Data Management Plan

I. Types of data to be collected will include:
(1) Mussel Bed Dynamics. Data will include areas mussel beds, number and sizes of disturbance patches (disturbance surveys) at each site. These data will be taken from field surveys using survey equipment and drone images.
(2) Quantification of mussel mortality. Data will be numbers of dead mussels in 2-5 mussel beds at each of 7 study sites. Data will be collected monthly or as often as weather permits.
(3) Water samples. Samples will include those taken to quantify chlorophyll-a, those taken to determine the presence and abundance of toxin-producing naked flagellates, and those taken to determine the presence and abundance of possible other dinoflagellate toxin producers.
(4) Tissue processing. Data will include the stage of tissue condition (e.g., gut, kidney histology) and how this varies among sites through time. Toxin screens will assess the types and levels of toxins in mussel samples, also among sites and through time.
(5) Temperature Data: Temperature data will be recorded every 15 mins in the low, mid and high zone at each study site.

II. Analyses planned.
(1) *Mussel Bed Dynamics.* Mussel bed images from drones will be imported and stitched together using ArcGIS to allow assessment of disturbance size and number as well as total mussel bed area.
(2-5) *Mussel mortality, Water samples, Tissue samples, Temperature.* Analysis will use straightforward parametric and non-parametric statistics, as appropriate to quantify spatial and temporal patterns.

III. Archiving standards and Policies and provisions for re-use, re-distribution and production of derivatives. We will deposit all data into BCO-DMO, DataONE, and Figshare.

IV. Policies for access and sharing. All data but those involved in graduate thesis research will be available within a year of collection. Thesis-related data will be made available upon publication, or within 2 years of collection, whichever comes sooner.

V. Data Management Framework. The overall data management framework for this project will involve the use of Biological and Chemical Oceanography Data Management Office (BCO-DMO) as the primary metadata catalog and where appropriate, data storage and access portal. The core data management objectives will be to archive and make accessible data sets from ecological and experimental studies as coupled, cross-referenced data resources. Metadata and data will be hosted by BCO-DMO, the PISCO database (http://www.piscoweb.org/DataCatalogAccess/DataCatalogAccess.html), and Data One. Figshare will be used to deposit data from publications. For datasets that are not directly hosted by BCO-DMO, access will be provided through web links made available through the BCO-DMO portal. BCO-DMO will submit metadata and data to the NODC for long-term archiving as per policy.
The PISCO database is replicated on DataONE (http://www.dataone.org): The PISCO (Partnership for Interdisciplinary Studies of Coastal Oceans) has existed since 1999, and data generated by the research conducted by the four academic institutions (OSU, UCSC, UCSB, Hopkins Marine Station of Stanford University) are archived in the database.

VI. Outreach. Material relating to public dissemination of relevant results, including publications, podcasts, any available recorded lectures, microdocumentaries, film and TV appearances when available and any other recorded media will be made available on the PISCO website.