

Plan Overview

A Data Management Plan created using DMPTool

Title: Florida Reef Tract NCC and NCP 2009-2010

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Florida Reef Tract NCC and NCP 2009-2010

Data Policy Compliance

Identify any published data policies with which the project will comply, including the NSF OCE Data and Sample Policy as well as other policies that may be relevant if the project is part of a large coordinated research program (e.g. GEOTRACES).

The project investigators will comply with the data management and dissemination policies described in the *NSF Award and Administration Guide* (AAG, Chapter VI.D.4) and the *NSF Division of Ocean Sciences Sample and Data Policy*.

Pre-Cruise Planning

If the proposed project involves a research cruise, describe the cruise plans. (Skip this section if it is not relevant to your proposal.) Consider the following questions: (1) How will pre-cruise planning be coordinated? (e.g. email, teleconference, workshop) (2) What types of sampling instruments will be deployed on the cruise? (3) How will the cruise event log be recorded? (e.g. the Rolling Deck to Repository (R2R) event logger application, an Excel spreadsheet, or paper logs) (4) Will you prepare a cruise report?

Question not answered.

Description of Data Types

Provide a description of the types of data to be produced during the project. Identify the types of data, samples, physical collections, software, derived models, curriculum materials, and other materials to be produced in the course of the project. Include a description of the location of collection, collection methods and instruments, expected dates or duration of collection. If you will be using existing datasets, state this and include how you will obtain them.

It may be useful to group data into four categories:

- (1) Observational (e.g. in-situ, collected in the field). Examples may include: shipboard underway data; mesozooplankton samples collected by a net system; copepod specimens collected, identified, and preserved; hydrographic casts; alongtrack data; remote sensing (e.g. ocean color); acoustic data.

- (2) Experimental (e.g. generated in a lab or under controlled conditions). Examples: controlled carbonate chemistry experiments; DNA and RNA sequences.
- (3) Simulations (e.g. machine-generated). Example: models and their output.
- (4) Derived (e.g. synthesized from existing datasets). Examples: compiled database, products, reports.

If the expected dates or duration of collection are not known at this time (e.g. due to funding schedules or ship availability), it is appropriate to give approximations, the ideal dates/duration, or to state that these details will be determined at a later date.

Data and Metadata Formats and Standards

Identify the formats and standards to be used for data and metadata formatting and content. Where existing standards are absent or deemed inadequate, these formats and contents should be documented along with any proposed solutions or remedies. Consider the following questions: (1) Which file formats will be used to store your data? (2) What type of contextual details (metadata) will you document and how? (3) Are there specific data or metadata standards that you will be adhering to? (4) Will you be using or creating a data dictionary, code list, or glossary? (5) What types of quality control will be used? How will data quality be assessed and flagged?

Usually, data served by BCO-DMO are submitted as comma- or tab-separated ASCII files (.csv, .txt) or as spreadsheet files (.xls, .xlsx). However, BCO-DMO is flexible and willing to work with whatever reasonably organized format the investigator uses.

Data Storage and Access During the Project

Describe how project data will be stored, accessed, and shared among project participants during the course of the project. Consider the following: (1) How will data be shared among project participants during the data collection and analysis phases? (e.g. web page, shared network drive) (2) How/where will data be stored and backed-up? (3) If data volumes will be significant, what is the estimated total file size?

The investigators will store project data (including spreadsheets, ASCII files, images, and PDFs of scanned logs) on laboratory computers that are backed up by the University's central IT organization. The Principal Investigator (PI) has also established an account with the San Diego Super Computer's enterprise class Cloud Service for data storage and sharing among project investigators. Personal computers in all laboratories are backed up daily using Apple Time Machine

to an onsite external hard drive, and weekly to an offsite hard drive.

Mechanisms and Policies for Access, Sharing, Re-Use, and Re-Distribution

Describe mechanisms for data access and sharing, and describe any related policies and provisions for re-use, re-distribution, and the production of derivatives. Include provisions for appropriate protections of privacy, confidentiality, security, intellectual property, or other rights or requirements. Consider the following: (1) When will data be made publicly available and how? Identify the data repositories you plan to use to make data available. (2) Are the data sensitive in nature (e.g. endangered species concerns, potential patentability)? If so, is public access inappropriate and how will access be provided? (e.g. formal consent agreements, restricted access) (3) Will any permission restrictions (such as an embargo period) need to be placed on the data? If so, what are the reasons and what is the duration of the embargo? (4) Who holds intellectual property rights to the data and how might this affect data access? (5) Who is likely to be interested in re-using the data? What are the foreseeable re-uses of the data?

Immediately after completion of the research cruise, underway data and metadata will be submitted to the Rolling Deck to Repository (R2R) project. DNA sequences will be deposited in the National Center for Biotechnology Information (NCBI) database GenBank upon submission of manuscripts. GenBank accession numbers will be provided to the Biological and Chemical Oceanography Data Management Office (BCO-DMO) in an Excel spreadsheet or .CSV file and metadata will be provided using the BCO-DMO Dataset Metadata submission form. Data sets produced by the science party will be made available through the BCO-DMO data system within two-years from the date of collection. The project investigators will work with BCO-DMO data managers to make project data available online in compliance with the NSF OCE Sample and Data Policy. Data, samples, and other information collected under this project can be made publically available without restriction once submitted to the public repositories.

Data produced by this project may be of interest to chemical and biological oceanographers, and climate scientists interested in the role of biogeochemistry in the global climate system. We will adhere to and promote the standards, policies, and provisions for data and metadata submission, access, re-use, distribution, and ownership as prescribed by the BCO-DMO Terms of Use (<http://www.bco-dmo.org/terms-use>).

Plans for Archiving

Describe the plans for long-term archiving of data, samples, and other research products,

and for preservation of access to them. Consider the following: (1) What is your long-term strategy for maintaining, curating, and archiving the data? (2) What archive(s) have you identified as a place to deposit data and other research products?

R2R will ensure that the original underway measurements are archived permanently at NODC and/or NGDC as appropriate. BCO-DMO will also ensure that project data are submitted to the appropriate national data archive. The PI will work with R2R and BCO-DMO to ensure data are archived appropriately and that proper and complete documentation are archived along with the data.

Roles and Responsibilities

Describe the roles and responsibilities of all parties with respect to the management of the data. Consider the following: (1) If there are multiple investigators involved, what are the data management responsibilities of each person? (2) Who will be the lead or primary person responsible for ultimately ensuring compliance with the Data Management Plan?

Each PI will be responsible for sharing his/her subset of data among the project participants in a timely fashion. J. Doe will be responsible for collecting and analyzing the zooplankton sampling data. P. Smith will oversee the molecular biology work and will submit the resulting sequences to the National Center for Biotechnology Information's (NCBI) GenBank database. The Lead PI, R. Jones, will coordinate the overall data management and sharing process and will submit the project data, including GenBank accession numbers, and metadata to the Biological and Chemical Oceanography Data Management Office (BCO-DMO) who will be responsible for forwarding these data and metadata to the appropriate national archive.
