BCO-DMO Test Dataset 2

Website: https://www.bco-dmo.org/dataset/944667
Data Type: Cruise Results
Version: 1
Version Date: 2024-11-27

Project
» BCO-DMO: Accelerating Scientific Discovery through Adaptive Data Management (BCO-DMO)

Contributors	Affiliation	Role
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Abstract
Dataset created for DPV troubleshooting

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BCO-DMO Processing Description

currently being processed

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Parameters

Parameter	Description	Units
Cast	Cast identifier	unitless
Lat_Start	Latitude at start of cast	degrees North
Lon_Start	Longitude at start of cast (negative values = West)	degrees East
ISO_DateTime_Start_UTC	Date and time (UTC) at start of cast	unitless
altM	Altimeter	meters (m)
avgsvCM	Average Sound Velocity (Chen-Millero)	meters per second (m/s)

nbf	Number of bottles fired	unitless
c0S_m	Conductivity	Siemens per meter (S/m)
c1S_m	Conductivity, 2	Siemens per meter (S/m)
depSM	Depth (salt water)	meters (m)
dz_dtM	Descent rate	meters per second (m/s)
latitude	Latitude	degrees North
longitude	Longitude (negative values = West)	degrees East
sbeox0Mg_L	Oxygen, SBE 43	milligrams per liter (mg/L)
sbeox1Mg_L	Oxygen, SBE 43, 2	milligrams per liter (mg/L)
prDM	Pressure, Digiquartz	decibars (db)
sal00	Salinity, Practical	PSU
svCM	Sound Velocity (Chen-Millero)	meters per second (m/s)
t090C	Temperature (ITS-90)	degrees Celsius
t190C	Temperature, 2 (ITS-90)	degrees Celsius
timeS	Time elapsed	seconds
CStarTr0	Beam Transmission, WET Labs C-Star	percent (%)
ph	pH	unitless (pH scale)
flECO_AFL	Fluorescence, WET Labs ECO-AFL/FL	milligrams per cubic meter (mg/m^3)
sal11	Salinity, Practical, 2	PSU

secS_priS	Salinity, Practical, Difference, 2 - 1	PSU
pumps	Pump Status	unitless
flag	Flag	unitless

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Project Information

BCO-DMO: Accelerating Scientific Discovery through Adaptive Data Management (BCO-DMO)

NSF Award Abstract:

Scientific research is intrinsically reliant upon the creation, management, analysis, synthesis, and interpretation of data. Once generated, data are essential to demonstrating the veracity and reproducibility of scientific results, and existing data hold great potential to accelerate scientific discovery through reuse. The Biological and Chemical Oceanography and Data Management Office (BCO-DMO) was created in 2006 to assemble, curate, and publicly serve all data and related products resulting from grants funded by the NSF core programs for Biological and Chemical Oceanography, and Office of Polar Programs. BCO-DMO provides limnological and marine chemical, biological, and physical data inventories from several large and intermediate-sized programs, as well as single-investigator projects to support cross-disciplinary collaboration to address pressing environmental questions, problems, and challenges that are exacerbated with the increasing pace of climate change. BCO-DMO is committed to data management capacity building efforts, improving data literacy and increasing science engagement in data management topics through education, training, and outreach. The project collaborates with academic institutions and teachers, where the BCO-DMO database is leveraged for oceanographic curricula, and engages in targeted training of informatics students, cross-pollinating their knowledge with geoscience domain data management.

BCO-DMO's goal is to facilitate the integration of its diverse datasets to enable researchers to achieve a deeper understanding of ocean ecological and biogeochemical systems. As a domain repository, BCO-DMO adds value and improves interoperability of data to support activities such as synthesis and modeling, and the reuse of oceanographic data for new research. Open access to the BCO-DMO database lowers barriers to allow economically challenged countries to gain access to research quality data for field decision support, policy-relevant issues, and educational purposes. The project takes an active role in the exchange of knowledge at national and international geoscience and informatics meetings and workshops, where standards development and adoption occur. BCO-DMO also participates in the development and use of open-source, standards-based technologies that enable interoperable data systems to exchange data and information that will foster next-generation research in all disciplines. While continuing to perform its core mission of data management, BCO-DMO will reconstitute its data infrastructure to mobilize a new adaptive data management strategy for addressing the evolutionary change coinciding with the big data revolution. Leveraging data semantics BCO-DMO will construct a knowledge graph for sustainably operating an adaptive data repository. This infrastructure will support dataset-level and repository-level metrics, an improved data submission experience and new data and metadata access capabilities. Through declarative workflows, the processing of contributed data will increase in efficiency, and result in actionable provenance records for complete transparency of data curation practices. Taking a holistic perspective on education, outreach and community engagement, formalized programs will be developed to promote data reuse and interest in oceanographic science.

This award reflects NSF's statutory mission and has been deemed worthy of support through evaluation using the Foundation's intellectual merit and broader impacts review criteria.

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1924618

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