

The Biological and Chemical Oceanography Data Management Office Hannah Ake, Mathew Biddle, Nancy Copley, Danie Kinkade, Shannon Rauch, Mak Saito, Adam Shepherd, Peter Wiebe, and Amber York $BC \bigcirc -DM \bigcirc$

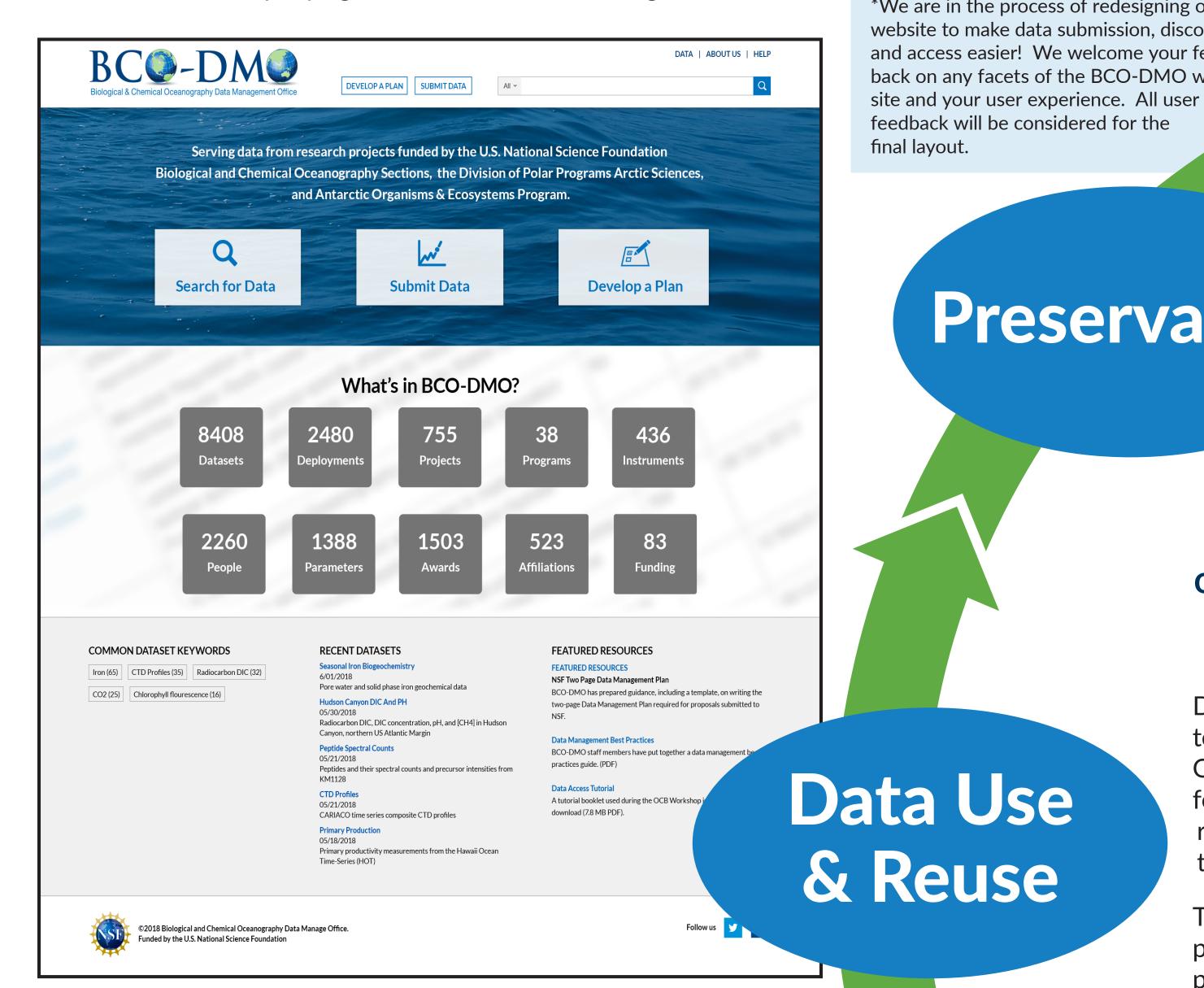
all Woods Hole Oceanographic Institution



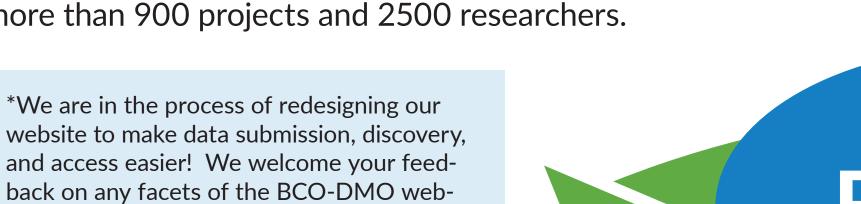
Who We Are, What We Do

The Biological and Chemical Oceanography Data Management Office (BCO-DMO) staff work closely with investigators to serve data and information online from research projects funded by the Biological and Chemical Oceanography Sections, and the Division of Polar Programs Arctic Sciences and Antarctic Organisms & Ecosystems Program at the U.S. National Science Foundation (NSF).

The goal of this partnership is to effectively curate marine ecosystem data and accompanying documentation, facilitating efficient data



discovery and re-use. Throughout the process, BCO-DMO provides services that support specific phases of the data life cycle. The result is a rich database of research-ready data spanning the full range of marine ecosystem related measurements including: in situ observations, experimental and model results, and synthesis products. The BCO-DMO system provides access to more than 9000 data sets from more than 900 projects and 2500 researchers.



Proposal

DMPTool dmptool.org

Proposals submitted to NSF must include a two-page Data Management Plan (DMP).

This supplementary document should describe how the proposal will conform to the

NSF policy for curation and sharing of research results. BCO-DMO has collaborated

to help investigators submit plans that meet the NSF OCE policy requirements.

with the California Digital Library to develop a Data Management Plan (DMP) template

Proposal and Data Management Planning

Aquisition

SELECT DMP TEMPLATE Select one of the funder DMP Templates listed to proceed to the next step. The type of template chosen can affect what information you will need to provide in the following steps. MBLWHOI Library Template National Aeronautics and Space Administration (NASA) National Institute of Justice (DOJ) National Institutes of Health V Mational Science Foundation BCO-DMO NSF OCE: Biological and Chemical Oceanography NSF-AGS: Atmospheric and Geospace Sciences NSF-AST: Astronomical Science

DMP DETAILS

Preservation

The Data Life Cycle

"A scholar's positive contribution is measured by the sum of the original data that he contributes. Hypotheses come and go, but data remain." (Santiago Ramon y Cajal, 1987)

Data, when well-documented and stewarded toward preservation, have the potential to accelerate science and facilitate our understanding of complex natural systems. Open access to existing, high quality research data is rapidly becoming a goal of many federal, academic, and institutional organizations. BCO-DMO is an intermediate data repository funded by NSF to work in partnership with the marine research community to improve discovery and access of marine ecosystem data and information.

The task of curating and providing open access to research data is a collaborative process. This process may be thought of as a life cycle with data passing through various phases. Each phase has its own associated actors and critical activities. Good data management practices are necessary for all phases, from proposal to preservation. As data completes one cycle, it marks a maturity level that allows the data to be available to begin the cycle again in new research endeavors.

BCO-DMO supports all phases of the data life cycle and works closely with investigators through certain phases of the cycle to ensure open access of well-curated project data and information. The result is a rich repository of marine, coastal, and limnological data ready for reuse and reanalysis. This poster describes some of the critical points

> along the data life cycle where BCO-DMO staff engage with researchers. We invite you to think about your project's data life cycle and where BCO-DMO can help provide support for your project output. Contribution

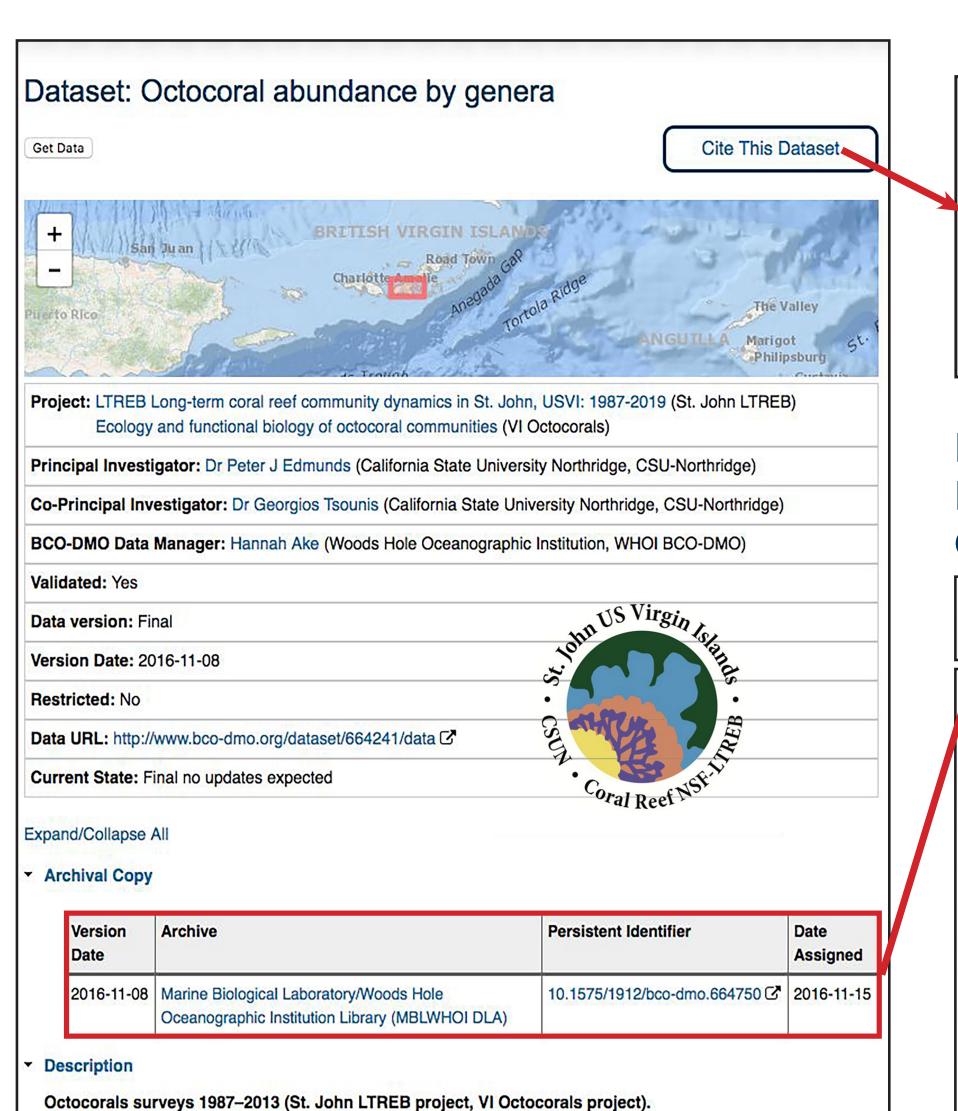
Analysis & Synthesis

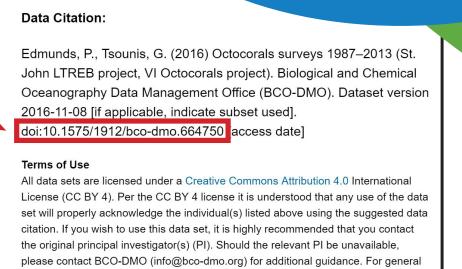
Template Outline Data Policy Compliance Pre-Cruise Planning Description of Data Types * Data and Metadata Formats and Standards * Data Storage and Access During the Project * Mechanisms and Policies for Access, Sharing, Re-Use, and Re-Distribution * Plans for Archiving * Roles and Responsibilities

BCO-DMO NSF OCE: Biological and Chemical Oceanography

Data Publication

Once processed and validated by the contributor, BCO-DMO publishes data and metadata online, fostering data discoverability, access, and reuse. All datasets available at BCO-DMO are licensed under a Creative Commons Attribution 4.0 International license, ensuring that each data contributor will receive proper credit. DOIs are assigned for all submissions, facilitating attribution to authors and contributors. We provide a recommended citation, so that users can properly cite each dataset.

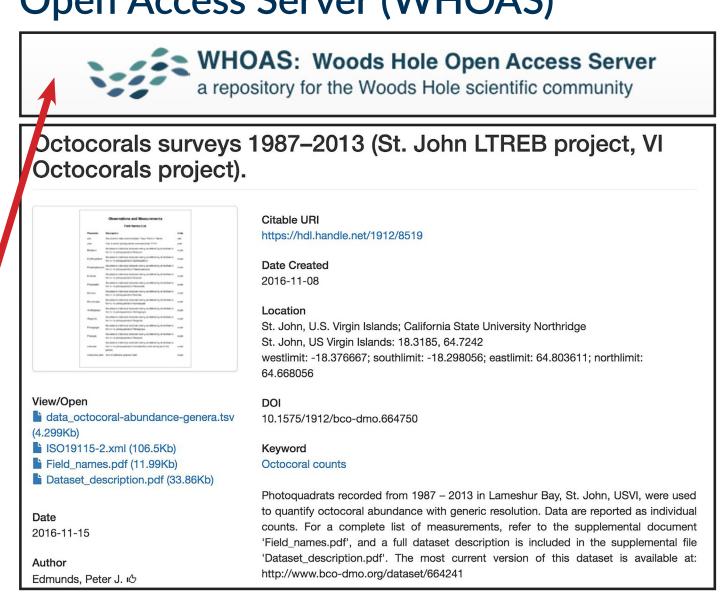




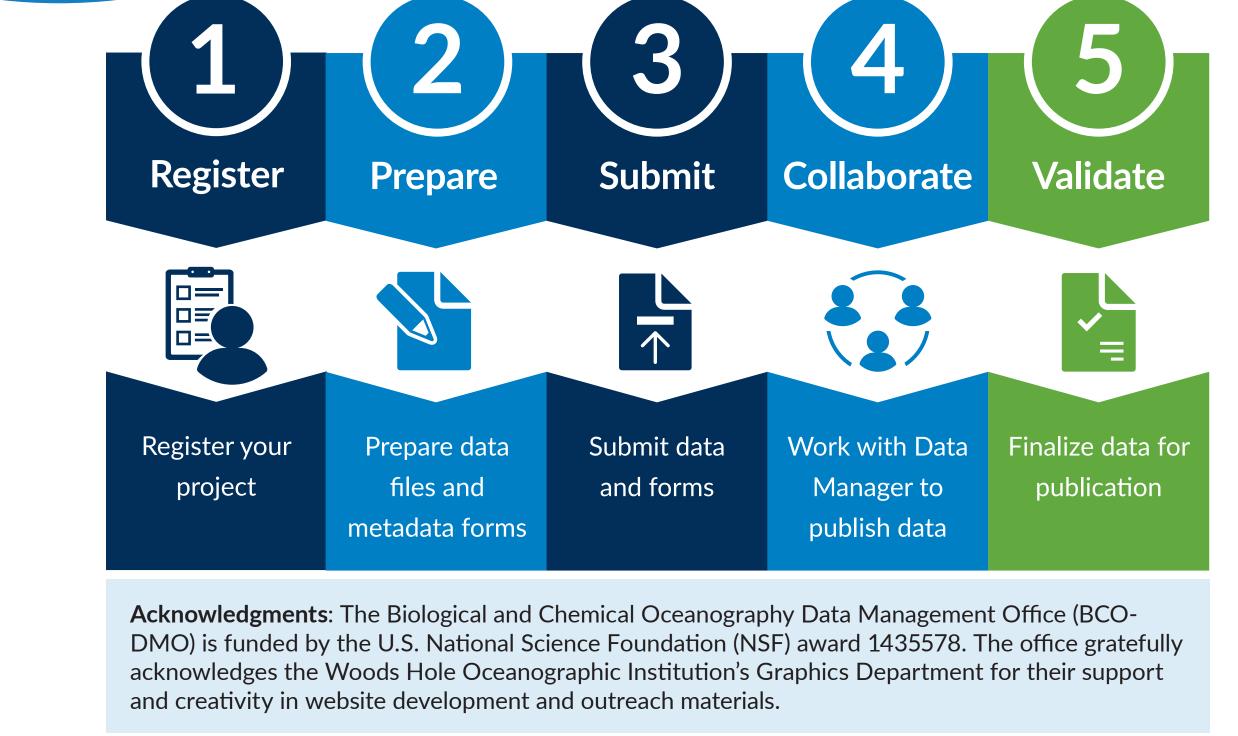
DOIs are minted for archival copies of BCO-DMO datasets at the Woods Hole Open Access Server (WHOAS)

Discovery

& Access



Data Publication



Contributing **Project Output**

1 Register

Complete a Project Metadata Form to provide information about your project at BCO-DMO. Have a copy of the award's NSF Data Management Plan ready to submit as well. Once your information is ready, go to Step 3 'Submit'.

2 Prepare

We accept processed (research ready) data in many formats. Complete a Dataset Metadata Form to provide information about each unique dataset. If data were collected from a research vessel, mooring, glider, or other unique deployment, complete a Deployment Metadata Form.

3 Submit

Email your applicable Metadata Forms and Files to info@bco-dmo.org.

4 Collaborate

A Data Manager will begin the process of making the data available online and may contact you with followup questions or requests for more information.

5 Validate

Once your datasets are online, you'll be asked to review the data and metadata for completeness and accuracy. This validation stage is the final step in the process, and necessary for assignment of DOIs and long-term archival at the appropriate National Data Center (e.g. NCEI).

*NOTE: We strongly encourage you to submit data at least one month in advance of any pressing deadlines (e.g. NSF reports, manuscript publication) to provide adequate data processing time.