Data Management Plan

Data Policy Compliance

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*.

Description of Data Types

The project will produce several observational and experimental datasets, described in the list below. Observational field data will be collected during Year 1 to describe seasonal patterns prior to and during experiments in Years 1 and 2.

Observational Datasets:

1. Tide pool attributes: Data will include tide height, perimeter, volume, water surface area, and bottom surface area. File type: Excel file convertet to .csv. Repository: BCO-DMO.

2. Tide pool nutrient and oxygen fluxes: Data will include measurements of NH_4^+, NO_3^-, NO_2, PO_4^{3-}, and O_2. File type: Excel file converted to .csv. Repository: BCO-DMO.

3. Macroscopic diversity and abundance: We will survey tide pools for diversity and abundance (cover, count) of sessile and mobile invertebrates and macrophytes. File type: Excel file converted to .csv. Repository: BCO-DMO.

4. Microbial diversity and abundance: We will sample the substratum of tide pools for diversity and abundance of prokaryotic (16S rRNA) and eukaryotic (18S rRNA) components of the microphytobenthos. We will also estimate periphyton photosynthetic biomass and productivity using PAM fluorometry and analyze the periphyton for %C and %N. File type: Excel file converted to .csv. Repository: BCO-DMO.

Experimental Datasets:

1. Tide pool nutrient and oxygen fluxes: These will be collected to evaluate effects of factorial experimental manipulations of herbivores, nutrients, and temperature on nutrient and O_2 fluxes. Data will include measurements of NH_4^+, NO_3^-, NO_2^-, PO_4^{3-}, and O_2, File type: Excel file converted to .csv. Repository: BCO-DMO.

2. Macroscopic diversity and abundance: During our experiments, we will survey tide pools for diversity and abundance (cover, count) of sessile and mobile invertebrates (particularly grazers) and macrophytes to assess effects of experimental manipulations. File type: Excel file converted to .csv. Repository: BCO-DMO.

3. Microbial diversity and abundance: We will sample experimental tiles for diversity and abundance of prokaryotic (16S rRNA) and eukaryotic (18S rRNA) components of the microphytobenthos. We will also estimate periphyton photosynthetic biomass and productivity using PAM fluorometry and analyze the periphyton for %C and %N. File type: Excel file converted to .csv. Repository: BCO-DMO.

Data and Metadata Formats and Standards

Data will be entered into Excel and converted to .csv files. Data will include date, time, location, and experimental treatment. Metadata will be prepared in accordance with BCO-DMO conventions (i.e., using the BCO-DMO metadata forms) and will include detailed descriptions of collection and analysis procedures.

Data Storage and Access During the Project

The investigators will store project data on laboratory computers that are backed up to both onsite and offsite hard drives. The PI will establish an account wtih UCI Google Groups for data sharing and collaboration among investigators.

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

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 interested in nutrients and productivity in coastal marine systems. 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

BCO-DMO will ensure that project data are submitted to the appropriate national data archive. The PI will work with BCO-DMO to ensure data are archived appropriately and that proper and complete documentation are archived along with the data.

Roles and Responsibilities

Each PI will be responsible for sharing data among the project participants in a timely fashion. The lead PI, M. Bracken, will coordinate the overall data management and sharing process and will submit the project data 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.