbox"/> <input type="checkbox"/> AB_63_A
<input type="checkbox"/> <input type="checkbox"/> AB_64_5
<input type="checkbox"/> <input type="checkbox"/> AB_64_6
<input type="checkbox"/> <input type="checkbox"/> AB_64_7

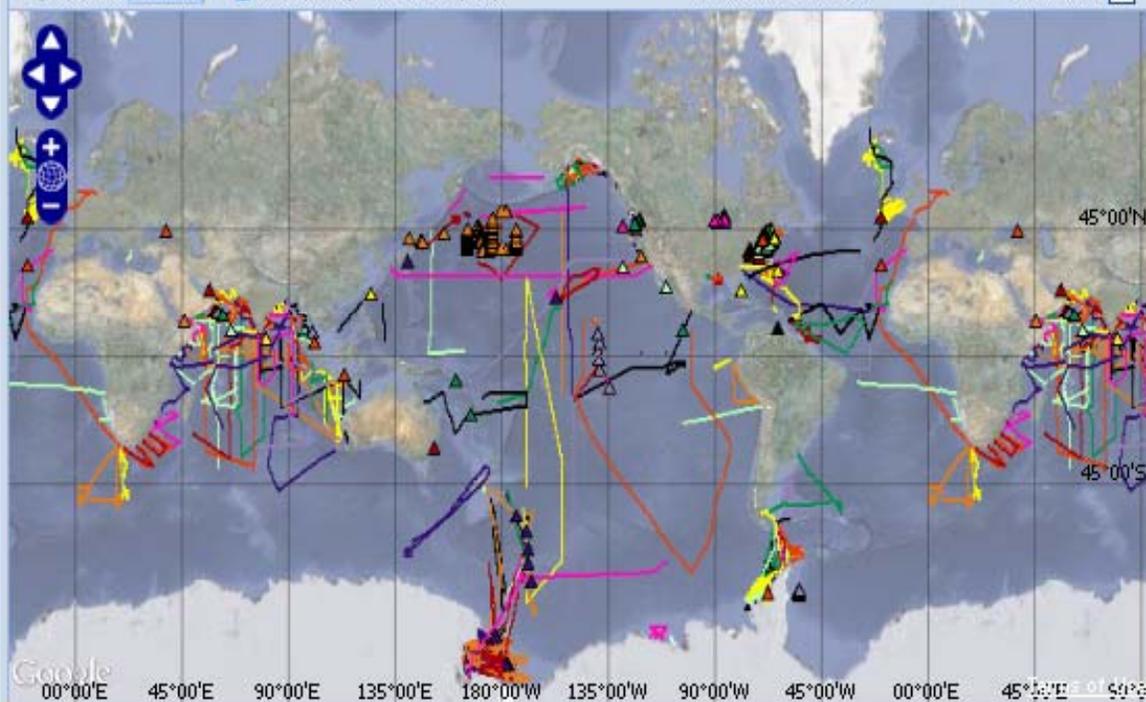
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Map

[Zoom in](#) [Pan](#) [Query map](#) [Clear query](#)

Background opacity: [Show grid?](#)



Datasets

[Available datasets](#) [Mapped datasets](#)

Right-click a row for more options

[Remove all](#)

Dataset	Deployment

<http://bco-dmo.org/>
BCO-DMO
map-based
browse

Always keep datasets?

Search

Deployment quick find: [Start over](#) [Restore original layout](#)

Available programs

Name	#
NACP-OCB Coastal	2
NEC	32
NMFS/NEFSC	381
OCB	35
U.S. CLIVAR	4
U.S. GEOTRACES	5
U.S. GLOBEC	322

Select all Deselect all

Available projects

Name	#
MedFlux	2
NAB 2008	2
OCB-001	0
OCB-002	0
OCB-003	0
OCB-004	0

Include projects not belonging to any programs?

Select all Deselect all

Available deployments

Name
B10-2008
B4-2008
B9-2008
Biofloat_48
KN193-03
SG140
SG141

Select all Deselect all

Visible deployments

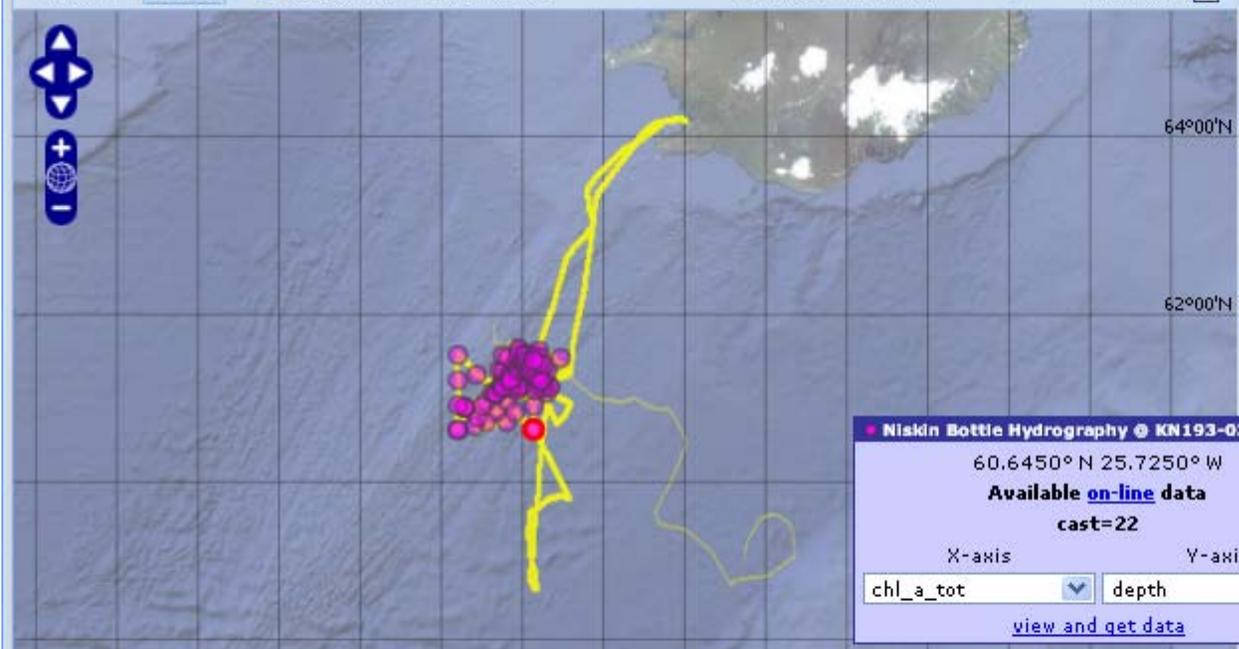
Right-click a row for more options [Clear all selections](#)

<input type="checkbox"/>	<input type="checkbox"/>	Biofloat_48
<input type="checkbox"/>	<input type="checkbox"/>	KN193-03
platform_name R/V Knorr		
deployment_name KN193-03		
start_date 2008-05-01 00:00:00		
end_date 2008-05-22 00:00:00		
location subpolar North Atlantic, Iceland Basin, 60.7° to 61.7° N, 25° to 27.7°		
description A three-week process cruise on the R/V Knorr operated in the vicinity of five autonomous platforms that had been deployed in early April by another vessel. A total of 10 simultaneous float and CTD calibration profiles were taken to calibr more...		

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Map

Zoom in Pan Query map Clear query Background opacity: Show grid?



Niskin Bottle Hydrography KN193-03 [Close](#)

60.6450° N 25.7250° W

Available on-line data

cast=22

X-axis Y-axis

chl_a_tot depth

[view and get data](#)

Datasets

Available datasets Mapped datasets

Right-click a row for more options [Remove all](#)

Dataset	Deployment
Deployment: KN193-03	
<input type="checkbox"/>	Calibration Reports - NAB08 KN193-03
<input type="checkbox"/>	cruise track KN193-03
<input type="checkbox"/>	CTD 1m averaged profiles KN193-03
<input type="checkbox"/>	CTD full resolution profiles KN193-03
<input type="checkbox"/>	Niskin Bottle Hydrography KN193-03

- View full dataset
- View full dataset description
- Group by dataset
- Group by deployment
- Clear grouping

/BCO/NAB08/Biofloat_48_profiles ---- Level 0

[Directory](#) [Documentation](#) [Plotting and Other Operations](#)

[Level 0](#) [Next Level](#) [Flat Listing](#)

```
# version 17 February 2011
# PI: Eric D'Asaro (University of Washington)
#
# Biofloat_48 Lagrangian float data
#
```

data_type	start_date	start_time	end_date	end_time	data_link
Biofloat_48_CTD	20080404	0245	20080525	0731	Biofloat 48 CTD
Biofloat_48_C-Star	20080404	0246	20080525	1606	Biofloat 48 cstar
Biofloat_48_Optode_O2	20080404	0246	20080525	1606	Biofloat 48 optode O2
Biofloat_48_Seabird_O2	20080404	0246	20080525	1606	Biofloat 48 seabird O2
Biofloat_48_FLNTU	20080404	0245	20080525	1606	Biofloat 48 flntu
Biofloat_48_LI-COR	20080404	0648	20080525	1606	Biofloat 48 licor
Biofloat_48_Lu	20080404	0648	20080525	1605	Biofloat 48 lu
Biofloat_48_Ed	20080404	0648	20080525	1606	Biofloat 48 Ed
Biofloat_48_ISUS	20080404	0245	20080525	1603	Biofloat 48 ISUS

<http://bco-dmo.org/data/> Use text-based or map-based browse to access data from the BCO-DMO system

Dataset: Biofloat_48 All Sensor Profiles

[Get Data](#)

Project: North Atlantic Bloom Experiment 2008

BCO-DMO Data Discovery, Access, Export

- data discovery using text-based or map-based browse
- data can be listed or graphed for 'quick-view' assessment of fitness for purpose
- access and subset data sets
- export/download data in a variety of formats
- when using data in a presentation or publication, remember to properly cite the originating investigator

“A scholar’s positive contribution is measured by the sum of the original data that he contributes. Hypotheses come and go but data remain.”

In: Advice to a Young Investigator (Santiago Ramón y Cajal, 1897)



<http://bco-dmo.org/>

Thank you.
Questions?

photo by Chris Linder (WHOI)