

The Distributed Biological Observatory: Linking Physics to Biology in the Pacific Arctic Region

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APPENDIX 1

TABLE S1. The IARPC DBO collaboration team benefitted from strong support from a number of U.S. agencies and academic partners. An abbreviated listing of contributions is provided below, accompanied by web links to sources of additional information. See Table S2 for an acronyms list related to this table.

Agency	Contribution
NOAA OAR:	Coordination of international contributions to the DBO, via the PAG, and contributions to DBO sampling during the RUSALCA program, which was the only program to sample in the Russian Exclusive Economic Zone http://www.arctic.noaa.gov/rusalca/ .
NMFS:	Chair of the IARPC DBO CT, and contributions to DBO sampling during various multidisciplinary research programs in the northern Bering and Chukchi Seas, e.g. BASIS: http://www.afsc.noaa.gov/abl/ mesa/ mesa_basis.php and Arctic Eis: https://web.sfos.uaf.edu/wordpress/arcticeis/
NOS:	Opportunistic contributions to DBO sampling via NOAA ship <i>Fairweather</i> and coordination of the Arctic Marine Biodiversity Observing Network (AMBON). AMBON is co-supported by BOEM through the National Oceanographic Partnership Program (NOPP) and by industry partner Royal Dutch Shell. http://ambon-us.org/
NSF AON:	Conduct standardized sampling in all five DBO regions, 2012–17, http://arctic.cbl.umces.edu/ . Also provides contributions to DBO sampling from other AON-supported projects, various NSF-research platforms, and the provision of a physical oceanographic data portal at WHOI.
UCAR:	Provision of a DBO Data Agreement and Data Archive at the University Corporation for Atmospheric Research (UCAR), Earth Observing Laboratory (EOL) https://www.eol.ucar.edu/field_projects/dbo .
Academic partners:	Contributions to DBO sampling and data analysis and participation in data workshops were principally supported via research grants to at least 12 academic institutions (Fig. 2).
NASA:	The development of DBO-focused satellite visualizations products as part of the Cryosphere Science Research Portal http://neptune.gsfc.nasa.gov/csb/index.php?section=270 . NASA also contributed to DBO sampling during the 2010 ICESCAPE program http://www.nasa.gov/topics/earth/features/icescape2010.html .
BOEM Alaska Environmental Studies Program:	Contributions to DBO sampling, via support of research projects conducted by NOAA OAR and NMFS, in the Chukchi and Beaufort Seas (e.g. CHAOZ, ARCWEST), and via awards to numerous academic partners in support of studies such as ANIMIDA, cANIMIDA, ANIMIDA III, COMIDA, Hanna Shoal, AMBON. The DBO 2nd Data Workshop final report is available at https://www.pmel.noaa.gov/dbo/workshop-products or on the BOEM Alaska Region Environmental Studies page at http://www.boem.gov/About-BOEM/BOEM-Regions/Alaska-Region/Environment/Environmental-Studies/Index.aspx .
AOOS:	Provision of web-based assets mapping and a password-protected DBO Data Workspace for the DBO IARPC Team. AOOS also provides link to the IOOS, including with both national (17 federal agencies) and global (GOOS) outreach. AOOS also provides partial support for long-term biophysical mooring (UAF) in the NE Chukchi Sea. The potential exists for future support for moorings in the northern Bering and Beaufort Seas as ‘anchors’ to DBO transect lines.
NPRB:	Supports the long-term biophysical mooring activities of UAF in the NE Chukchi Sea. There is also potential for future contributions to sampling in DBO Chukchi Sea regions via the Arctic Program http://www.nprb.org/arctic-program .

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TABLE S2. List of acronyms used in Table S1.

Acronym	Definition
AMBON	Arctic Marine Biodiversity Observing Network
ANIMIDA	Arctic Nearshore Impact Monitoring in Development Area
AON	Arctic Observing Network
AOOS	Alaska Ocean Observing System
Arctic Eis	Arctic Ecosystem Integrated Study
ARCWEST	Arctic Whale Ecology Study
BASIS	Bering-Aleutian Salmon International Survey
BOEM	Bureau of Ocean Energy Management
C2O2	Coastal Community Ocean Observers
CAFF	Conservation of Arctic Flora and Fauna
CHAOZ	Chukchi Acoustic, Oceanography and Zooplankton Study
COMIDA	Chukchi Sea Offshore Monitoring in Drilling Area
CT	Collaboration Team
DBO	Distributed Biological Observatory
EOL	Earth Observing Laboratory
GOOS	Global Ocean Observing System
IARPC	Interagency Arctic Research Policy Committee
ICESCAPE	Impacts of Climate on the Ecosystems and Chemistry of the Arctic Pacific Environment
IOOS	Integrated Ocean Observing System
MARES	Marine Arctic Ecosystem Study
NASA	National Aeronautics and Space Administration
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOPP	National Oceanographic Partnership Program
NOS	National Ocean Service
NPRB	North Pacific Research Board
NSF	National Science Foundation
OAR	Oceanic and Atmospheric Research
RUSALCA	Russian-American Long-term Census of the Arctic
UAF	University of Alaska Fairbanks
UCAR	University Corporation for Atmospheric Research
WHOI	Woods Hole Oceanographic Institution