South Coast MPA Baseline Program

R/MPA-24B, Grant 10-049, Annual Report Year 1

Investigators: Jenifer Dugan, H. Mark Page

Project Title: Sandy-Beach Ecosystems: Baseline Characterization and Evaluation of Monitoring Metrics along the South Coast

Project number: R/MPA-24B

Agreement number: Grant 10-049

Report date: September 22, 2011

Reporting Period: August 31, 2011 to September 1 2012.

Summary comparing the actual accomplishments with the goals and objectives (timelines, tasks, budget etc.) established in the work plan, the findings of the investigator; reasons why established goals were not met, if appropriate;

Progress on our goals and objectives has been excellent in Year 1. We have followed the proposed timeline and added a spring 2012 survey of indicator/focal taxa at our study beaches. We conducted surveys designed to describe the ecological conditions, including draft indicator/focal species or taxa for key attributes and metrics of a range of beach types located inside and outside of MPAs in the South Coast Region. Between late August and early November 2011 we conducted intensive biodiversity surveys of intertidal invertebrate communities, wrack and beach characteristics at 12 beaches (6 inside MPA and spatially paired 6 Reference beaches located outside MPAs). In December of 2011 we initiated monthly surveys of the birds, people, dogs, kelp plants, wrack, and beach characteristics on the 12 beaches that were surveyed for biodiversity. Standard monthly photos are also shot at each study site. These surveys are ongoing and will span two years, through November 2013. During the winter January- March, we conducted surveys of Pismo clam populations in cooperation with California Fish and Game at 2 MPA and 2 Reference beaches. Subtidal surveys of Pismo clams at selected beaches are planned for year 2. In May/June of 2012, draft indicator invertebrate taxa (Sand Crabs, *Emerita analoga* and Beachhoppers, *Meglaorchestia* spp.) were surveyed at all 12 beaches. Repeat surveys of these taxa are planned for September/October 2012 as well as spring and fall 2013.

Laboratory processing and identification of preserved samples from the biodiversity and indicator/focal taxa surveys by the graduate student and technician on the project are well underway in the laboratory at UCSB. Spring upper beach taxa processing is completed and more than half of the biodiversity samples are processed. Samples of live Pismo clams were quantified and measured in the field and all animals were released at the survey

beach on the day of the survey. Samples of *Emerita analoga* were also processed live as much as possible within logistical constraints. Data entry is in progress for all these components of our study.

We replaced the San Diego county beach sites of Tijuana River SMCA and Silver Strand State Beach with Swami's SMCA and Carlsbad State Beach also in San Diego County. This change was needed because of the large artificial berm that covers the upper beach habitat and restricts natural beach processes at the north end of the Tijuana SMCA site. The number of beach sites we have surveyed to date is fewer than proposed due to a combination of access issues and suitability concerns discovered during our more detailed site exploration and visits in 2011. Access has not been granted for surveys or sampling at two of our proposed MPA beach sites, one in the Point Conception SMR and the second in the Naples SMCA, both of which must be accessed across private property or from the sea. The beach at the Abalone Cove SMCA is presently too rocky for our beach sampling protocols to survey adequately.

In June 2012, our preliminary results on 1) the biodiversity of intertidal invertebrates at 3 of the MPA beach sites and 2) the distribution of increasingly rare upper beach isopods in Southern California were presented in talks given at the 6th International Symposium on Sandy Beaches (http://www.sandybeach2012.com/Home).

Problems encountered and how they were resolved. If a problem arises that is likely to seriously delay progress, the problem and some strategy for overcoming it needs to be described.

The only issues we have encountered to date involve study site access across private property, which has been denied to date. We are ready to survey these sites and their respective reference sites if access becomes available. The unsuitability of the Palos Verdes MPA sites for standard beach survey protocols will be difficult to address although we plan to visit the site again in Year 2.