**Data Management Plan**

*Data description*: This project will collect several types of data, including physical oceanography (PO) data, biological oceanography (BO) data, and sandy beach ecology (E) data. Three years of data will be collected, QA/QC'd, archived, and disseminated to other interested parties. The PO data include roughly 200 drift kelp trajectories, and the starting distribution of 2000 drift cards and the ending distribution of all recovered cards. The BO data will include data on tagged kelp plants from the study reef, survival data on tagged plants, and reef mapping data. The E data will include time-series data on species richness, diversity and abundance of beach organisms and wrack, as well as beach morphology. Field data will be geo-referenced with GPS coordinates and depth data where appropriate. All data will include metadata on protocols and conditions. Drift card return data collected by volunteers will be screened for accuracy and collated by shoreline section and available geo-referencing information. In addition, we will rely on data collected by other projects, particularly data on giant kelp biomass and loss from Santa Barbara Coastal LTER. Data collected by other programs, and model results from existing simulations will be accessed and used as part of the study. Ocean surface current maps will come from ROMS coastal circulation model simulations. Trajectories will be computed from the model simulations and those trajectories are considered part of the project data set. Ocean circulation and surface gravity wave data will be taken from the local HF radar current mapping system and NDBC mooring, respectively. These data are collected through NOAA funded efforts.

*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 Marine Science Institute (MSI; www.msi.ucsb.edu), the Earth Research Institute (ERI; www.eri.ucsb.edu), and the Ecoinformatics program at the National Center for Ecological Analysis and Synthesis (NCEAS; www.nceas.ucsb.edu). 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. Drifter (kelp) trajectory data can be viewed in realtime via a web-based program (http://www.icess.ucsb.edu/drifter/realtime/index.php) and processed data are available via the web site (http://www.icess.ucsb.edu/drifter/data/index.php).

Metadata used in the IMS are based on the 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. Datasets are co-managed by IMS staff and the data owners. *Morpho* is a metadata management tool created for ecologists to manage their metadata and data for publication, and will be used by this project. Morpho was created with support from NSF (with additional support from NCEAS) by the Ecoinformatics group at NCEAS (http://knb.ecoinformatics.org/software/). SBC LTER leverages the Marine Science Institute (MSI) and the UC Santa Barbara campus network infrastructure, and works closely with the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCOweb.org), the Moorea Coral Reef LTER (MCR.lternet.edu), the Earth Research Institute (www.ERI.ucsb.edu), and the Ecoinformatics program at the National Center for Ecological Analysis and Synthesis (NCEAS.ucsb.edu). SBC has a dedicated Information Manager with contributions from the project coordinator. 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.

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.