OOI Biogeochemical Sensor Data Working Group

- Goal: **To broaden the use of OOI biogeochemical sensor data and increase community capacity to produce analysis-ready data products**
- Working Group formed with 25 members in July 2021
  - 3 day virtual kick-off meeting in July 2021
  - Ongoing collaboration in sub-groups + 5 full working group follow on meetings in 2021 and 2022
  - **3 day in person workshop in June 2022 at WHOI (in conjunction with OCB)**



OOI BGC WG Organisers:
Sophie Clayton (ODU)
Hilary Palevsky (Boston College)
Heather Benway (WHOI)

https://www.us-ocb.org/ooi-dataset-community/

OOI Biogeochemical Sensor Data Workshop: June 16-18, 2022

- 36 participants from 19 institutions across 5 countries, gender balanced
- Graduate students to Senior scientists
- Participants from other ocean observing systems (ONC, PAP-SO)
- Strong representation, participation and support from OOI

OOI Biogeochemical Sensor Data Workshop: June 16-18, 2022

- **Members of Working Group:** Collaborated over past year to draft an OOI BGC “Best Practices and User Guide”
- **14 additional participants:** Reviewed & beta tested prior to workshop

Workshop goals

Best Practices & User Guide (formerly known as the "cookbook"):

Collaborative work sessions where we made progress on reviewing, revising, and planning steps to finalize the document

Cool science using OOI BGC data:

Brainstormed research ideas using OOI BGC data, developed "science vignettes" we could showcase in planned peer-reviewed paper

Community & collaboration:

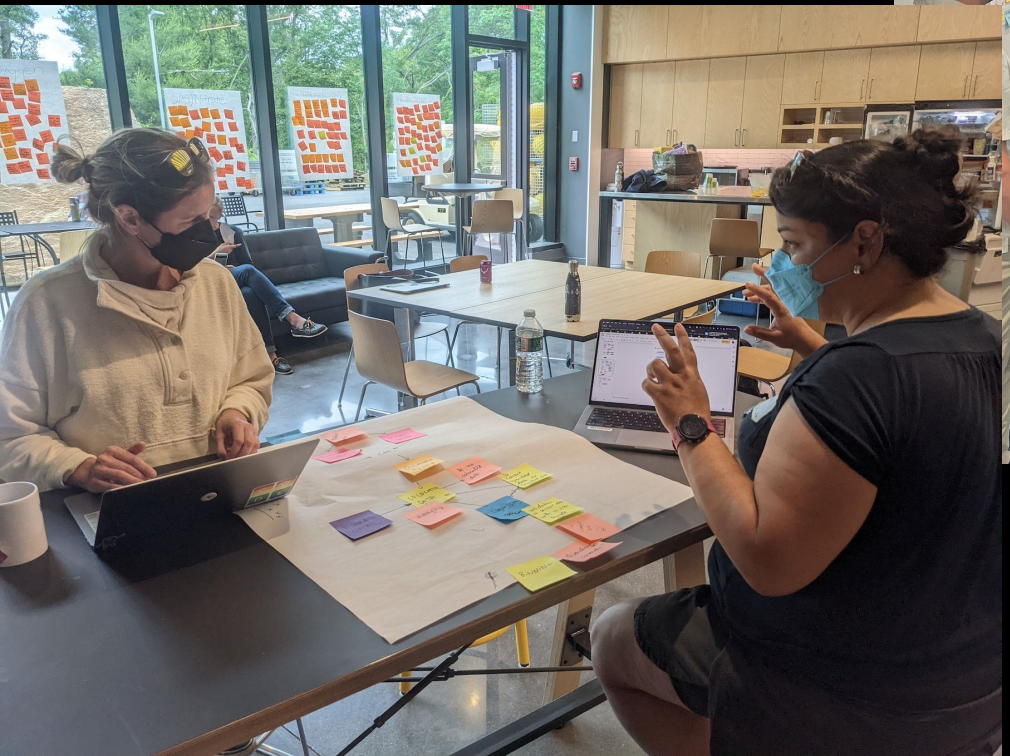
Created and strengthened connections among participants to foster current and future collaboration

Feedback to OOI:

Compiled and synthesized recommendations for OOI to support research using BGC sensor data

Full agenda posted at https://www.us-ocb.org/ooi-dataset-community/

Community building: Brainstorming science ideas using OOI BGC data



OOI Biogeochemical Sensor Data: Best Practices & User Guide

Introduction & Quick Start Guide

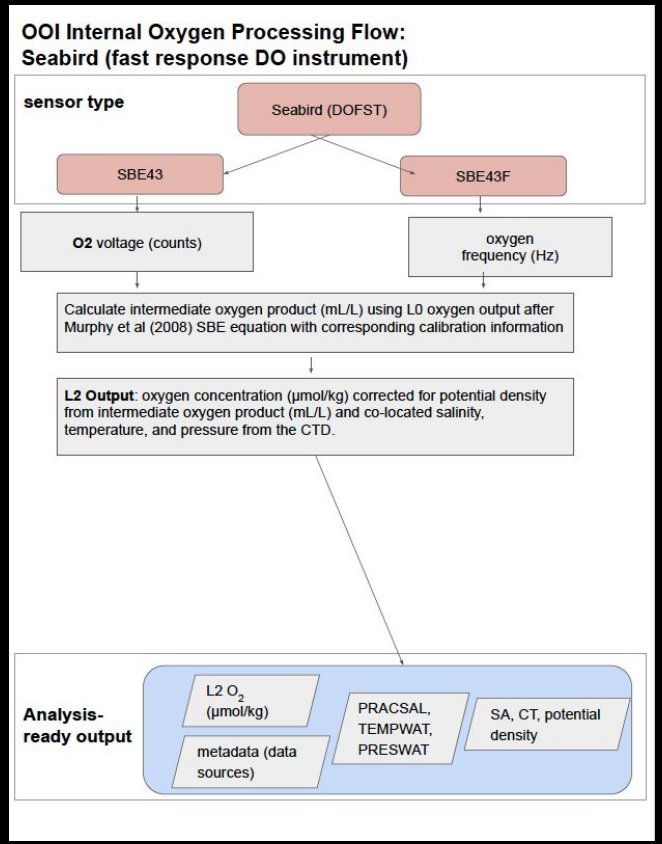
- Introduction to OOI program & OOI BGC data
- OOI data access & availability - pointer to OOI resources
- Overview of internal-to-OOI BGC data processing
- Overview of recommended end user QA/QC for all sensor types

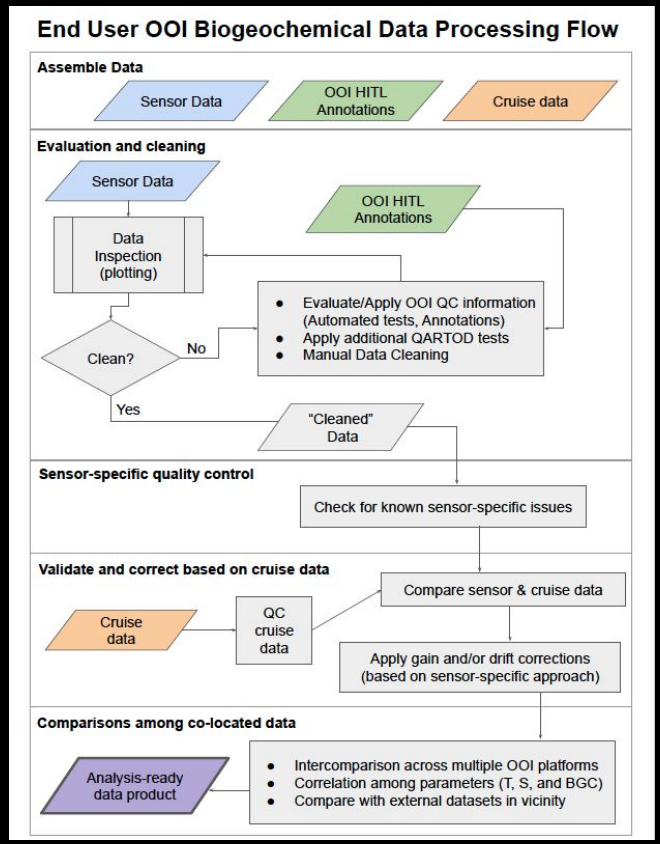
Chapters for 4 groups of BGC variables & sensors:

Oxygen, Nitrate, Carbonate Chemistry, and Bio-Optics

- Introduction to sensors, including manufacturer, model, OOI class-series designators and platforms where deployed
- OOI practices for deployment, calibration, and internal data processing
- Common data quality issues & recommended end user data processing
- Worked example illustrating end user data processing

Preview:
Standardizing content across all sensor chapters





OOI Biogeochemical Sensor Data: Best Practices & User Guide

Path to publication: Ocean Best Practices Repository

- Workshop participants have largely completed planned revisions
- Hilary and Sophie copy-editing and preparing the document for open review
- **Goal:** Ready for community review by Thanksgiving 2022
- **Goal:** Publish in OBP in early 2023, ideally with GOOS endorsement

Also intend to write companion peer-reviewed paper

- Targeting *Frontiers in Marine Science*: Research Topic on Best Practices in Ocean Observing (coordinates with OBPS)
- Goal is to draft paper in 2022-2023 and publish by Fall 2023

OOI Biogeochemical Sensor Data: Best Practices & User Guide

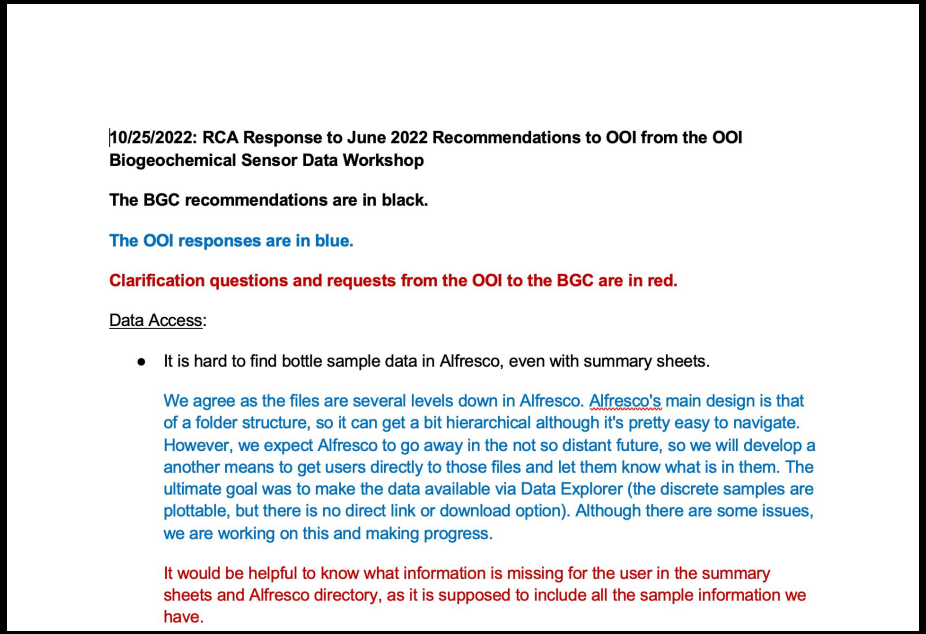
To qualify as “GOOS endorsed” a best practice is expected to:

A. have completed a rigorous community review process whereby comments are publicly invited, adjudicated and actioned by the author
B. originate from a network that is at least “pilot” in all the BioEco or OCG network attributes (when applicable, i.e. originating from a BioEco or OCG network);
C. be approved by the leadership of the relevant network, expert team or other community leaders.
D. is fit for the purpose as defined and fully satisfies the definition of a best practice on the OBPS
E. has been recognised as such through the relevant GOOS body, e.g. GOOS BioEco panel, BGC panel, OOPC or OCG or ETOOFS, after the approval of the relevant network leadership
F. Is available and identifiable within the OBPS repository or will be submitted as soon as endorsement is received.
G. is updated at relevant timeframes

Guidelines from: https://repository.oceanbestpractices.org/handle/11329/1594

Recommendations to OOI (from workshop):

- Recommendations from all participants synthesized and summarized and shared with OOI and OOIFB in August 2022
- OOI responses received October 2022 and shared with OOI BGC WG members



10/25/2022: RCA Response to June 2022 Recommendations to OOI from the OOI Biogeochemical Sensor Data Workshop

The BGC recommendations are in black.

The OOI responses are in blue.

Clarification questions and requests from the OOI to the BGC are in red.

Data Access:

- It is hard to find bottle sample data in Alfresco, even with summary sheets.

  We agree as the files are several levels down in Alfresco. Alfresco's main design is that of a folder structure, so it can get a bit hierarchical although it's pretty easy to navigate. However, we expect Alfresco to go away in the not so distant future, so we will develop a another means to get users directly to those files and let them know what is in them. The ultimate goal was to make the data available via Data Explorer (the discrete samples are plottable, but there is no direct link or download option). Although there are some issues, we are working on this and making progress.

  It would be helpful to know what information is missing for the user in the summary sheets and Alfresco directory, as it is supposed to include all the sample information we have.

Recommendations to OOI - documentation:

- **Need to ensure that OOI BGC BP document remains useful and relevant - OOI updates will need to be communicated properly to users (e.g. linked info pages)**

- **Consider submitting OOI internal best practices to OBPS**
  - Document control numbers, how to cite?
  - OOI collection in OBPS, very few documents and most date from before data started being collected
  - OBPS deals well with version controlled documents and provides a central, searchable repository

Workshop Outcomes & Next Steps

Best Practices & User Guide (formerly known as the “cookbook”):

Will be available for open community review in late 2022
We will seek GOOS endorsement

Science Ideas, Community & collaboration:

Created and strengthened connections among participants to foster current and future collaboration
Companion paper describing process of developing Best Practices and highlighting OOI BGC science questions planned for Fall 2023

Feedback to OOI:

Submitted to (August 2022) and reviewed by OOI (October 2022), will share with OOI BGC WG and coordinate responses as needed.