

U.S. GEOTRACES Data Management for the Pacific Basin

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Topics

- About BCO-DMO
- How does BCO-DMO relate to US GEOTRACES?
- Important concepts in data management ...
- US GEOTRACES data management

The Biological and Chemical Oceanography Data Management Office (BCO-DMO)

The BCO-DMO was initially created in late 2006 to serve PIs funded by the US NSF Biological and Chemical Oceanography Sections. It has since been expanded to serve the data management needs of the Ocean Carbon and Biogeochemistry group of researchers in the US. It is a location from which marine biogeochemical and ecological data and information developed in the course of scientific research can easily be disseminated, protected, and stored on short and intermediate time-frames.

The BCO-DMO is located at the Woods Hole Oceanographic Institution.

The Web-site is: <http://www.bco-dmo.org>

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How does BCO-DMO relate to U.S. GEOTRACES?

- BCO-DMO staff are available to provide data management support for investigators funded by the Biological or Chemical Oceanography sections of NSF Ocean Sciences – *at no additional cost to the project*
- this represents a new model for data management – a long-term commitment to data management as opposed to a project specific data management office

Guiding principles of data management

“data stewardship”

- quality assurance of data
- treat all information as data
- data that lack sufficient metadata have limited value beyond the research program for which they were collected
- metadata should include sufficient information to support discovery, value assessment and accurate re-use of data

The data collection generated by a research project is a valuable component of its legacy.

BCO-DMO and US GEOTRACES

- BCO-DMO staff have been funded to work with investigators to manage data generated by research projects funded by NSF OCE Chemistry and Biology
 - Capture and record supporting documentation (metadata)
 - ❖ Best Practice Guidelines Manual available from: <http://bcodmo.org/resources>
 - Make data and metadata available
 - ❖ Restricted or public access as appropriate
 - Ensure final archive of data in appropriate center (NODC, NCDC, NGDC, CDIAC)

BCO-DMO and US GEOTRACES

- Contact BCO-DMO for advice and/or assistance
 - prior to planning workshops
 - during proposal writing (data management plan)
 - after receipt of award letter to update us on science plan
 - prior to cruise ...
 - ❖ cruise metadata forms
 - ❖ discuss data management strategy to support research
 - post-cruise ... data publishing ...
 - ❖ data inventory
 - ❖ cruise documentation
 - ❖ data contributions ... all published in BCO-DMO database

U.S. GEOTRACES Data Management

- based on recommendations from GEOTRACES DMC and SSC
- Pacific Section cruise
 - Chief Scientist
 - ❖ point of contact for BCO-DMO
 - ❖ Cruise report
 - Cruise metadata including participant list
 - ❖ Navigation data (X,Y,T cruise track data)
 - ❖ Scientific sampling event log
 - ❖ final data inventory (list of expected data sets)
 - phased reporting of data sets from cruise
 - ❖ cruise track (nav data) event log and basic hydrography (CTD and Rosette base data); sampling ID log
 - ❖ bathymetry, underway and meteorological data (ADCP ?)
 - ❖ measurements from on board investigator teams

U.S. GEOTRACES Data Management

■ Special project considerations

- definition of a station location having multiple casts and sampling events
- event identification system; event log entries
 - ❖ consider transect sub-section identifiers
- sampling and analytical protocols
- quality assurance and control procedures
- robust metadata records to support shared use of data

Ocean Data Facility (ODF) at SIO

- excellent resource for hydrographic cruise planning
- Recommendation:
include representatives from ODF in pre-cruise planning workshops

GEOTRACES data flow

- US GEOTRACES cruise data contributed to BCO-DMO
- data published at bco-dmo.org
 - access can be restricted to GEOTRACES cruise PIs
- metadata uploaded to GEOTRACES data portal at BODC
- BODC GEOTRACES data portal contact is Ed Mawji

- see the GEOTRACES Data Policy
for required timeline of data submission
<http://www.bodc.ac.uk/geotraces/data/policy/>

GEOTRACES

- GEOTRACES International Programme data are managed by BODC/NERC

<http://www.bodc.ac.uk/projects/international/geotraces/>

- US GEOTRACES data are contributed to the Data Portal at BODC by the US GEOTRACES Data Assembly Center (BCO-DMO)



International >

GEOTRACES

Project overview

BODC's role

Official web site

Data management

Other links

GEOTRACES

GEOTRACES is an international programme that aims to improve our understanding of biogeochemical cycles and large-scale distribution of trace elements and their isotopes (TEIs) in the marine environment. The global field programme will run for at least a decade and will involve cruises in all ocean basins run by a variety of nations.

GEOTRACES is expected to become the largest programme to focus on the chemistry of the oceans and will improve our understanding of past, present and future distributions of TEIs and their relationships to important global processes. To find out more follow these links

- [Project overview](#) — A brief description of the main goals and themes of the programme.
- [BODC role](#) — Our duties as the GEOTRACES International Data Assembly Centre (GDAC).
- [Official web site](#) — View the GEOTRACES web pages.
- [Data management](#) — View the GEOTRACES International Data Assembly Centre web pages. This provides access to the GEOTRACES Data Policy, cruise information, sortable inventories of data and the data itself.
- [Other links](#) — Links to GEOTRACES sites and other relevant areas.



The deployment of a McLane sampler



US GEOTRACES

- US GEOTRACES data management provided by BCO-DMO at no cost to research projects
- <http://bcodmo.org>
- resources
 - Better Practice Guidelines Manual
 - Data Management Plan
 - How to contribute data
- US data are contributed to the GEOTRACES data portal at BODC

Important links

- BCO-DMO (US GEOTRACES Data Assembly Center)
<http://bco-dmo.org/>
- GEOTRACES data portal at BODC
<http://www.bodc.ac.uk/projects/international/geotraces/>
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