Data Management Plan

Outline of data to be obtained in the LTREB proposed research project:

1. Types of data to be collected will include:

A Ecological Data:

(1) Community surveys (vertical transects), taken to quantify patterns of intertidal community structure and diversity at 12 sites from central Oregon to southern California. These will be based on permanently marked replicated plots spanning the low to high intertidal at each site, and monitored both photographically and directly in the field. Data yielded would be percent cover of all algae and sessile invertebrates, density of mobile species, and size structure of focal species.

(2) Belt transects: Five replicate 2 x 10 m "belt" transects parallel to the ocean's edge will be sampled bi-annually at each site. Data will include numbers, sizes (wet weight and arm length), and disease status (healthy or with sea star wasting symptoms).

(3) Mussel transplants: Five replicate clumps of 30 mussels each will be transplanted annually at each site. Data will include shell length growth, shell and tissue wet and dry mass (for 10 individuals from each clump), gender, and gonad size.

(4) Sea Star fecundity: In April each year, and after each animal is wet-weighed, one arm from each of 15 individuals per site will be removed, weighed, and have the gonad and pyloric caecum removed and weighed.

(5) Predation rate experiments: The rate of mussel removal by sea stars will be quantified annually at each site by transplanting 10 clumps of 30 mussels each to the low intertidal zone. Five clumps will be surrounded by a predator-excluding fence and five will have partial fences to serve as a control. Data will be the number of mussels counted in each plot every two to four weeks.

(6) Interaction experiments: The strength of predation, competition for space and facilitation will be tested annually at each site using exclosure cages and manual manipulations. Data will be percent cover of sessile invertebrates and macrophytes.

(7) Environmental measures. We will monitor air and seawater temperatures, phytoplankton abundance and nutrients at each site. Data will be hourly mean air and seawater temperatures, chlorophyll-a (micrograms/l) and micromolar NO3, NO2, PO4, and SiO4.

2. Standards to be used for data and metadata format and content are those of DataONE and PISCO (see below).

3. Policies for access and sharing.

All data will be available within 3 years of collection. Repositories will include BCO-DMO (for physical data), DataONE and Dryad (biological data).

4. Policies and provisions for re-use, re-distribution and production of derivatives.

See 3 above.

5. 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), DataONE, and/or Dryad. 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.

6. Outreach. Material relating to public dissemination of sea star wasting syndrome and stability of the ecosystem, 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 data portal.