

Surface position and time data from Seagliders 140, 141, 142, and 143 in the subpolar North Atlantic and Iceland Basin in 2008 (NAB 2008 project)

Website: <https://www.bco-dmo.org/dataset/3420>

Version: 07 February 2011

Version Date: 2011-02-07

Project

» [North Atlantic Bloom Experiment 2008](#) (NAB 2008)

Program

» [Ocean Carbon and Biogeochemistry](#) (OCB)

Contributors	Affiliation	Role
Lee, Craig M.	University of Washington Applied Physics Laboratory (UW APL)	Principal Investigator
Ceticic, Ivona	University of Maine	Contact
McKee, Theresa	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

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Data Files

File
GliderTracks.csv (Comma Separated Values (.csv), 111.87 KB) <small>MD5:608edc2d6042307b881fad1938c158d1</small>
Primary data file for dataset ID 3420

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Parameters

Parameter	Description	Units
latitude	latitude	degrees
longitude	longitude	degrees
julian_day_yr0	julian day	decimal days since Jan 0 0000
date	date	YYYYMMDD
time	time	HHMM
cruise	cruise identifier	dimensionless

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Instruments

Dataset-specific Instrument Name	Seaglider
Generic Instrument Name	Seaglider
Dataset-specific Description	Seaglider is an autonomous underwater vehicle developed through a collaboration between The Applied Physics Laboratory -University of Washington and the University of Washington School of Oceanography. These small, free-swimming vehicles can gather conductivity-temperature-depth (CTD) data from the ocean for months at a time and transmit it to shore in near-real time via satellite data telemetry. Seagliders make oceanographic measurements traditionally collected by research vessels or moored instruments. They can survey along a transect, profile at a fixed location, and can be commanded to alter their sampling strategies throughout a mission.
Generic Instrument Description	The Seaglider is an autonomous underwater vehicle developed through a collaboration between The Applied Physics Laboratory -University of Washington and the University of Washington School of Oceanography. These small, free-swimming vehicles can gather conductivity-temperature-depth (CTD) data from the ocean for months at a time and transmit it to shore in near-real time via satellite data telemetry. Seagliders make oceanographic measurements traditionally collected by research vessels or moored instruments. They can survey along a transect, profile at a fixed location, and can be commanded to alter their sampling strategies throughout a mission.

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Deployments

SG140

Website	https://www.bco-dmo.org/deployment/58148
Platform	Seaglider 140
Start Date	2008-04-04
End Date	2008-06-28
Description	Starting position: 58.999, -20.507 (according to Seaglider Tracks dataset) Methods & Sampling NAB08 Seaglider 140 was equipped with Garmin 15H-W receiver. NAB08 Seaglider 140 surfaced at irregular intervals, after each completed dive. During the surfacing interval, several GPS fixes were obtained and recorded. Here, we are reporting only the GPS fix taken immediately before dive.

SG141

Website	https://www.bco-dmo.org/deployment/58149
Platform	Seaglider 141
Start Date	2008-04-04
End Date	2008-06-27
Description	Starting position: 59.010, -20.501 (according to Seaglider Tracks dataset) Methods & Sampling NAB08 Seaglider 141 was equipped with Garmin 15H-W receiver. NAB08 Seaglider 141 surfaced at irregular intervals, after each completed dive. During the surfacing interval, several GPS fixes were obtained and recorded. Here, we are reporting only the GPS fix taken immediately before dive.

SG142

Website	https://www.bco-dmo.org/deployment/58150
Platform	Seaglider 142
Start Date	2008-04-04
End Date	2008-06-24
Description	Starting position: 58.994, -20.484 (according to Seaglider Tracks dataset) Methods & Sampling NAB08 Seaglider 142 was equipped with Garmin 15H-W receiver. NAB08 Seaglider 142 surfaced on irregular intervals, after each completed dive. During the surfacing interval, several GPS fixes were obtained and recorded. Here, we are reporting only the GPS fix taken immediately before dive.

SG143

Website	https://www.bco-dmo.org/deployment/58151
Platform	Seaglider 143
Start Date	2008-04-04
End Date	2008-06-03
Description	Starting position: 59.005, -20.511 (according to Seaglider Tracks dataset) Methods & Sampling NAB08 Seaglider 143 was equipped with Garmin 15H-W receiver. NAB08 Seaglider 143 surfaced at irregular intervals, after each completed dive. During the surfacing interval, several GPS fixes were obtained and recorded. Here, we are reporting only the GPS fix taken immediately before dive.

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Project Information

North Atlantic Bloom Experiment 2008 (NAB 2008)

Coverage: North Atlantic, 60 ° North

NAB2008 was a process experiment designed to study an important component of the oceanic carbon system - the North Atlantic spring bloom. The phytoplankton bloom occurring each spring in the North Atlantic, drives the uptake of carbon dioxide and is an important component of the biological pump (Bagniewski et al., 2010). Previous studies in this region have shown the importance of small temporal and spatial scales, i.e. ecosystem patchiness, during the bloom, but were restricted by the limitations of ship-based sampling. Recent advances in autonomous platforms and sensors presented an opportunity to study this important event in a new way. In addition to deployment of a diverse suite of *in situ* sampling devices, NAB2008 was also a test-bed for developing the strategies and knowledge needed to successfully use new methods to drive the next generation of ocean observations.

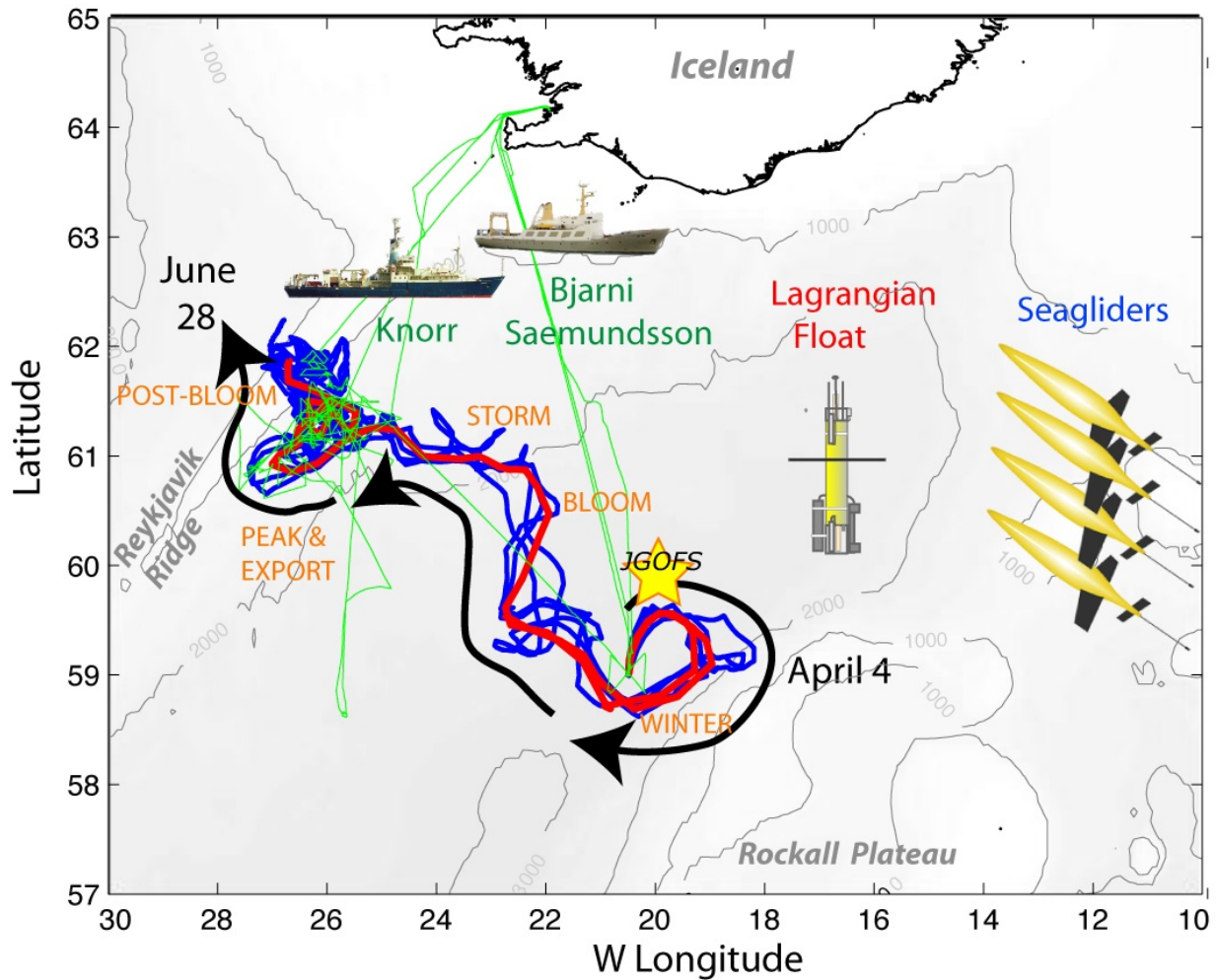
In 2008, a coordinated deployment of 1 float, 4 Seagliders and 2 research vessels sampled the evolution of the North Atlantic spring bloom along and surrounding the nearly Lagrangian path followed by the float. The autonomous measurements were continuous through the experimental period, and included CTD, chlorophyll fluorescence, optical backscatter, and oxygen on all platforms; and nitrate, optical attenuation, and various radiance measurements on the float. Velocities were determined from the vehicle motion, with the float extending to a depth of 230 meters and gliders to 1,000 meters. The autonomous vehicles were deployed, rescued, and recovered on three cruises of the Icelandic vessel Bjarni Saemundsson. A 21-day cruise of the R/V Knorr conducted more detailed measurements during the peak of the bloom in May. The R/V Knorr sampling program included optical profiles, ADCP data and analysis of water samples for nutrients, particulate organic carbon, pigments, micro-plankton composition, complemented by guest investigator analyses. Data from both ships were used to calibrate and validate the autonomous measurements.

References:

Bagniewski, W., Fennel, K., Perry, M. J., and D'Asaro, E. A. (2010) Optimizing models of the North Atlantic spring bloom using physical, chemical and bio-optical observations from a Lagrangian float, *Biogeosciences Discuss.*, 7, pp. 8477-8520, doi:10.5194/bgd-7-8477-2010

[NAB08 preprints](#)

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Program Information

Ocean Carbon and Biogeochemistry (OCB)

Website: <http://us-ocb.org/>

Coverage: Global

The Ocean Carbon and Biogeochemistry (OCB) program focuses on the ocean's role as a component of the global Earth system, bringing together research in geochemistry, ocean physics, and ecology that inform on and advance our understanding of ocean biogeochemistry. The overall program goals are to promote, plan, and coordinate collaborative, multidisciplinary research opportunities within the U.S. research community and with international partners. Important OCB-related activities currently include: the Ocean Carbon and Climate Change (OCCC) and the North American Carbon Program (NACP); U.S. contributions to IMBER, SOLAS, CARBOOCEAN; and numerous U.S. single-investigator and medium-size research projects funded by U.S. federal agencies including NASA, NOAA, and NSF.

The scientific mission of OCB is to study the evolving role of the ocean in the global carbon cycle, in the face of environmental variability and change through studies of marine biogeochemical cycles and associated ecosystems.

The overarching OCB science themes include improved understanding and prediction of: 1) oceanic uptake and release of atmospheric CO₂ and other greenhouse gases and 2) environmental sensitivities of biogeochemical cycles, marine ecosystems, and interactions between the two.

The OCB Research Priorities (updated January 2012) include: ocean acidification; terrestrial/coastal carbon fluxes and exchanges; climate sensitivities of and change in ecosystem structure and associated impacts on biogeochemical cycles; mesopelagic ecological and biogeochemical interactions; benthic-pelagic feedbacks on biogeochemical cycles; ocean carbon uptake and storage; and expanding low-oxygen conditions in the coastal and open oceans.

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-0628107
NSF Division of Ocean Sciences (NSF OCE)	OCE-0628379

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