Data Management Plan

Lead PI: Bob Steneck, University of Maine
Project Title: Ocean Acidification: Century Scale Impacts to Ecosystem Structure and Function of Aleutian Kelp Forests

1. Overview:

We propose a 3-year project involving field surveys, field collections and coupled laboratory experiments involving the crustose coralline algae (CCA) *Clathromorphum nereostratum* and *C. compactum* to document the effects of ongoing ocean acidification and food web changes on these important reef-builders. Two cruises in the Aleutian archipelago of the subarctic North Pacific will take place between 2013–2015. Data generated from this project will include observations of the densities of organisms found in the environment, rates of processes (e.g., herbivory) in nature or as a function of treatment in laboratory study, and physiological rates (e.g., growth, calcification) archived in the skeletons of the long-lived coralline algae. Most of these data will be scored from images captured in the field or laboratory.

The table below summarizes the data to be generated from the proposed work. Images of the coralline algal skeletons along with data listed will be submitted to and archived with the Biological and Chemical Oceanography Data Management Office (BCO-DMO). Physical specimens of coralline algal skeletons will be stored and archived at the University of Maine. Methods of data collection and analyses as well as model results will be published in peer-reviewed research articles within 12-24 months of data collection.

Responsible PI	Data Description	Data Type	Format
Steneck	Densities of target organisms in the field (# per m^2)	Observational	.xls files
Steneck	Rates of CCA bioerosion in the field (% cover, depth)	Observational	
Steneck	Annual records of skeletal growth, density, and calcification rate archived in the CCA skeleton	Observational	
Steneck	Photo-quadrat images of CCA bioerosion in the field	Observational	.jpeg files
Steneck	High magnification digital images of CCA growth and skeletal density	Observational	
Steneck	Measures of CCA skeletal growth, density, and rate of erosion in response to experimental manipulations of seawater pCO_2 and temperature and urchin grazing in the laboratory	Experimental	.xls files
Steneck	High magnification digital images of CCA growth and skeletal density following experimental manipulation of seawater pCO_2 and temperature in the laboratory	Experimental	.jpeg files

2. Data Handling

As data are being collected, they will first be recorded in field notebooks and then entered immediately into a Microsoft Excel file. Data contained in Microsoft Excel files, along with digital images from our field and laboratory studies, will be consolidated and distributed among the research team weekly. These data will be backed-up on removable hard disk drives or DVDs at our respective institutions. Further, the digital data files will be stored on a secure online server (e.g., Dropbox, iCloud). With this approach, data back-ups will be redundant, all involved researchers will have access to all the data regardless of time or location, and if there is a premature departure of any key personnel, the data remains with the PI and central Institution (U. Maine). The data will be retained indefinitely. The coralline algae skeleton cross-sections analyzed in this study will be preserved and archived at the University of Maine, in the event that someone wishes to study these collections in the future.

3. Data Policy Compliance

We will coordinate data sharing and archiving with the Biological and Chemical Oceanography Data Management Office (BCO-DMO). We will comply with the Policy requirement that data be reported/archived with the appropriate data repository within two years after the data are collected. In addition to submitting metadata and data to the national data center, we will create our own website page for data information for at least the duration of the project.