BCO-DMO

Biological & Chemical Oceanography Data Management Office

THE BIOLOGICAL AND CHEMICAL OCEANOGRAPHY DATA MANAGEMENT OFFICE

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bco-dmo.org

INTRODUCTION

Oceanographic research is an interdisciplinary field of study that generates and requires access to a wide variety of measurements. In late 2006 the Biological and Chemical Oceanography Sections of the National Science Foundation (NSF) Geosciences Directorate Division of Ocean Sciences (OCE) funded the Biological and Chemical Oceanography Data Management Office (BCO-DMO). In late 2010 additional funding was contributed to support management of research data from the NSF Office of Polar Programs (PLR) Antarctic Organisms & Ecosystems Program (ANT). The BCO-DMO is recognized in the 2011 Division of Ocean Sciences Sample and Data Policy as one of several program-specific data offices that support NSF OCE funded researchers and was accepted in 2013 as an Associate Data Unit of the UNESCO/IOC International Oceanographic Data and Information Exchange.

Efforts at BCO-DMO focus on comprehensive data management activities that span the full data life cycle from "proposal through preservation". The essential data management activities include: (1) working with research project investigators to establish a comprehensive data management plan; (2) registering the project in the BCO-DMO catalog; (3) ensuring reliable backup of data and supporting documentation; (4) providing data access systems that support data discovery, access, display, assessment, integration, and export of data resources; (5) submitting final data sets to the appropriate long-term data archive and (6) formal publication of data sets to provide citable references (Digital Object Identifiers) for use in peer-reviewed literature and to encourage proper citation and attribution of data sets in the future. When combined, these elements comprise the full spectrum of the data life cycle; enabling discovery and accurate re-use and ensuring long-term permanent archive of the data that are an important component of a researcher's legacy.

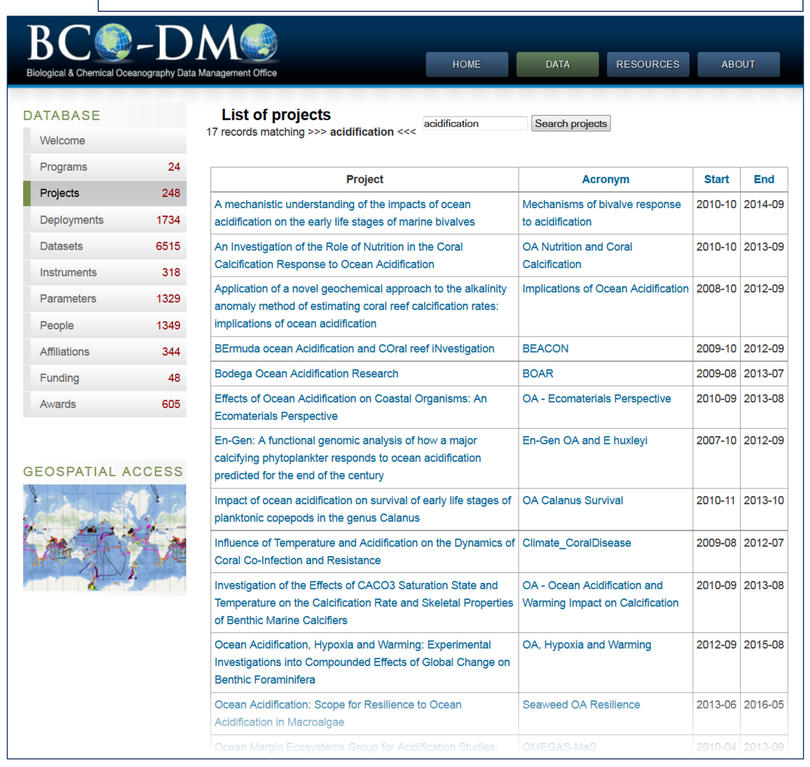
BCO-DMO staff members work in partnership with NSF-funded investigators from large national programs and medium-sized collaborative research projects, as well as researchers from single investigator awards to ensure that data resulting from their respective research projects are archived at the appropriate US National Data Center. Support is provided at no charge to projects funded by OCE Biology or Chemistry or PLR ANT and available to other investigators for a fee. In addition to ensuring final archive of NSF OCE funded research data, efforts undertaken by BCO-DMO data managers foster community building, establishment of trust between collaborative partners, and capacity building through outreach and education efforts.

The BCO-DMO data system accommodates many different types of ocean science data including: *in situ* and experimental biological, chemical, and physical measurements; modeling results and synthesis data products. The system enables reuse of oceanographic data for new research endeavors, supports synthesis and modeling activities, provides "real data" for classroom use, and provides decision-support field data for policy-relevant activities. NSF-funded ocean science researchers in the US have been contributing data from recently funded projects to the BCO-DMO data system, and it has evolved into a rich repository of data from ocean, coastal and Great Lakes research programs.

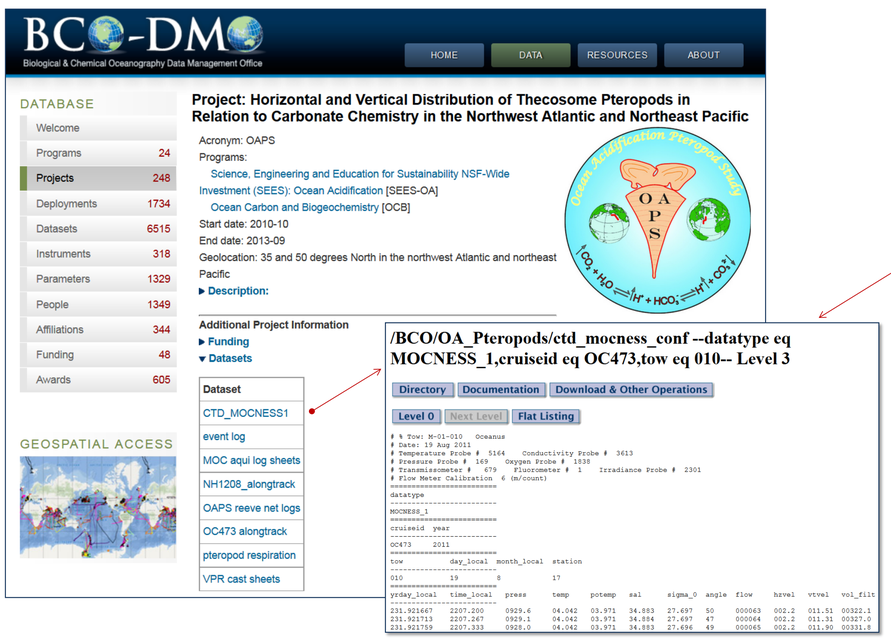
1 Plan for data management from the beginning of the research process.

Identify professional resources: BCO-DMO or similar data management office, a national data center or institutional research library.

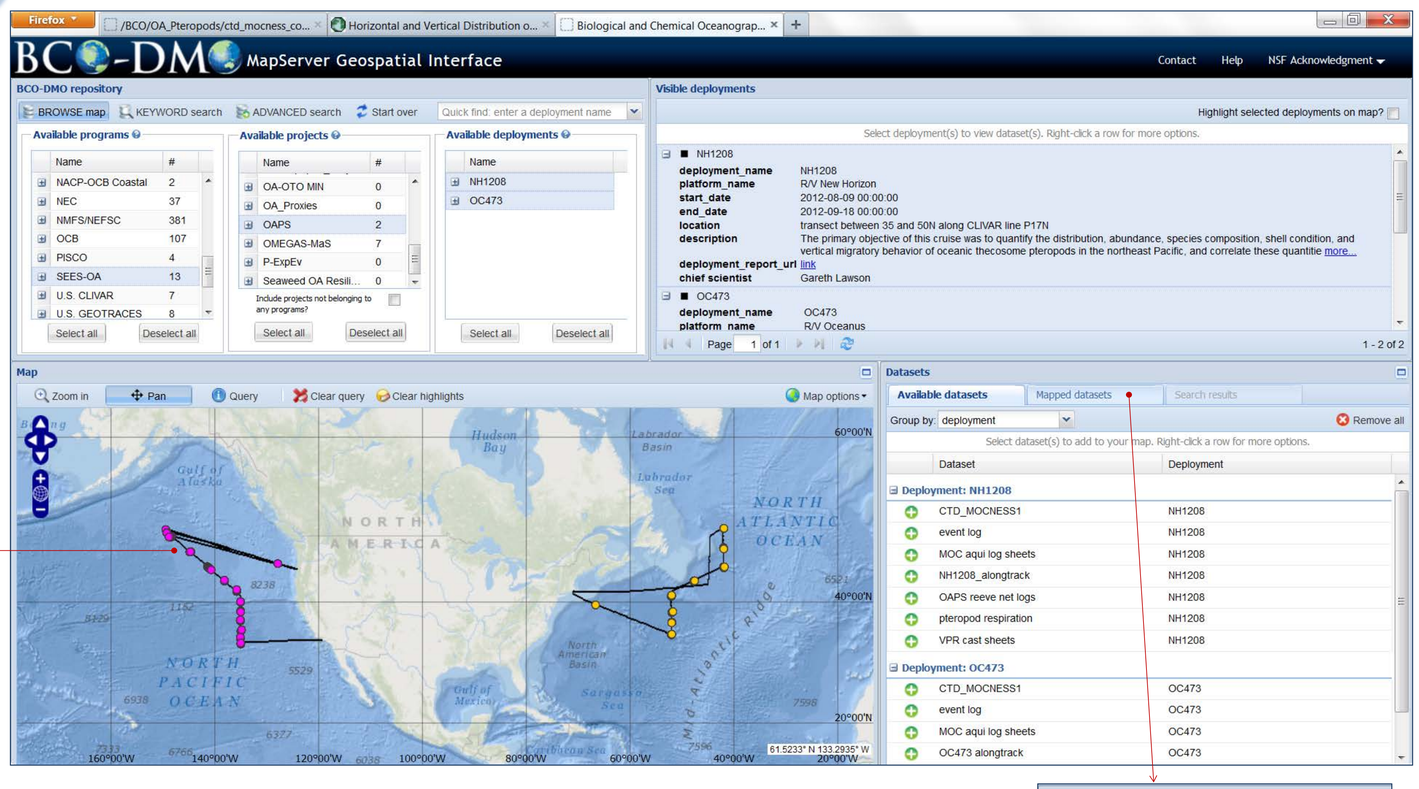
2 Register the funded project in the BCO-DMO data catalog.



3 Submit data and documentation to make results available to research colleagues and others.

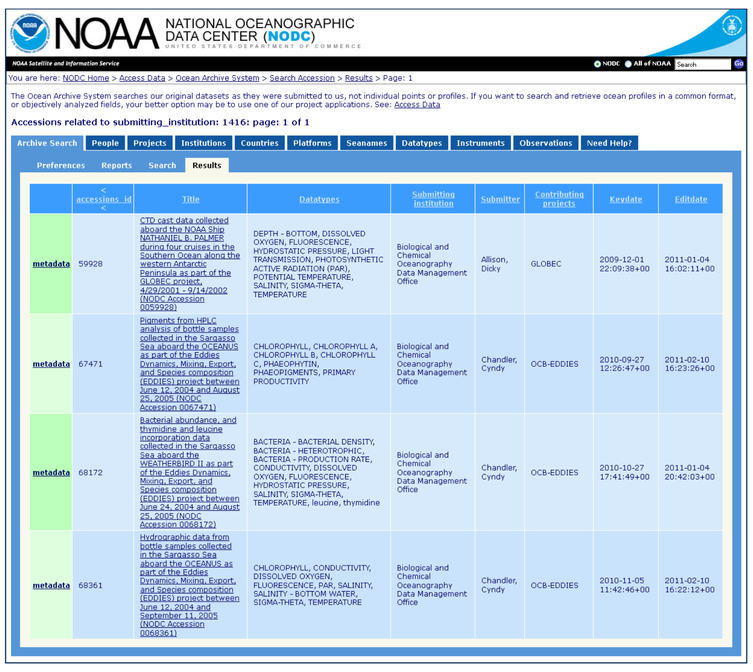


4 Make data freely and widely accessible via effective access tools.



The Ocean Acidification Pteropod Study (OAPS) project results were contributed by project lead investigator, Gareth Lawson (WHOI).

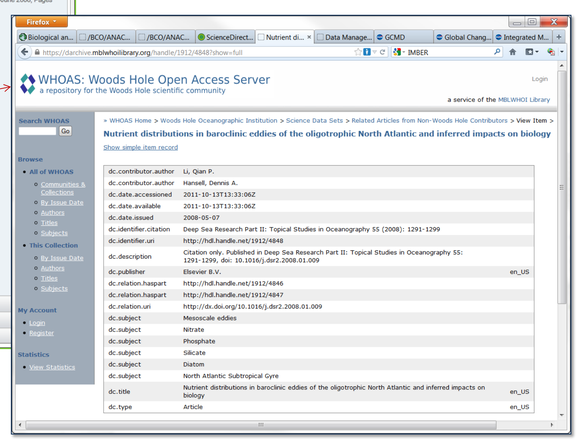
5 Preserve data in a long-term data archive.



6 Publish the data as a citable reference.

WHOAS: Woods Hole Open Access Server
a repository for the Woods Hole scientific community

MBLWHOI LIBRARY



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