

February 22, 2010

FMSA Revised Workplan and Budget, North Central Coast MPA Baseline Program

Project Title: Analysis of citizen-science data from rocky shores and sandy beaches, collected by LiMPETS (Long-term Monitoring Program and Experiential Training for Students).

Project Leader: Amy Dean, Education Manager, Farallones Marine Sanctuary Association, (415) 561-6625 x303, adean@farallones.org.

Project Goals and Objectives:

Goal: Baseline characterization and monitoring recommendations.

Objective 1: Compilation and description of existing LiMPETS data (2002 – 2009) to describe methods and data collected in areas currently surveyed within the North Central Coast MPAs.

- a. Collaborate with MPA Project Leaders (Carr, Raimondi, Dugan and others) to better understand how LiMPETS citizen science data can complement the baseline characterization being conducted for rocky intertidal and sandy beaches in the North Central Coast.
- b. Identify potential inconsistencies in sample frequency or effort at monitoring sites within or near MPAs, such as Duxbury Reef, Montara SMR and Pillar Point.

Objective 2. Conduct LiMPETS rocky intertidal and sandy beach monitoring with students and community groups at the time of MPA implementation (2010 – 2011).

- a. Ensure consistent sample frequency at monitoring sites within or near MPAs.

Objective 3. Analyze and interpret existing rocky intertidal and beach data to:

- a. Describe and understand spatial variation in *Emerita analoga* at sandy beaches that are currently established as LiMPETS monitoring sites within the North Central Coast region.
- b. Describe and understand spatial variation in rocky intertidal species and communities within the North Central Coast region. Four established LiMPETS rocky intertidal monitoring sites will be included in this description: Pigeon Point, Pillar Point, Montara SMR, and Duxbury Reef.

- c. Describe and understand differences in species and ecosystems inside and outside Montara SMR.
- d. Describe and understand historical trends in species, communities and ecosystems with consideration of potential driving or causal factors.
- e. Where possible, identify select monitored species considered to be sensitive and rapid in responding to MPA implementation and describe any changes observed that may or seem likely to be due to the MPAs.

Objective 4. Provide long-term monitoring recommendations, via:

- a. Using the results of the data analysis above in combination with the North Central Coast MPA Monitoring framework to provide recommendations for long-term monitoring that include informative indicators, potential sampling locations, sampling strategies (temporal and spatial frequency), appropriate analytical techniques, additional considerations for implementing citizen-based long-term monitoring, and cost estimates.
- b. Participating in collaborative processes (e.g., workshops) with the MPA Monitoring Enterprise and other baseline program project leaders to:
 - i. Contribute towards an integrated and synthesized assessment of ecosystem conditions at the time of MPA implementation and initial MPA effects following MPA implementation
 - ii. Compare results from citizen science and other monitoring methods to provide recommendations for long-term monitoring.

Timeline:

- 2010: Objective 1 will be completed. Objective 2 will be underway.
- 2011: Objective 2 will be completed. Objective 3 will be underway.
- 2012: Objectives 3 and 4 will be completed.



FARALLONES MARINE SANCTUARY ASSOCIATION

February 18, 2011

Project Title: Baseline Characterization of Newly Established Marine Protected Areas Within North Central California Study Region – LiMPETS Intertidal Citizen Science

Project Number: R/MPA-7

Grant Number: 09.015

Project Leader: Amy Dean, Education Manager, Farallones Marine Sanctuary Association, (415) 561-6625 x303, adean@farallones.org.

Current Interim Project Leader: Alison Young, LiMPETS Coordinator, Farallones Marine Sanctuary Association, (415) 561-6625 x304, ayoung@farallones.org.

FMSA addition to revised workplan: detailed timeline, date of completion, description of the work products

Description of work products:

- (1) GIS maps: Every year as part of annual reports and final report, describing LiMPETS sites and population/community trends.
- (2) Metadata and raw data: Historic LiMPETS data (2002-2009) of relevance and data for first two years of 3-year award period for MPA sites and MPA reference sites.
- (3) Final report: (a) Narrative of project's progress toward program purposes and project goals; (b) Final financial report; (c) Baseline characterization report with analysis and interpretation of historic and new rocky intertidal and sandy beach data; details listed in Objective 3 of revised workplan; (d) Long-term monitoring recommendations; details listed in Objective 4 of revised workplan; (e) Executive Summary.

Date of completion: Final report shall be submitted no later than March 31, 2013 unless a new date of completion is agreed upon by FMSA and Sea Grant.

Detailed timeline: See next page.

LiMPETS Detailed Timeline for North Central Coast MPA Baseline Characterization Project

	2010					2011					2012					2013											
	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M		
Rocky Intertidal Surveys:																											
Duxbury Reef			█			█			█				█			█			█			█					
Fitzgerald Marine Reserve			█			█			█				█			█			█			█					
Pillar Point			█			█			█				█			█			█			█					
Sandy Beach Surveys:																											
Salmon Creek			█			█			█				█			█			█			█					
Montara State Beach			█			█			█				█			█			█			█					
EML compliant database, standardized metadata				█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Year 1 Regional Site Map and Study Area										█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Year 1 map with abundance and basic population stats										█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Year 1 annual report										█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Compilation and preliminary review of historic LiMPETS data (2002-2009)					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Description of historic LiMPETS data								█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Analysis of historic LiMPETS data										█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Year 2 Regional Site Map and Study Area																						█	█	█	█	█	█
Year 2 map with abundance and basic population stats																						█	█	█	█	█	█
Year 2 annual report																						█	█	█	█	█	█
Preliminary review of MPA LiMPETS data (2010-2012)											█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Analysis of MPA data, comparision to historic data																						█	█	█	█	█	█
Description of findings																							█	█	█	█	█
Complete Regional Site Map and Study Area																							█	█	█	█	█
Map with historic and current abundance and population stats and trends																							█	█	█	█	█
Final Report: findings and long-term monitoring recommendations																								█	█	█	█