BCO-DMO & GEOLINK: IMPROVING DATA DISCOVERY AND ACCESS FOR OCEAN SCIENCE RESEARCH RESULTS

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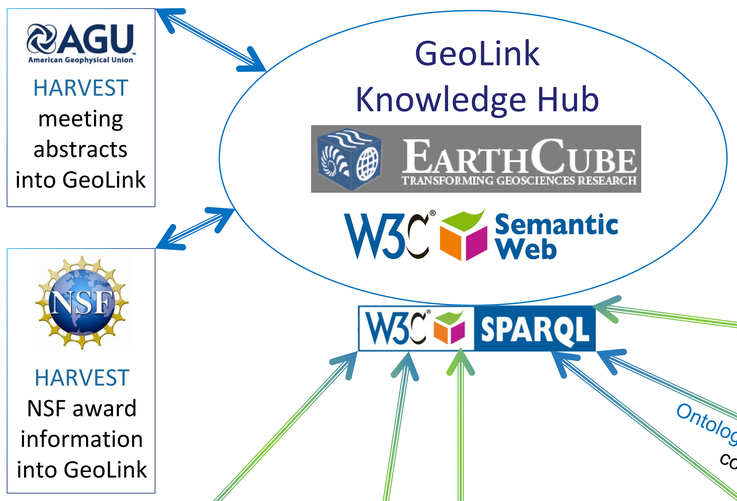
BCO-DMO

Biological & Chemical Oceanography Data Management Office

bco-dmo.org

Established in late 2006, the Biological and Chemical Oceanography Office (BCO-DMO) is funded by the NSF Division of Ocean Sciences (OCE) and Division of Polar Programs (PLR) to improve data availability and discovery, and to enable subsequent data integration and accurate use. BCO-DMO staff members work closely with investigators to ensure that data generated during research funded by those NSF programs are documented, stored, freely available, and protected long after the research is completed. Efforts at BCO-DMO focus on comprehensive data management activities that span the full data life cycle from "proposal through preservation", ultimately ensuring that data resulting from marine research projects are archived at the appropriate US National Data Center.

In addition to managing and serving ocean biogeochemistry and marine ecosystem data from NSF OCE and PLR funded research projects, BCO-DMO staff members work on several synergistic research projects, the results of which will enhance BCO-DMO data discoverability and access. BCO-DMO is one of the partners in GeoLink, an NSF funded EarthCube Building Block project. Using extensible GeoLink methodologies BCO-DMO has integrated Semantic Web technologies, including Linked Open Data and Ontology Design Patterns, to enhance the BCO-DMO data system architecture and to connect BCO-DMO managed data with complementary data and resources in other repositories. BCO-DMO endeavors to be one node in a comprehensive cyberinfrastructure for Geoscience that enables open, transparent, interoperable access to data and information.



EarthCube GeoLink Building Block

A growing collection of standard protocols, formats, and vocabularies, often characterized as the Semantic Web ("Web of Data"), offers a powerful approach for publishing research data online. The GeoLink project is a collaboration between experts from the geosciences, computer science, and library science. GeoLink has developed extensible Semantic Web components that support discovery and reuse of data and knowledge. GeoLink's participating repositories publish content from field expeditions, laboratory analyses, journal publications, conference presentations, theses/reports, and funding awards that span scientific studies from marine geology to marine ecosystems to paleoclimate.cyberinfrastructure. GeoLInk offers a scalable approach that enables open, transparent, interoperable access to data and information. One of the essential elements of GeoLink is the use of **Ontology Design Patterns** to harmonize content from all sources, including GeoLink partners and other repositories of interest to the NSF geoscience research community.