

# BGC-Argo data management in the US

*Update for BIO-Argo Meeting, 26 September 2016*

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# Since November 2015

Efforts to transfer biogeochemical data to V3.1 B-files have been focused on 3 projects:

1. SOCCOM (Southern Ocean Carbon & Climate Observations & Modeling)
2. Pre-SOCCOM UW-MBARI equivalents
3. Historical UW oxygen floats

Prompt email communications with Catherine and with Mark Ignaszewski have been very helpful in sorting out some minor details with the V3.1 B-file format.

- 1. SOCCOM**
- 2. Pre-SOCCOM UW-MBARI equivalents**

### **Parameters:**

- DOXY, CHLA, pH, NITRATE, CDOM, BBP700, BBP532**

### **What has been done:**

- SOCCOM profile data up until June 2016 are now available at the Argo GDACs (under AOML DAC) in V3.1 D- and BR- files.**

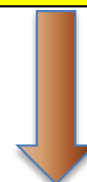
### **What is still to do:**

- Automate transfer of bgc data from active floats to V3.1 netcdf**
- Apply same process to pre-SOCCOM UW-MBARI equiv bgc data**
- 3.1 B Traj files**

# SOCCOM biogeochemical data delivery



**1. Real-time bgc  
profile data on  
SOCCOM website,  
hosted at MBARI**



**2. Production of  
Argo V3.1 BR- files  
at UW**

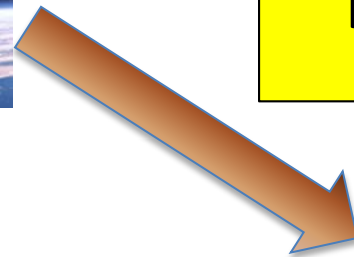


# SOCCOM biogeochemical data delivery



**1. Real-time bgc profile data on SOCCOM website, hosted at MBARI**

**2. Production of Argo V3.1 BR- files at UW/MBARI**

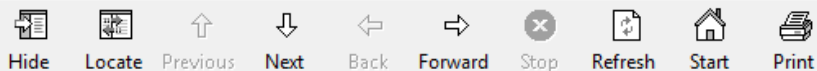


# Real-time adjustment of bgc data ('A' mode)

Daily adjusted data at MBARI "FloatViz" (automated)

Adjusted data in batches to ARGO DACs (manual)

Parameter	Correction
• DOXY	Compare to air pO <sub>2</sub> , WOA
• NITRATE	Compare to 1500 m MLR (Williams 2016)
• pH	Compare to 1500 m MLR (Williams 2016)
• CHLA	CHLA * 0.5 (best estimate recommendation)
• CDOM, BBP	NO ADJUSTMENTS YET

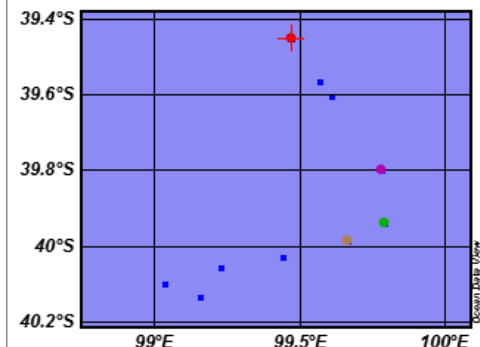
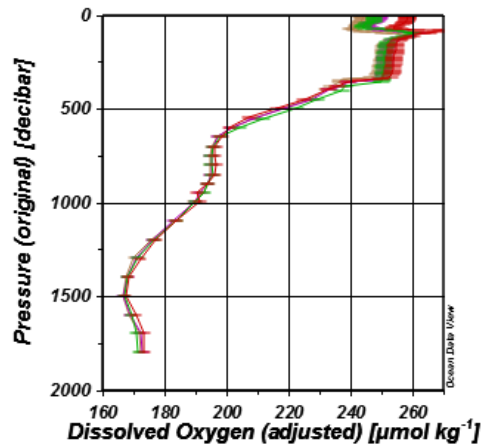
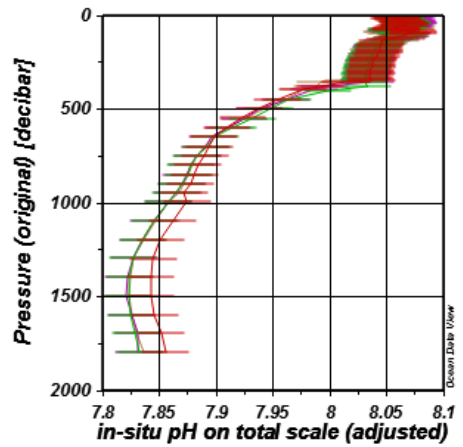
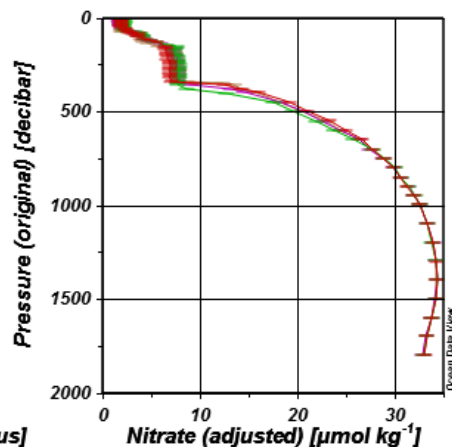
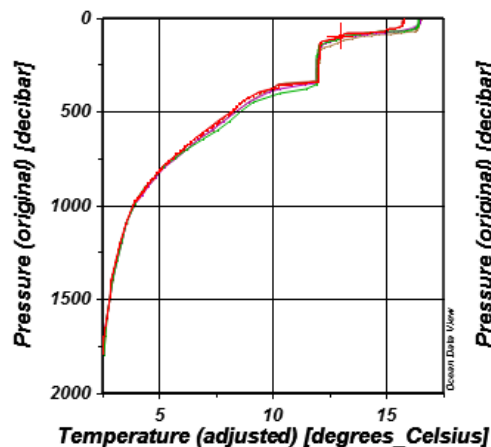
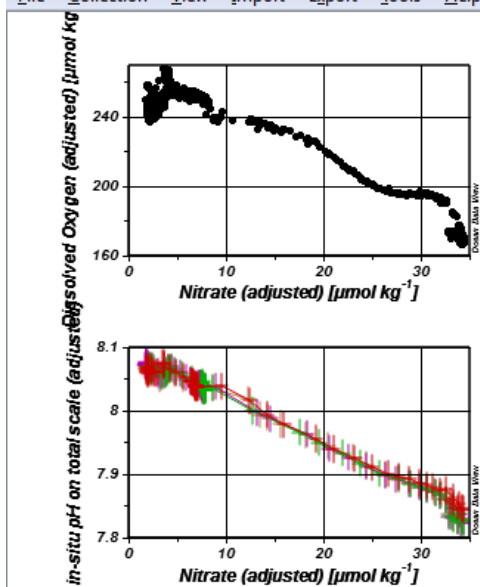


Path /

F(x) PROFILE\_DOXY\_QC = "A A A A A A A A A A"

File Name	Icon	Size	Type
JULD		39.09 K	Dataset
JULD_QC		9.91 K	Dataset
JULD_LOCATION		39.09 K	Dataset
LATITUDE		9.91 K	Dataset
LONGITUDE		39.09 K	Dataset
POSITION_QC		9.91 K	Dataset
POSITIONING_SYSTEM		39.09 K	Dataset
PROFILE_PRES_QC		9.91 K	Dataset
PROFILE_TEMP_QC		9.91 K	Dataset
PROFILE_PRESAL_QC		9.91 K	Dataset
PROFILE_DOXY_QC		9.91 K	Dataset
PROFILE_PH_IN_SITU_TOTAL_QC		9.91 K	Dataset
PROFILE_NITRATE_QC		9.91 K	Dataset
VERTICAL_SAMPLING_SCHEME		9.91 K	Dataset
CONFIG_MISSION_NUMBER		9.91 K	Dataset
PRES		39.09 K	Dataset
PRES_QC		9.91 K	Dataset
PRES_ADJUSTED		39.09 K	Dataset
PRES_ADJUSTED_QC		9.91 K	Dataset
PRES_ADJUSTED_ERROR		39.09 K	Dataset
TEMP		39.09 K	Dataset
TEMP_QC		9.91 K	Dataset
TEMP_ADJUSTED		39.09 K	Dataset
TEMP_ADJUSTED_QC		9.91 K	Dataset
TEMP_ADJUSTED_ERROR		39.09 K	Dataset
PSAL		39.09 K	Dataset
PSAL_QC		9.91 K	Dataset
PSAL_ADJUSTED		39.09 K	Dataset
PSAL_ADJUSTED_QC		9.91 K	Dataset
PSAL_ADJUSTED_ERROR		39.09 K	Dataset
DOXY		39.09 K	Dataset
DOXY_QC		9.91 K	Dataset
DOXY_ADJUSTED		39.09 K	Dataset
DOXY_ADJUSTED_QC		9.91 K	Dataset
NITRATE		39.09 K	Dataset
NITRATE_QC		9.91 K	Dataset





**Station ID: 1**

Date	13 January 2016
Time	07:49:30.000
Pressure ...	[4.3 - 1798.8]
WMO Ins...	846 (Webb Research, Seabird sensor)
Type of F...	APEX
Serial Nu...	7450
Firmware...	042915
Vertical S...	Primary sampling: mixed [deeper t...
Data Stat...	2C
Project N...	UW, SOCCOM, Argo equivalent
Principal ...	STEPHEN RISER, KENNETH JOHNS...
Data Cen...	AO (AOML, USA)
Unique I...	6185_9749_001

**Sample: 50 / 498**

20: Chlorophyll-A (adjus...	9
21: CDOM (original) [ppb]	9
22: CDOM (adjusted) [pp...	9
23: Nitrate (original) [ $\mu\text{m}...$	9
24: Nitrate (adjusted) [ $\mu...$	9
25: Bisulfide (original) [ $\mu...$	9
26: Bisulfide (adjusted) [...]	9
27: in-situ pH on total sc...	9

**Isosurface Values**

Longitude	99.470
Latitude	-39.451
Time [yr]	2016.034
Day of Year	13
Pressure (original) [decibar] @ Pressur...	4.3
Pressure (adjusted) [decibar] @ Pressu...	4.0



### 3. Historical UW oxygen floats

#### Parameter:

- DOXY

#### What has been done:

- Profile data from 117 UW oxygen floats are now in V3.1 D- and BR- files.

#### What is still to do:

- Continue to collaborate with AOML to transfer profile data from remaining 63 UW oxygen floats to V3.1.

**Summary of bgc data transfer as of Sept 2016  
in “batch mode”. Moving to real-time.**

<b>Argo netcdf format</b>	<b>SOCCOM</b>	<b>Pre- SOCCOM</b>	<b>Historical UW oxygen</b>
V3.1	100%		65%
V3.0		100% (DOXY only)	35%

# 100&Change - \$100 million to solve a “problem”

100&Change

https://www.100andchange.org

100&CHANGE

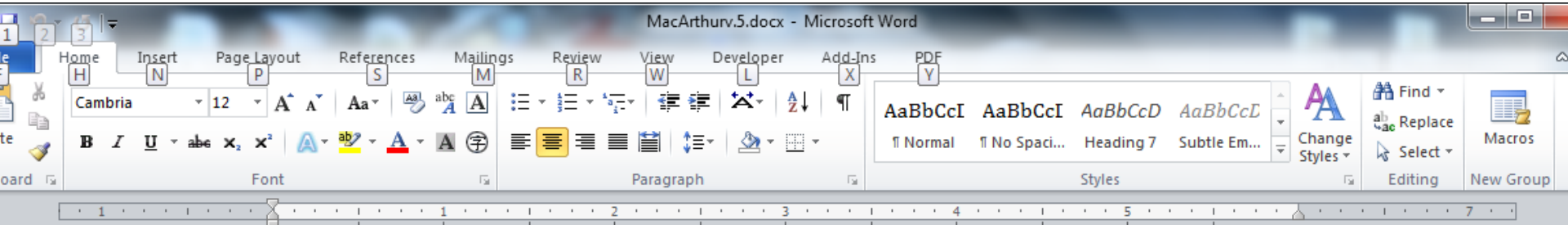
Are You Ready to  
**SOLVE A PROBLEM?**

PLAY VIDEO

LOGIN MENU

SUPPORTED BY  
MacArthur  
Foundation

#100andchange



# Princeton 100& Change Proposal: Ocean Health Initiative

## *A. EXECUTIVE SUMMARY (150 words)*

The ocean provides life-sustaining climate services to all life on land, absorbing over 90% of the heat from global warming and a quarter of human carbon dioxide emissions. But these services come at a price to the ocean and all the creatures that dwell within it. Increasing temperatures bleach coral reefs and decreasing pH and oxygen levels threaten fish that provide 17% of the world's protein. Scientists are racing to understand and prevent irreparable harm to our largest global commons, but the prohibitive cost of obtaining observations has left us largely blind to the changes taking place. Now a new generation of robotic floats equipped with cutting-edge sensor technology will allow us to build the first real-time ocean health early warning system. This system will provide the highest-resolution picture of ocean health ever created, tracking threats like ocean acidification, and providing critical guidance for climate policy and sustainable ocean management.

- \$100 million over 6 years
- 825 floats
  - International coordinating committee
  - Letters from US and European manufacturers indicating willingness to produce floats in Biogeochemical configuration (pH, O<sub>2</sub>, NO<sub>3</sub>, Chl, Backscatter, Irradiance)
- US data center and similar funds to support personnel at other DACs
- Funds for synthesis and analysis projects