

An annual progress report prepared for:
State Coastal Conservancy/CA Sea Grant
North Central Coast MPA Baseline Monitoring Program, 09-015

*Baseline Monitoring of Ecosystem and Socioeconomic Indicators for MPAs along the North
Central Coast of California – Consumptive and Non-Consumptive Human Uses*

Project Number R/MPA-16

submitted by Ecotrust

March 29, 2011

Summary:

Through this three year project (March 2010-February 2013), Ecotrust is working to capture spatially explicit data on coastal use patterns and associated information on operation costs, trip expenditures, and demographic characteristics of California's North Central Coast (NCC) consumptive and non-consumptive user communities. Our goal is to understand the interactions between human uses of the coastal ecosystem and the North Central Coast marine protected area (MPA) network. The research is guided by the following objectives:

1. Provide baseline estimates of the quantity, spatial distribution, and economic impacts associated with human uses in the study region;
2. integrate those with ecological indicators of MPA performance;
3. describe the initial response of these user communities to the MPAs following their implementation; and
4. inform the planning and implementation of long-term monitoring, and the development of a modeling framework for understanding the casual links between ecosystem features, socioeconomic changes, and the implementation of MPAs.

A brief synopsis of key progress towards meeting these objectives as of the end of project Year 1 (March 2010 – February 2011) is provided here and accompanied by a more detailed overview of progress to date below:

- We developed a project work plan (attached) to track implementation and attainment of all four objectives. This work plan is integral in achieving project objectives 2 and 4 as it documents survey methods, metrics, methods for integrating our data with ecological indicators, analyses, and lessons learned and will form the basis of our recommendations for planning and implementing future long-term monitoring efforts and modeling frameworks.
- To address project objectives 1 and 3, the consumptive and non-consumptive coastal recreational use online survey was tested in January 2011 with 83% of respondents either strongly or somewhat agreeing that the mapping component was easy to use and understand. Feeling confident the survey tool will capture useful and accurate information, we deployed the tool in early February 2011 and received over 400 survey responses as of mid-March. Over the next two years, this tool will be deployed each season of the calendar year to collect data on the previous three months' activities.
- To address project objectives 1 and 3, we completed the consumptive recreational dive and shore-picking survey tool. Interviews in the field began mid-March 2011 and will continue until June 2011.
- To address project objectives 1 and 3, we began development of the commercial and commercial passenger fishing vessel (CPFV) fishing survey tool. Interviews will begin

May 2011 when the popular Dungeness crab season slows down, making fishermen more available for interviews, and will continue through August 2011.

Progress towards Project Objectives:

Project work began in April 2010 with a joint meeting with NaturalEquity to plan and coordinate project implementation and methods, outreach strategies, timelines, and roles/responsibilities. The primary outcome of this meeting was a three-year work plan that has guided our project work to date and serves as a central coordination and communication tool between internal staff and project partners. This work plan is integral to project objective 4 as it documents methods, metrics, analyses, and lessons learned. As such it will form the basis of our recommendations for planning and implementing future long-term monitoring efforts and modeling frameworks.

In summer 2010, project staff began making initial contact with key individuals from the recreational, CPFV, and commercial fishing communities in the study region. Relationship building and strategic planning for outreach efforts continued throughout summer and fall 2010 with project staff conducting an extended outreach trip to initiate conversations about the project, build relationships, solicit feedback on the proposed survey design for each sector, develop a ‘standing panel’ of commercial and CPFV fishermen to interview, and learn of impacts people may be experiencing since the MPAs were established last year.

During this time, project staff also developed the survey and sample design for each of the project’s three survey efforts: 1) consumptive and non-consumptive recreational coastal use survey (internet panel); 2) in-person consumptive dive and shore-picking survey; and 3) in-person commercial and CPFV fishing survey. Draft survey questions were completed by the end of August, allowing project staff to solicit user communities’ feedback on the survey questions during the outreach trip described above. Once feedback was received from user communities and incorporated into the survey design, project staff began developing several of the survey instruments (detailed below).

1) Consumptive and Non-Consumptive Recreational Coastal Use Survey (internet panel):

From September to December 2010, project staff worked with Knowledge Networks (the internet survey provider) to refine the survey tool. In January 2011, our project team launched a test survey. Prior to testing the survey, project staff developed a survey mapping tool to capture accurate spatial data and associated socioeconomic characteristics in an efficient, cost effective and user-friendly manner. Based on the feedback we received from the test survey, 83% of respondents either “strongly agreed” or “somewhat agreed” that the mapping component was easy to use and understand. In addition, 74% of all activity markers were placed at our preferred zoom level or higher, indicating that respondents were able to navigate the map-based portion of the survey and provide data on where and what they did at an appropriate spatial scale. Based on this feedback, we confidently launched our first wave of surveys (Figure 1) at the beginning of February 2010.

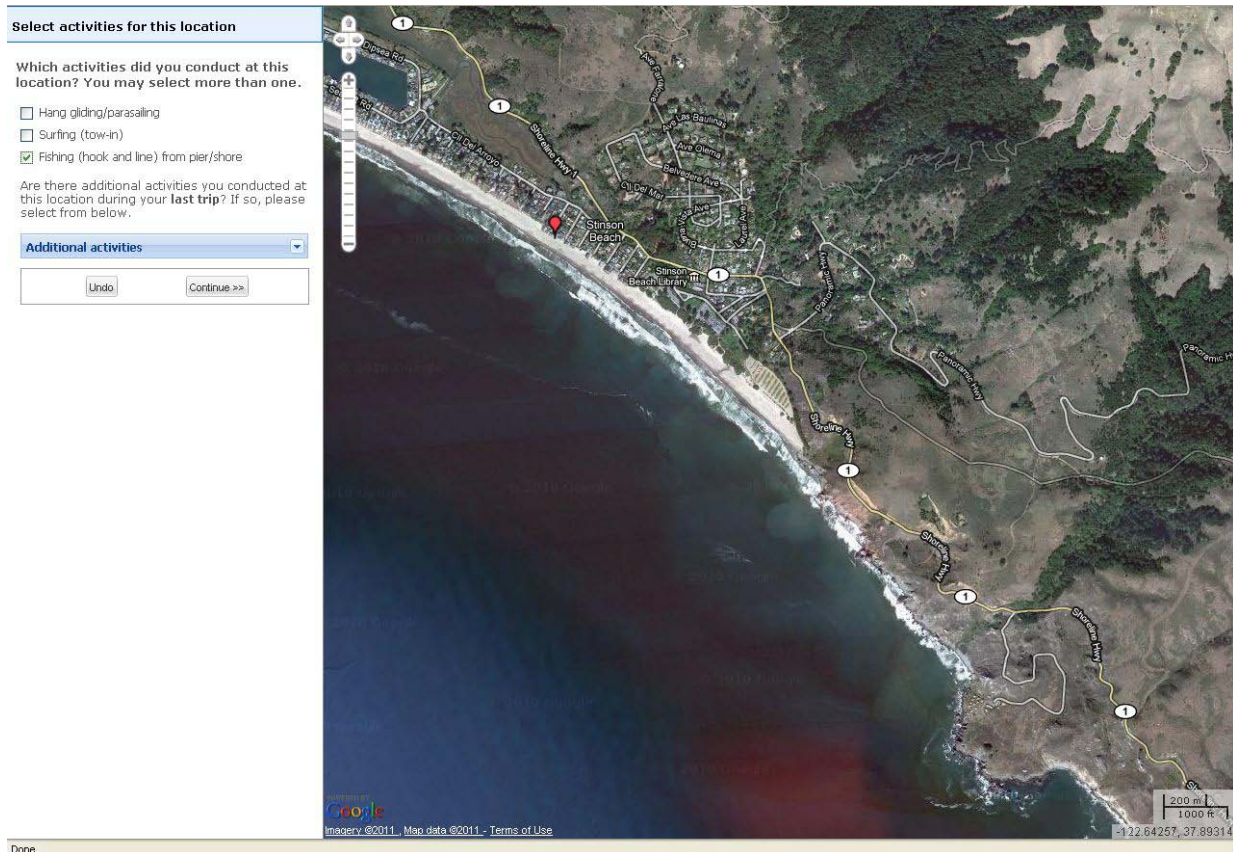


Figure 1. Example of an activity marker for shore-fishing placed at Stinson Beach, California, by a survey respondent.

In January 2011, project staff also developed a data synthesis and analysis plan for the internet panel survey data. The analysis is designed to provide a baseline estimation of the quantity, spatial distribution and economic impacts (expenditures) of the recreational human uses in the study region, informing the initial response to the MPAs for this user community.

In mid-March 2011, project staff received survey and spatial use data from 2,000 online respondents. By mid-April, Ecotrust staff under the guidance of NaturalEquity, will process, summarize, and analyze the data to establish an initial winter season baseline estimate of the quantity and spatial distribution of recreational human uses in the study region. Wave two of the recreational internet survey will then be released at the beginning of May to collect data on coastal recreational activities over the previous three months.

2) *In-person Consumptive Recreational Dive and Shore-Picking Survey*

Between November 2010 and February 2011, project staff completed development of the consumptive recreational dive and shore-picking survey tool. This new tool includes features to advance the accuracy of data collected and streamline data management—saving staff time and minimizing the possibility of human error when compiling and organizing data for analysis. The initial investment in staff time to develop these new features, will streamline data analysis and quality control and assurance measures post-data collection—producing a net cost-savings in staff time.

Based on input provided by the teams leading the ecological monitoring efforts (Carr and Raimondi), this survey will primarily collect data from abalone harvesters as abalone is known for its ecological, recreational, and socioeconomic significance in the north coast study region. In coordination with the ecological monitoring work, we hope to explore and gain a better understanding of the interactions between recreational abalone harvesters and the possible ecological changes in the northern reaches of the study region in and outside of MPAs.

We have worked closely with the California Department of Fish and Game's abalone program to access randomly selected contact information and build upon their existing datasets/methods to support integration and future long-term monitoring. Furthermore, the survey was designed for integration with existing abalone punch card monitoring data, which includes ecological indicators—addressing project objective 3. We began testing the survey tool in the first week of March 2011. Currently, we are performing interviews in the field and will continue these interviews until early July 2011.

Figure 2 illustrates an example of a survey respondent indicating the location of their abalone harvest area. The tool also captures and attributes information to the identified site such as the corresponding abalone punch card site, the coastal access point associated with the area, observed changes in fishing effort at the site, and why the user choose to come to the site.

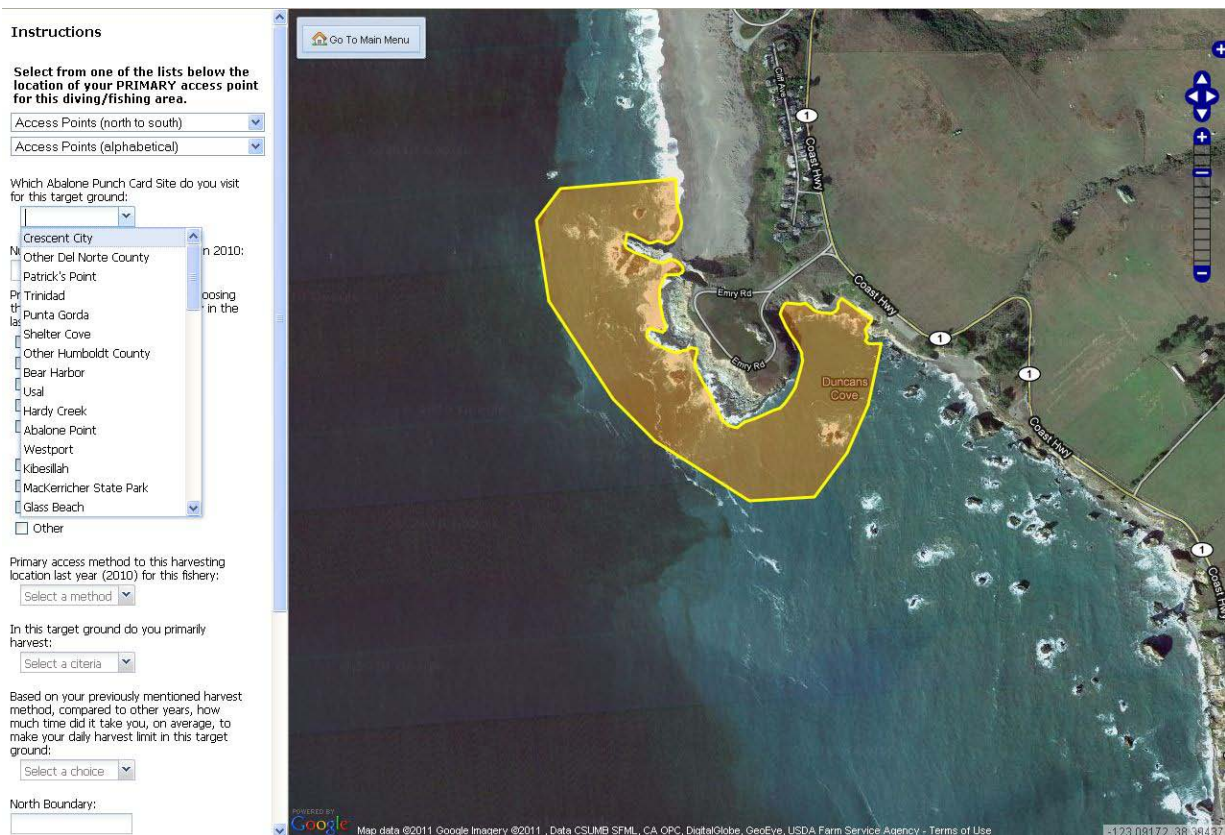


Figure 2. Example of an abalone dive area delineated by a survey respondent, and capture of information specific to this area.

Throughout the survey, individuals are asked about their knowledge of the established MPAs. Many survey questions are designed to determine if spatial shifts in fishing effort are attributed to MPA establishment (Figure 3).

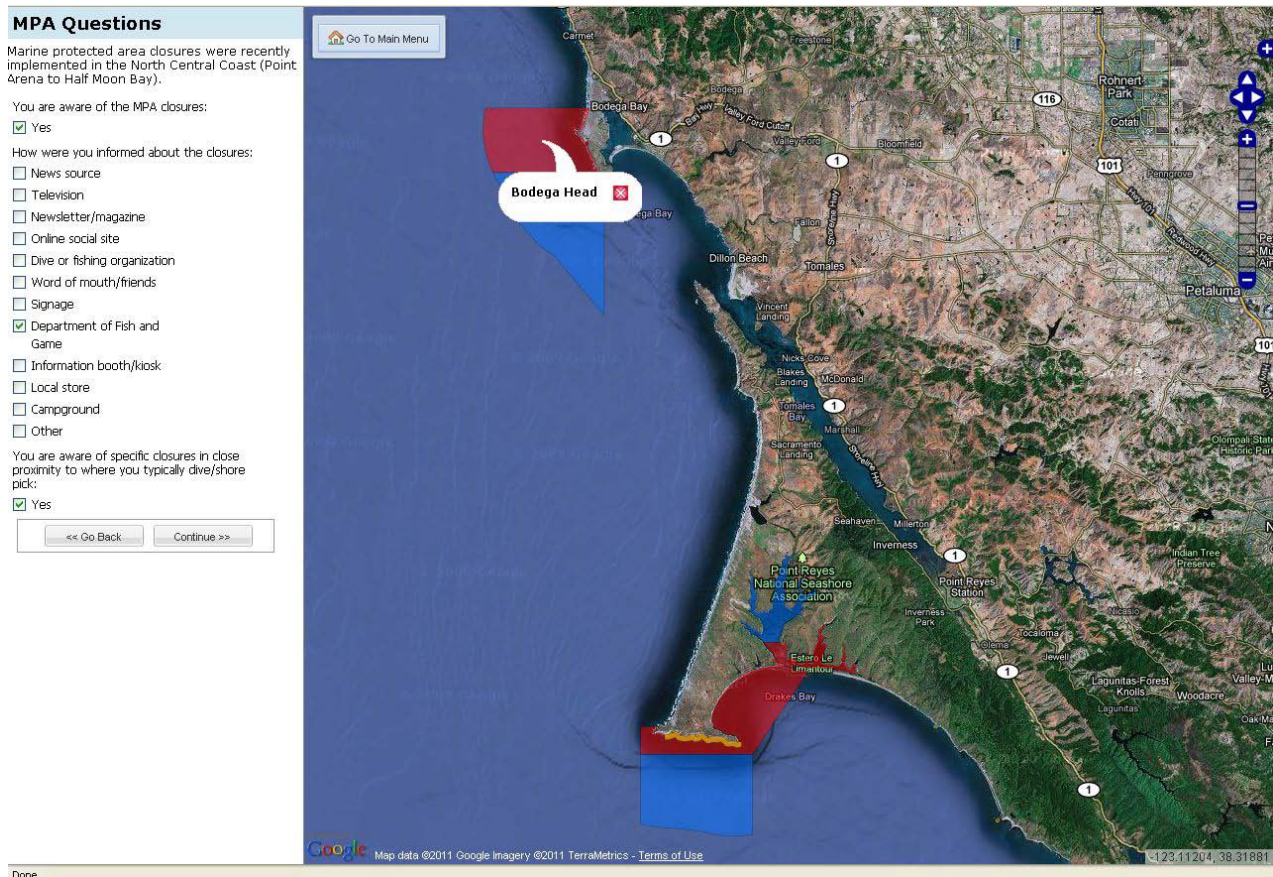


Figure 3. Examples of MPA- related questions.

3) In-person Commercial and CPFV Fishing Survey

In mid-March 2011, project staff began developing the survey tool for the commercial and CPFV fishing surveys. Like the consumptive recreational dive and shore-picking survey, many of the survey questions for this user group are designed to determine if spatial shifts in fishing effort and associated economic loss are attributed to MPA establishment. Survey tool development is scheduled to be completed in early May 2011. After an initial testing period, interviews in the field will commence at the end of May and will continue through August 2011.

Project Timeline and Milestones:

Tasks and Milestones	2010												2011												2012												2013		
	A	M	J	J	A	S	O	N	D	J	F	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			
Project Coordination and Design	■	■			■							■	■				■							■	■								■	■					
Outreach to create and survey "Standing Panel"			■	■	■								■	■	■							■	■																
Survey Design / Tool Development	■	■											■	■	■																								
Data Collection / Management / Integration					■	■	■	■	■	■																													
Spatial Analysis												■	■	■	■	■	■	■	■	■																			
Economic Analysis													■	■	■																								
Collaborative Analysis																																							
Reporting																																							

Figure 4. Originally proposed project timeline and milestones.

Overall, project work is proceeding on schedule. Updates on our project timeline are presented by each sub-component:

Project Coordination and Design: This project sub-component is on schedule and is a continual process. We have scheduled meetings/check-ins with project partners during the months indicated in the timeline above. The attached work plan is integral to project coordination and design and will be updated and/or modified as the project progresses.

Outreach: Initial outreach efforts to key individuals began on schedule and continued past the scheduled timeline into late November 2010. We are on schedule for an additional outreach effort in May 2011 when our field team will begin conducting interviews with commercial and CPFV fishermen.

Survey Design/Tool Development: Survey design and tool development began on schedule. However, this project sub-component was extended for several reasons: 1) extending the timeline allowed us to receive and incorporate vital feedback from each user community; 2) investing more staff time up front in survey tool development yielded higher-quality survey tools and is anticipated to produce a net cost-savings in staff time; and 3) abalone harvester data from the Department of Fish and Game was not received until early February 2011, delaying final decisions on sample design. Further, we just received commercial landings data and information on CPFV operators in mid-March, which has delayed trend analyses and sample design for the CPFV survey. Currently, two out of the three survey tools are complete. We expect that the commercial and CPFV survey tool will be complete in May 2011.

Data Collection/Management/Integration: Data collection began later than anticipated due to extending the survey design and tool development timeline. As noted above, we also decided to postpone interviews with commercial fishermen until May when the Dungeness crab season slows down. We expect that this delay will only extend the data collection period by two months.

Spatial Analysis: We expect that spatial analysis will begin in April 2011 (several months behind schedule) on the first wave of recreational survey data. We anticipate that the timeline for this component will be back on track in September 2011 when spatial analysis for the consumptive dive and shore-picking and commercial and CPFV surveys is scheduled to begin.

Economic Analysis: The economic analysis timeline has been shifted from starting in January 2011 to June 2011 due to a delay in receiving data from the Department of Fish and Game.

Collaborative Analysis: The collaborative analysis timeline is on schedule. Once data is collected, compiled and analyzed, we will collaborate with project partners to integrate our data with ecological indicators.