

## DATA MANAGEMENT PLAN

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**Types of data.** During the proposed project, we will collect ecological (organisms' abundance, grazing rates, primary productivity) and environmental data (seawater temperature, pH, carbonate chemistry, PAR) in all years of the project. In addition, we will collect organismal data during experiments.

### **Observational datasets:**

1. **Environmental monitoring:** Data will include seawater temperature, pH, conductivity, dissolved oxygen, irradiance, and nutrient concentrations (nitrogen and phosphorous).
2. **Kelp forest community surveys:** Data will include seasonal surveys for community structure (density and percent cover) of all conspicuous benthic taxa, as well as community structure of inconspicuous small mobile grazers, size structure of abundant herbivore species, primary production, C:N, C:P, and phenolic concentration of abundant primary producers.
3. **Consumer bioenergetics:** Data will include seasonal measurements of metabolism, grazing rate, and energy assimilation for the most abundant herbivores.

### **Experimental datasets:**

1. **Consumer bioenergetics:** Data will include temperature, pH and other parameters in the carbonate system, as well as metabolism, grazing rate, and energy assimilation of the most abundant herbivores.
2. **Algal attributes:** Data will include temperature, pH and other parameters in the carbonate system, irradiance, seawater nutrient concentration, as well as growth, C:N, C:P and phenolic concentrations of the most abundant primary producers.
3. **Indirect effects experiment:** Data will include temperature, pH and other parameters in the carbonate system, irradiance, seawater nutrient concentration, as well as growth, C:N, C:P and phenolic concentrations of the most abundant primary producers and growth, metabolism, grazing rates, and energy assimilation of the most abundant herbivores.

**Standards for data.** Metadata (date, time, location, experimental treatment, etc.) will be prepared in accordance with BCO-DMO conventions. All data (in CSV format) will be submitted to BCO-DMO, The National Oceanographic Data Center (NODC), and the Ocean Acidification International Coordination Centre (OA-ICC) in their preferred format.

**Data Storage and Access During the Project.** All project data will be stored on laboratory computers that are backed up to hard drives both onsite and offsite. PI Kroeker will establish a Google Group for data sharing and collaboration among the project team.

**Policies for access to data.** All data used in peer-reviewed publications will be submitted to BCO-DMO, NODC, and OA-ICC within two years of data collection. The PI and

students will be given access to the data, and standard policies for access (e.g., obtaining permission from dataset owner) will be used as appropriate.

***Policies for re-use of data.*** We anticipate and encourage collaborative re-use of our data (e.g., applying new analytical techniques to generate new insights or using data in the context of comparative studies and reviews). In all cases, the data from this project can be made available without any restriction for use in syntheses and meta-analyses.

***Plans for archiving data.*** Data will be archived at the BCO-DMO, NODC, and OA-ICC. Metadata and data will be submitted within 2 years of data collection. We will submit our data to BCO-DMO first and work with archivist there to coordinate the sharing with other appropriate data centers.