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Ocean Sciences Meeting

BCO-DMO: Providing Access to Trace Element and Isotope Data from the Atlantic Ocean and Beyond

BCO-DMO
Biological & Chemical Oceanography Data Management Office

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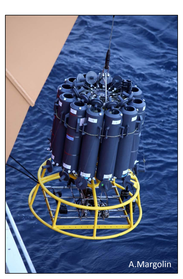
Introduction

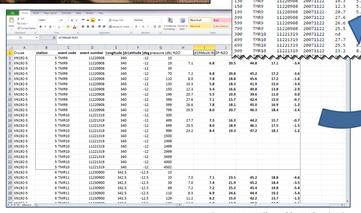
The International GEOTRACES program aims to increase our knowledge of trace elements and isotopes (TEIs) in the oceans, specifically their quantities, distribution, and roles played in biogeochemical cycles. Investigations of TEIs in the ocean are critical for further understanding of marine ecosystem functioning, global carbon and nutrient cycles, and the ocean's response to changing environmental conditions. In 2010 and 2011, U.S. GEOTRACES investigators conducted cruises along two North Atlantic transects. Hydrographic and atmospheric sampling were conducted resulting in numerous datasets of TEI concentrations and associated data from across the North Atlantic. The Biological and Chemical Oceanography Data Management Office (BCO-DMO) is responsible for the management, sharing, and preservation of these datasets and others resulting from investigators funded by the U.S. National Science Foundation (NSF). As the designated U.S. GEOTRACES Data Assembly Center, BCO-DMO works closely with investigators to ensure quality and completeness of both the data and documentation to foster discovery and re-use by potential collaborators. Dataset documentation includes calibration information, quality flag definitions, and descriptions of standard sampling and analysis protocols used. In addition to data from the North Atlantic Transect cruises, data from the Eastern Pacific Zonal Transect cruises, as well as other GEOTRACES-related projects (e.g. CoFeMUG) are freely available from BCO-DMO. Related TEI data from legacy programs, including the U.S. Joint Global Ocean Flux Study (JGOFS), are also available for use by investigators, enabling more complete syntheses.

BCO-DMO Fosters Data Re-Use

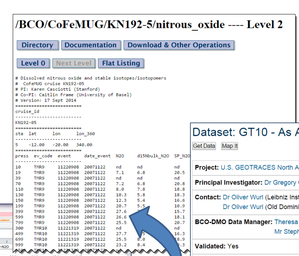
BCO-DMO fosters data re-use by applying community standard vocabularies, performing gross quality control, and preparing robust metadata.

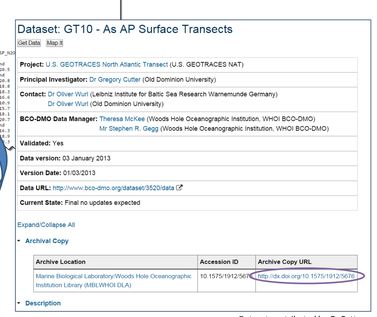

A.Margolin

K. Bowman


Dataset contributed by K. Casciotti

Data from a variety of instruments and in a variety of formats are made **freely** and **openly** available online, with supporting documentation to enable re-use.





Dataset contributed by G. Cutter

Persistent digital object identifier (**DOIs**) can be assigned to datasets to facilitate citation of re-used data.

Discoverability and re-use are enhanced through collaborations and technology.

BCO-DMO utilizes Semantic Web technologies and Linked Open Data to connect our data with complementary information in other relevant repositories. This leads to improved data quality and access. Data are preserved at the appropriate national archives, enabling long-term access and re-use.

Rolling Deck to Repository (R2R) rvdata.us
DataONE
EarthCube
LTER
BODC
Natural Environment Research Council
NCEI National Centers for Environmental Information
TetherlessWorld

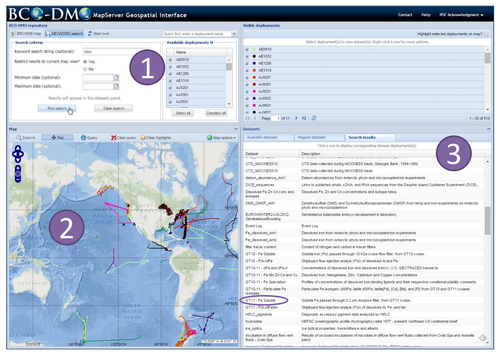
BCO-DMO Fosters Data Discovery

BCO-DMO fosters data discovery by providing multiple ways to search for data. BCO-DMO currently serves more than 100 datasets from U.S. GEOTRACES and GEOTRACES-related cruises.

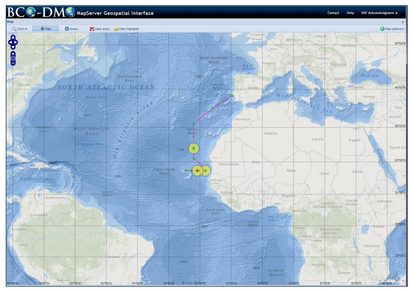
Map-Based Search

Search by parameter or keyword

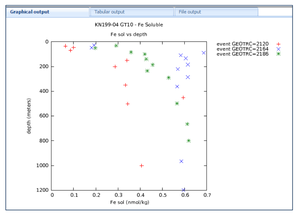
1. Enter search term (e.g. "iron")
2. Map displays cruise tracks where relevant data were collected
3. List of relevant datasets that can be mapped/viewed



Datasets of interest can be mapped and plotted for a quick look at the data. Data and metadata can be easily downloaded from the map interface.



Dataset contributed by E. Boyle

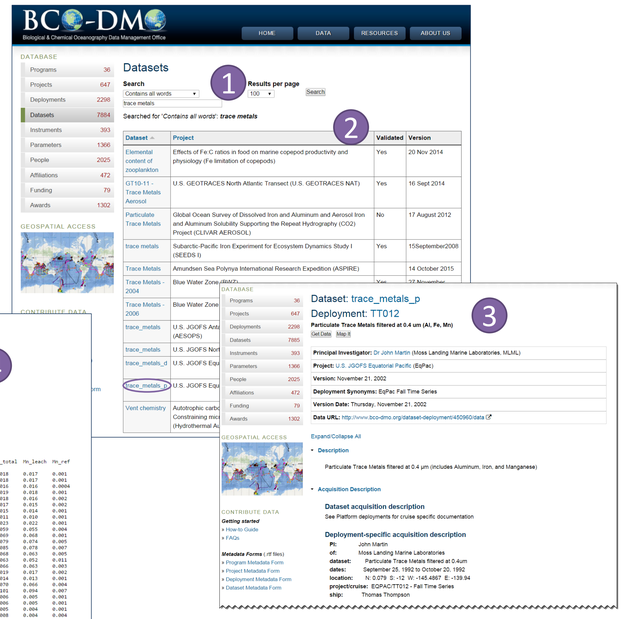


The geospatial interface depicts sampling stations of the Soluble Fe dataset from the GT10 cruise. Soluble Fe data from 3 stations are plotted vs. depth.

Text-Based Search

Search by dataset name, cruise id, person, project, etc.

1. Choose search category and enter search term (e.g. "trace metals")
2. List of relevant datasets is returned
3. Dataset metadata can be viewed
4. Data can be viewed and downloaded



Dataset contributed by J. Martin

GEOTRACES

Reminder: Submit GEOTRACES data by April 1 for inclusion in the 2017 IDP!

website: www.bco-dmo.org
email: info@bco-dmo.org

Acknowledgements:
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