Data Management Plan

Data description: This project will collect several types of data, including physical, ecological, and trait data. At least three years of data will be collected, QA/QC'd, archived, and disseminated to other interested parties. Metadata files, full data sets, derived data products and physical collections will be made publicly accessible within two (2) years of collection. The physical data include time series temperature, light, and wave exposure. The ecological data will include community survey data comprising species-specific abundance measures. The trait data will comprise tables of data on many diverse morphological, physiological, and life history traits. Field data will be georeferenced with GPS coordinates and depth data. All data will include comprehensive metadata on protocols and conditions. In addition, we will rely on data collected by other projects, particularly data on macroalgal community composition and productivity from Santa Barbara Coastal LTER. Model code and results from simulations are considered part of the project data set.

Data management: Our data management will be coordinated with Santa Barbara Coastal LTER Information Management System (IMS), which has been developed to facilitate multidisciplinary research by focusing on ease of access, data organization and integrity, and long-term preservation. The IMS is closely integrated with the Environmental Data Initiative (EDI). The PIs will interact with the IMS staff to ensure efficient operations; all three are familiar with the organization of the IMS. Students will be trained in use of the IMS whenever appropriate.

Metadata used in the IMS are based on the LTER network standard, Ecological Metadata Language (EML) with some compatible XML schemas to meet local needs. The data framework contains metadata content, data inclusion, and quality control of metadata and data. Completed data packages will be archived in the repository of the Environmental Data Initiative (EDI), which was founded in 2016, as a re-visioning of the original LTER Network Information System (NIS) to serve the data archiving needs of a larger community of ecosystem-based researchers. SBC LTER's transition from the LTER NIS to EDI has been seamless, largely due to our close association with M. O'Brien, a Co-PI on the EDI project. Data contributions to EDI are mirrored at DataONE. Datasets are co-managed by IMS staff and the data owners. Both primary data and metadata, in addition to being made available through the IMS system described above, will be provided to The Biological and Chemical Oceanography Data Management Office (BCO-DMO) for storage and dissemination. In addition, macroalgal trait datasets will be shared with the ecological community via the Open Traits network, which has numerous large datasets of species traits available but none that include macroalgae.

Regular scheduled data backups are carried out by staff from LTER, MSI and UCSB. Full backups (level 0) are performed monthly, with incremental (level 5) and progressive incremental (level 9) backups weekly and daily, respectively. Five months of disk-to-disk backups are stored on the server, with storage space allocated to the /backup partition as necessary. Disk-to-disk backups are also transferred to a LTO-3 tape drive with appropriate software for offsite archive.