

## 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 datasets, described in the list below. These include the following:

1. Europe seaweed traits: Data for individual seaweeds and thallus portions collected from United Kingdom and Portugal rocky shores will include (a) thallus dry matter content, (b) frond thickness, (c) carbon content (%C), (d) carbon-to-nitrogen ratio (C:N), (e) nitrogen content (%N), (f) specific thallus area (STA), (g) surface-area-to-volume ratio (SA:V), (h) maximum length, (i) aspect ratio, (j) surface-area-to-perimeter ratio (SA:P), and (k) attachment strength. File type: Excel file converted to .csv. Repository: BCO-DMO.
2. USA seaweed traits: Data for individual seaweeds and thallus portions collected from northern and southern California shores will include (a) thallus dry matter content, (b) frond thickness, (c) carbon content (%C), (d) carbon-to-nitrogen ratio (C:N), (e) nitrogen content (%N), (f) specific thallus area (STA), (g) surface-area-to-volume ratio (SA:V), (h) maximum length, (i) aspect ratio, (j) surface-area-to-perimeter ratio (SA:P), and (k) attachment strength. File type: Excel file converted to .csv. Repository: BCO-DMO.
3. Europe seaweed functions: Candidate measurements (with implications for ecosystem functioning) for seaweeds from United Kingdom (Gower Peninsula, Wales) and Portugal (Viana do Castelo region) include the following: (a) lab primary productivity (data from photosynthesis-irradiance curves), (b) field photosynthesis (light curves from PAM fluorometry), (c) lab nitrogen uptake (data from nutrient uptake trials), (d) susceptibility to herbivory (field experiments), (e) growth (field measurements), persistence (field measurements), and (f) decomposition (field measurements). File type: Excel file converted to .csv. Repository: BCO-DMO.
4. USA functions: Candidate measurements (with implications for ecosystem functioning) from northern and southern California shores include the following: (a) lab primary productivity (data from photosynthesis-irradiance curves), (b) field photosynthesis (light curves from PAM fluorometry), (c) lab nitrogen uptake (data from nutrient uptake trials), (d) susceptibility to herbivory (field experiments), (e) growth (field measurements), persistence (field measurements), and (f) decomposition (field measurements). File type: Excel file converted to .csv. Repository: BCO-DMO.
5. Europe environmental gradients: Surveys of intertidal community composition along environmental gradients on shores of the Gower Peninsula, Wales and the Viana do Castelo

region of Portugal, including wave-exposure and tidal elevation, along with intertidal temperature and ambient seawater nutrient ( $\text{NO}_3^-$ ,  $\text{PO}_4^{3-}$ ) concentrations. File type: Excel file converted to .csv. Repository: BCO-DMO.

6. USA environmental gradients: Surveys of intertidal community composition along environmental gradients on northern and southern California shores, including wave-exposure and tidal elevation, along with intertidal temperature and ambient seawater nutrient ( $\text{NO}_3^-$ ,  $\text{PO}_4^{3-}$ ) concentrations. 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 species. 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 with 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 publicly available without restriction once submitted to the public repositories.

Data produced by this project may be of interest to scientists interested in the diversity and functioning of 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 project participant will be responsible for sharing data in a timely fashion. The NSF 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 (BCODMO) who will be responsible for forwarding these data and metadata to the appropriate national archive.