Plan Overview

A Data Management Plan created using DMPTool

Title: Late Season Productivity, Carbon, and Nutrient Dynamics in a Changing Arctic

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Late Season Productivity, Carbon, and Nutrient Dynamics in a Changing Arctic

Types of data

Preservation of all data, samples, physical collections and other supporting materials needed for long-term earth science research and education is required of all EAR-supported researchers.

Our project will yield extensive data sets of water chemistry as well as a large number of water/filter samples. Underway and hydrographic cast data include salinity, temperature, location, water depth, optical properties collected by sensors (e.g. chlorophyll fluorescence, CDOM, beam-attenuation). Analyses of waters samples will yield data on dissolved gases (O_2, Ar, CO_2), dissolved nutrients, dissolved inorganic carbon, total alkalinity, particulate and dissolved organic carbon, stable carbon isotopes and pigments. All water/filter samples will be given an ISGN number for tracking. All compositional data will be new and will be collected in spreadsheets.

Data and metadata standards

Data archives must include easily accessible information about data holdings, including quality assessments, supporting ancillary information, and guidance and aids for locating and obtaining data.

Metadata will include date/time of collection, location (latitude, longitude, water depth) and description (e.g., type sample). The metadata will allow users to identify the location and collection history of each sample and provide the tools to map them.

Policies for access and sharing

It is the responsibility of researchers and organizations to make results, data, derived data products, and collections available to the research community in a timely manner and at a reasonable cost. In the interest of full and open access, data should be provided at the lowest possible cost to researchers and educators. This cost should, as a first principle, be no more than the marginal cost of filling a specific user request. Data may be made available for secondary use through submission to a national data center, publication in a widely available scientific journal, book or website, through the institutional archives that are standard for a particular discipline (e.g. IRIS for seismological data, UNAVCO for GP data), or through other EAR-specified repositories. Data inventories should be published or entered into a public database periodically and when there is a significant change in type, location or frequency of such observations. Principal Investigators working in coordinated programs may establish (in consultation with other funding agencies and NSF) more stringent data submission procedures.

Data collected will be archived using the archival services provided by the Oregon State University Libraries. The OSU Libraries Research Data Services group is housed within the Center for Digital Scholarship and Services and provides guidance and support for all aspects of the data lifecycle, from planning data management strategy through preserving data at the conclusion of the project. Services are free of charge, and if funded we will partner with OSU Research Data services to archive our data and make it publically accessible before the end of the award or two years after collection, whichever comes first.

We plan to use OSU's digital repository (or "institutional repository") ScholarsArchive@OSU (SA@OSU) as a suitable archive and sharing mechanism for data. All items deposited into SA@OSU receive a persistent identifier (DOI or ARK), are freely available to anyone, and are full-text searchable, making them discoverable through Google, Google Scholar and other large search engines. We will work closely with OSU Research Data services to insure this process includes appropriate documentation and requirments for data integrity. Regarding the latter, we will follow the recommendations of the OSU Research Data services group and archive the final version of the datasets using open, non-proprietary formats such as text-based formats (e.g., ASCII), HDF and NetCDF) and multimedia formats such as JPEG 2000, MNG and PNG.

In addition, final data products from this project will be published in peer-reviewed scientific papers by the PIs, associated researchers, and the students involved with this project. Preliminary results will be presented at relevant national and international meetings as posters and/or talks. Data will be distributed to a variety of national databases including, the Advance Cooperative Arctic Data and Information Service (ACADIS) gateway (http://www.aoncadis.org/home.htm) to archive and preserve hydrographic and water sample data. ACADIS is being used primarily as repository for components of the Arctic Observing Network (AON), including physical, chemical and biological water column data that is highly complementary to the activities proposed here. However, non AON investigators are encouraged to submit their results for archival in ACADIS and we plan to do so if funded.

We also will share our data and results with the Distributed Biological Observatory (DBO) Program (http://www.arctic.noaa.gov/dbo/) and work closely with the DBO Data Subcommittees to insure timely and accurate data sharing. If funded we will plan to attend DBO workshops to present and discuss our results with the Arctic research community. In addition, the PIs will work with the Biological and Chemical Oceanography Data Management Office (BCO-DMO) (http://bco-dmo.org) staff to effectively archive water column data using this facility.

We foresee the use of these data by a variety of polar researchers and stakeholders interested in Arctic change. Instructions for appropriate citation (e.g., principal investigator's names, NSF project number, etc.) will be included in the metadata and documentatioin sections of the data archivals.

Policies and provisions for re-use, re-distribution

For those programs in which selected principle investigators have initial periods of exclusive data use, data should be made openly available as soon as possible, but no later than two (2) years after the data were collected. This period may be extended under exceptional circumstances, but only by agreement between the Principal Investigator and the National Science Foundation. For continuing observations or for long-term (multi-year) projects, data are to be made public annually.

We will follow NSF-EAR guidelines and will make data openly available as soon as possible, but no later than two (2) years after the data were collected or before the end of the award, whichever comes first. The PIs retain the right to use the datasets before opening them to wider use. We do not envision any other permission restrictions p[alced on the data once it becomes public.

Plans for archiving and preservation of access

Remember - Data may be made available for secondary use through submission to a national data center, publication in a widely available scientific journal, book or website, through the institutional archives that are standard for a particular discipline (e.g. IRIS for seismological data, UNAVCO for GP data), or through other EAR-specified repositories.

Data collected will be archived using the archival services provided by the Oregon State University Libraries. The OSU Libraries Research Data Services group is housed within the Center for Digital Scholarship and Services and provides guidance and support for all aspects of the data lifecycle, from planning data management strategy through preserving data at the conclusion of the project. Services are free of charge, and if funded we will partner with OSU Research Data services to archive our data and make it publically accessible before the end of the award or two years after collection, whichever comes first. Details of the procedures to archive and preseve access of our data through OSU Research Data Services are given in the Policies for access and sharing section above.

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