

# Distributed Biological Observatory (DBO)

*Linking Physics & Biology in the Arctic*

## DBO Data Parameter File and Archiving

Jacqueline M. Grebmeier

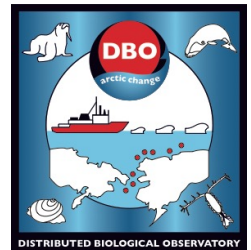
Chesapeake Biological Laboratory

University of Maryland Center for Environmental Science, Solomons, MD, USA

5th DBO Data Workshop  
January 23, 2020  
Seattle, Washington, USA



<http://www.arctic.noaa.gov/dbo/>



# DBO Data Management

## A broad perspective

- Strong international collaboration in a data policy for sharing and access
- International collaboration in data collection in 8 sampling transects
- DBO parameter file profile to inventory data parameters collected on transect lines, upper trophic level surveys, moorings, and satellites
- DBO data effort to facilitate data sharing and synthesis activities
- National and International distributed archive centers can rely on the DBO parameter file for exchange and access

# The 2015 DBO Data Policy

## Distributed Biological Observatory Data Policy

### DBO DATA POLICY AND RELEASE GUIDELINES-Final Version (Feb. 20, 2015)

#### 1. INTRODUCTION

The Distributed Biological Observatory (DBO) was established as an Arctic change detection array along a latitudinal gradient currently extending from the northern Bering Sea to the boundary between the Beaufort and Chukchi seas, near Point Barrow, Alaska. The current DBO regions may be modified or expanded as DBO objectives and requirements change. An international team of scientists and facilities are contributing to this unprecedented set of observations to be made for a decade or more. DBO sampling is focused on transects that cross areas of high productivity, biodiversity and rates of biological change. The Marine Working Group of the International Arctic Science Committee (IASC) has endorsed the DBO concept.

#### 2. DEFINITION OF THE DBO DATA ARCHIVE

The "DBO distributed data archive" is defined as a set of distributed international data centers (e.g. Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Korea Polar Research Institute (KOPRI), NCAR Earth Observing Laboratory (EOL)) with a commitment to long-term data stewardship practices (e.g. discovery and access), bringing together data from DBO sampling efforts and demonstrating the value added results from this sampling and coordinated shared-data approach to the investigation of biological responses in a rapidly changing Arctic marine ecosystem. The DBO EOL data archive (<http://dbo.eol.ucar.edu>) is the designated site for submission of metadata that meet the standard DBO metadata profile (hereafter referred to as the metadata profile) as shown in template form in Appendix A. This template may be linked from other sites that are supporting the DBO effort (e.g., the Alaska Ocean Observing System (AOOS) DBO workspace). The DBO can serve as a framework for international research coordination, specifically as being part of the Arctic Council Circumpolar Biodiversity Monitoring Program (CBMP) and is a recognized task of the pan-Arctic Sustaining Arctic Observing Networks (SAON) program, facilitated by the Arctic Council.

There is interest in making DBO data (defined and listed in Appendix B) available to researchers in a timely manner for analysis, and for the larger community once data are finalized. The principal steps in the flow of data from the researcher's lab to the DBO data archive have been organized into a process that encompasses: (1) the required completion of a standard DBO metadata profile to the DBO EOL archive, (2) the encouraged sharing of data among DBO members in a common, password-protected work space in the short-term (AOOS DBO workspace), and (3) the final submission of data to a national data archive. The DBO data flow requirement for a standard DBO metadata profile submission will be met by use of an interactive form on the DBO EOL website (supported by US National Science Foundation) that has been developed to ensure consistency of information cataloging data collections annually within the DBO data network.

The data centers that make up the "DBO distributed archive" will coordinate their data management activities including developing consistent metadata generation, curation, and

- All participants fill out **DBO parameter file** of what core data type were collected at each station on each DBO line and/or within each DBO regional bounding box
- new CBL DBO project website in 2020 for data parameter templates posting and submission (send completed form to Alynne Bayard ([bayard@umces.edu](mailto:bayard@umces.edu))); produce summary matrix annually; website will also have links to US Arctic Data Center new DBO project site, other national and international DBO partner data archives
- Participants then submit data + metafile to own national archives, with agreement to share results on set DBO transect lines and within bounding boxes
- DBO has an agreed international data policy

## **4 DBO Parameter files**

Template DBO Generic Parameter file\_Mooring.xlsx

Template DBO Generic Parameter file\_Satellite.xlsx

Template DBO Generic Parameter file\_UpperTrophicData.xlsx

Template DBO Generic Parameter file\_Transects.xlsx

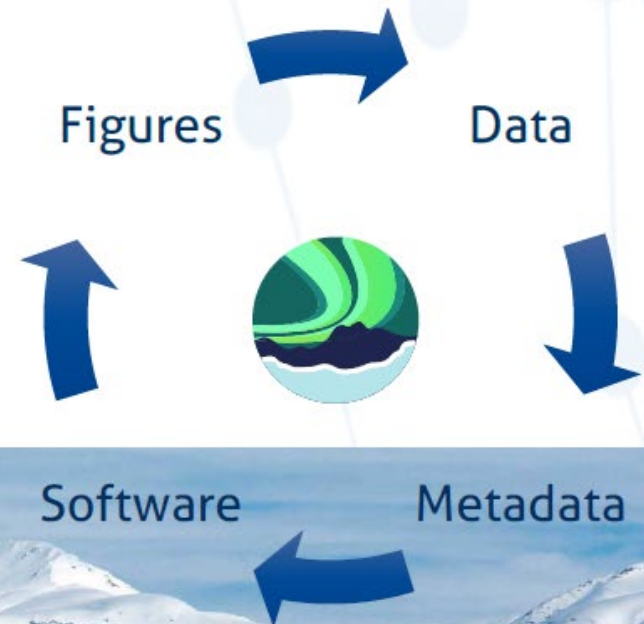


# NSF ARCTIC Data Center

<https://arcticdata.io>

## Overview

- Established in February 2016:  
Primary repository for NSF-funded Arctic research data
- Data storage, curation and data discovery:  
Replication to NCEI planned
- Agile, user-driven improvement
- Support the whole science lifecycle
- Training for a diverse community



**\*5<sup>th</sup> DBO Data Meeting,  
Jan 22-23, 2020 at NOAA  
PMEL**

**Distributed  
Biological  
Observatory**

**DBO  
International  
Data Policy,  
approved by  
partners within  
PAG in 2015**

I Group

Group Id: DBO

4 years, 2 months Contributor since  
April 17, 2014

1,096 contributions

4,505 downloads

1 members

"  Matthew B. Jones  
<http://orcid.org/0000-0003-0...>

- DBO data contributions since April 17, 2014
- 1,096 contributions DBO data
- 4,505 downloads of DBO data

**\*New DBO Project page from US  
Arctic Data Center in progress-will  
go live in winter 2020**

**DBO Data Discovery Portal**  
<https://arcticdata.io/>

DATASETS 11 TO 15 OF 122

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Jacqueline Grebmeier. 2017. **Collaborative Research: The Distributed Biological Observatory (DBO)-A Change Detection Array in the Pacific Arctic Region.** Arctic Data Center. urn:uuid:e09c44d9-96b3-4dac-a340-f757e69f3118.

\$ ([https://arcticdata.io/metacat/d1/mn/v2/object/resource\\_map\\_urn:uuid:e09c44d9-96b3-4dac-a340-f757e69f3118](https://arcticdata.io/metacat/d1/mn/v2/object/resource_map_urn:uuid:e09c44d9-96b3-4dac-a340-f757e69f3118)) 23 % &

Jacqueline Grebmeier. 2017. **The Distributed Biological Observatory (DBO) Conductivity-Temperature-Depth (CTD) data from 2010.** Arctic Data Center. doi:10.18739/A2Q24W.

\$ ([https://arcticdata.io/metacat/d1/mn/v2/object/resource\\_map\\_doi:10.18739/A2Q24W](https://arcticdata.io/metacat/d1/mn/v2/object/resource_map_doi:10.18739/A2Q24W)) 18 % &

Carin Ashjian. 2017. **Distributed Biological Observatory (DBO), Conductivity-Temperature-Depth (CTD) data along DBO5, from 2010 BOWFEST on R/V Annika Marie.** Arctic Data Center. doi:10.18739/A2TV6H.

\$ ([https://arcticdata.io/metacat/d1/mn/v2/object/resource\\_map\\_doi:10.18739/A2TV6H](https://arcticdata.io/metacat/d1/mn/v2/object/resource_map_doi:10.18739/A2TV6H)) 17 % &

Robert Pickart. 2017. **Distributed Biological Observatory (DBO), Conductivity-Temperature-Depth (CTD) data along DBO5, from 2010 ICESCAPE on the USCGC Healy (HLY1001).** Arctic Data Center. doi:10.18739/A2ZJ9S.

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Kevin Arrigo. 2017. **Distributed Biological Observatory (DBO), Conductivity-Temperature-Depth (CTD) data along DBO3, from 2010 ICESCAPE on the USCGC Healy (HLY1001).** Arctic Data Center. doi:10.18739/A23C2N.

\$ ([https://arcticdata.io/metacat/d1/mn/v2/object/resource\\_map\\_doi:10.18739/A23C2N](https://arcticdata.io/metacat/d1/mn/v2/object/resource_map_doi:10.18739/A23C2N)) 17 % &

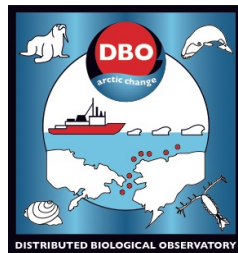
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<https://arcticdata.io/catalog/#profile/CN=DBO,DC=dataone,DC=org>

# Thank you for your attention.

## Questions and comments?

Thank you to all DBO collaborators, field and laboratory technicians over the years for the time series efforts. Financial support for the science provided by the US NSF, NOAA, BOEM, NASA, and ongoing international science partners in the Pacific Arctic Group.



<http://www.arctic.noaa.gov/dbo/>

USA agency support

