



MPA Baseline Program

Annual Progress Report



Principal Investigators - please use this form to submit your MPA Baseline Program project annual report, including an update on activities completed over the past year and those planned for the upcoming year. This information will be used by the MPA Baseline Program Management Team to track the progress of individual projects, and will be provided to all MPA Baseline Program PIs and co-PIs prior to the Annual PIs workshop to facilitate discussion of project integration. Please submit this form to California Sea Grant when complete (sgreport@ucsd.edu, Subject [Award Number, project number, PI, "Annual Report"].)

Project Information

Project Year: 2012/13 MLPA Region: South Coast Study Region

Project Title & Number: Citizen Scientist monitoring of rocky reefs and kelp forests: Creating a baseline for California's South Coast MPAs; Project #: R/MPA-21, Grant #: MPA10-049

PI name: Jan Freiwald Co-PI name: Gregor Hodgson

PI Contact Info Co- PI Contact Info (please list additional PIs and contact info in the "Project Personnel" section if necessary)

Address: Reef Check California, Long Marine Laboratory, 100 Shaffer Road, Santa Cruz, CA 95060 Address: Reef Check Foundation, P.O. Box 1057, Pacific Palisades CA 90272-1057

Email: jfreiwald@reefcheck.org Email: ghodgson@reefcheck.org

Phone: 831-345-8167 Phone: 310-230-2371

## Project Goals & Objectives

Reef Check California (RCCA) programs objectives for the SCSR baseline monitoring are:

1. Provide a quantitative baseline characterization of the rocky reef and kelp forest ecosystem feature in and outside of MPAs in the SCSR.
2. Provide pre-MPA implementation data and historical context to ongoing data collection by analyzing RCCA's existing dataset in the context of the new MPAs.
3. Analytically explore the baseline characterizations for potential indicators of the state of the kelp forest ecosystem (i.e. ecosystem indicators) and make recommendations for long-term monitoring.
4. Build capacity for cost-effective long-term MPA monitoring through the continued involvement of community members in the monitoring of MPAs.
5. Expand existing public online data dissemination and illustration tool (NED) to inform managers, stakeholders, policymakers and the public about the status of the marine environment in the SCSR.

## Summary of Project Activities Completed to Date

### Overview of Project Year 2\_\_ Activities, including progress towards meeting goals & objectives

Providing a baseline of the rocky reef and kelp forest ecosystems at the time of MPA implementation in the SCSR  
RCCA began its baseline monitoring of the SCSR in 2011 which lasted for two years and was completed in 2012. In 2013, RCCA added these same SCSR baseline monitoring sites to its statewide network of annually monitored sites so as to add to the longevity of the time series for the SCSR sites while also adding them to RCCA's 8-year monitoring database. With two more months of the survey season remaining we are on track to complete most sites this year.

#### Provide pre-MPA implementation data and characterizations of potential indicators

RCCA's monitoring data from the years prior to baseline monitoring project (2006-10) are readily available and have been converted into a data format that is consistent with the data requirement in the other baseline monitoring regions in which the program is participating. Data analysis for this region is scheduled to commence later in the project period.

#### Capacity building for cost-effective long-term MPA monitoring

In 2012 we have conducted 15 diver trainings and have completed 11 recertification classes statewide. As a result of these courses we have certified or recertified about 230 volunteers, leading to a retention rate of over 50% from the previous year. Many of the returning volunteers have been with RCCA for several years now. These long-term volunteers not only increase the data quality but they also allow us to rely more and more on volunteers for leading surveys. In southern California we trained 122 volunteers in 2012 and have trained and recertified about the same number in 2013. This ongoing training and continued involvement of volunteers that have participated in the baseline monitoring of MPAs in the SCSR is building the human capital and expertise for continued cost-effective citizen sciences long-term MPA monitoring in southern California and the other MLPA regions.

#### Expand public online data dissemination and illustration tool (NED) and outreach

We are in the middle of a redesign of RCCA's online database NED. The new database will accommodate the higher resolution fish data mentioned above and also update the user interface to a Google Earth based visual mapping interface. These updates will include more user friendly data download features, enable the site to run on mobile devices so that users will be able to access information more easily in the field about nearby MPAs and have an up-to-date and interactive data display for exploring individual species or species combinations in different graph formats (heat map, bar and line graphs).

Further, we have worked with collaborators to increase the impact and reach of our baseline monitoring data. We are involved in the Bight' 13 project in Southern California working on evaluating the effects of fishing pressure vs. pollution on rocky reefs in the region. We are also currently working with several corporations in the study region to grow our community education program and increase awareness about the status of California's reefs and MPAs, as well as to secure funding for continued long-term monitoring of the statewide program.

To increase outreach activities and inform the public about citizen science and MPA monitoring we have worked with several groups (e.g., Open Channels, Resource Media) and given presentation in webinars, at dive clubs and public ocean related events. We are working on the implementation of a Reef Check California speakers' bureau to inform audiences that are not typically involved in our activities (i.e. non-divers, school children etc.) about MPAs, monitoring and the importance of citizen science.

*MPA Baseline Program Annual Report*

*Highlights from project progress so far, such as successes achieved, new collaborations or partnerships, or interesting stories from the past year that may be suitable for a blog post or other media venue*

RCCA has release a report on its first six years of rocky reef and kelp forest monitoring in 2013. This report titled: "Status of Rock Reef Ecosystems in California" is available at Reef Check's website at: <http://www.reefcheck.org/rcca/reports.php>.

*Description of any unforeseen events and substantial challenges, and resulting effects on project activities and progress. Please indicate any issues that may affect other PI's or require coordination with other Baseline partners (e.g., ME, DFG, Sea Grant).*

Since the two years of baseline monitoring were completed at the end of 2012, our 2013 monitoring results will not affect the outcome of the baseline-monitoring project. Nevertheless an unforeseen challenge that could affect the long-term monitoring of these sites is access; more specifically finding appropriate boats to reach some many of the sites around the Channel Islands. We have had a difficult time this year surveying many of our sites on the Channel Islands because of the loss of boat time on DFW research vessel 'Garibaldi' due to the loss of its captain earlier this year. Currently, we are working to complete as many sites as possible on the Islands by working with commercial charter boats but this comes at an increase program cost. Loss of support from state agencies due to factors outside of our control affects the program's effectiveness or dramatically increases costs. Reef Check remains the most cost-effective method for the long-term monitoring of California's reefs and MPAs, but we must stay vigilant to maintain that cost effectiveness in light of rising boat costs and restricted resources.

*Data status (i.e., paper/raw format or digitized; if digitized, what format?)*

Reef Check California's data from the south coast study region for the years 2011 and 2012, and data from all previous years, is available in flat file formats and as MySQL database. All data are QA/QC'd and ready to be analyzed. Metadata for these types of data have been developed for the north Central Coast study region and can be applied -with slight modifications- to the south coast data. 2013 data is currently being entered and will be available in early 2014.

**Activities Planned for following Project Year \_3\_ (if applicable) – Please describe remaining work and approximate timelines for completing that work, including any anticipated budget variances necessary to complete the project.**

For the remaining period of the project we will focus on data analyses and integration of results with the other SCSR baseline monitoring projects. At the same time, we will continue to monitor our existing sites in the south coast region, inside and out of MPAs, to transition from baseline to continued long-term monitoring of the MPA network in this and other study regions. For this we will rely on and continue to build the network of volunteer citizen scientists that have contributed to the baseline monitoring of the southern California MPAs.

Data analyses and integration with other projects will be facilitated by the PI data integration meeting in January and later in 2014, and the timeline of completion of individual and integrative reports may depend on the outcomes of the workshop. This might require a no-cost extension of the grant but this will be coordinated with the other project PIs.

**Project Personnel – Please indicate additional project personnel involved in your MPA baseline project, including students and volunteers, or additional PI contact information if necessary, as well as the nature of their assistance in the project project.**

	<i>Staff</i>	<i>Student Volunteers</i>	<i>Nature of Assistance</i>
<i>Regional manger</i>	<i>1</i>		
<i>Volunteer coordinator</i>	<i>1</i>		

*Number of other Volunteers not counted above and the nature of their assistance in the project:*

RCCA trains or recertifies about 250 volunteer citizen scientists every year. These citizen scientists collect the data with the assistances and supervision of RCCA staff. A large number of volunteers in southern California have been with RCCA for many years now and have contributed to data collection year after year.

*MPA Baseline Program Annual Report*

*Additional PI contact info not listed on first page:*

**Cooperating Organizations and Individuals** - *Please list organizations or individuals (e.g., federal or state agencies, fishermen, etc.) that provided financial, technical or other assistance to your project since its inception, including a description of the nature of their assistance.*

<i>Name of Organization or Individual</i>	<i>Sector (City, County, Fed, private, etc.)</i>	<i>Nature of cooperation</i>
<i>PISCO UCSB</i>	<i>University</i>	<i>Technical, collaboration in field and use of PISCO boat</i>
<i>Humboldt State University</i>	<i>University</i>	<i>Trained divers, helped with Reef Check surveys</i>
<i>Campbell Foundation for the Environment</i>	<i>Private Foundation</i>	<i>Funding for California program part of which was used for monitoring in SCSR</i>
<i>RLFF</i>	<i>Private Foundation</i>	<i>Funding for California program part of which was used for monitoring in SCSR</i>
<i>CLifBar Family Foundation</i>	<i>Private Foundation</i>	<i>Funding for California program part of which was used for monitoring in SCSR</i>
<i>Department of Fish and Wildlife</i>	<i>State</i>	<i>Boat time, scientific diver training for RCCA staff</i>
<i>Long Beach Aquarium of the Pacific</i>	<i>NGO</i>	<i>Trained divers, helped survey sites</i>
<i>Southern California Edison</i>	<i>Private</i>	<i>Financial, and outreach and educational activities</i>
<i>Dana Point TBID</i>	<i>Private</i>	<i>Financial, and outreach and educational activities</i>
<i>Malibu Divers</i>	<i>Private</i>	<i>Financial</i>

**Project Outputs and Materials:** Please provide any other project-relevant information, such as descriptions of attached materials, media coverage your project has received, presentations, publications, images etc.

**Publication:**

Freiwald, J., M. Wehrenberg, C. Wisniewski, and G. Hodgson. 2013. Status of Rocky Reef Ecosystems in California 2006 - 2011. Reef Check Foundation, Pacific Palisades, CA, USA.

**Press coverage:**

1. Public News Service Radio: Title: Underwater Detectives Take the Pulse of CA's Marine Sanctuaries  
Date: 10/1/2012, <http://www.publicnewsservice.org/index.php?/content/article/28628-1>  
Distributed by 460 stations Statewide
2. KSRO Radio Sonoma County (Newstalk 1350 KSRO): Title: Underwater Detectives Take the Pulse of CA's Marine Sanctuaries, Date: 10/2/2012, Live interview
3. TV interview KION central coast TV station: Date of interview: 2/26/2012 Journalist Brett Martin
4. KUSP interview on citizen science and central coast symposium, Interview date: 3/21/13

**Presentations:**

- 2013 Annual Conference of Society for Conservation GIS. Jan Freiwald. Marine Spatial Session. Invited panel speaker.
- 2013 Ecosystem-Based Management tools Network. Effective Citizen Science for Coastal and Marine Environments: Reef Check California, COASST, and MPA Watch. Open Channel webinar. Invited speaker. <http://openchannels.org/webinars/ecosystem-based-management-ebm/citizen-science-coastal-and-marine-environments-reef-check>
- 2013 Humboldt State University. Citizen scientist kelp forest surveys: Statewide MPA monitoring. Jan Freiwald. Invited Seminar.
- 2013 Status of the California Central Coast Symposium: Jan Freiwald. Citizen Scientist kelp forest monitoring: Results from Marine Protected Area (MPA) baseline surveys along California's Central Coast. Monterey. Invited speaker
- 2013 Status of the California Central Coast Symposium: Jan Freiwald. Engaging Communities in support of Effective MPA Management. Invited Panelist.
- 2013 Northern California Public Participation in Scientific Research Workshop. Jan Freiwald. UC Davis. Invited participant. Contact info Heidi Ballard, [hballard@ucdavis.edu](mailto:hballard@ucdavis.edu) & Colin Dixon, [cghdixon@ucdavis.edu](mailto:cghdixon@ucdavis.edu)
- 2013 Jan Freiwald. Interview at the Learning Design Goup at Laurence Hall of Science, UC Berkeley, CA 94720. This was not a presentation but an interview to help design a middle school science curriculum. Contacts: Phaela Peck, [ppeck@berkeley.edu](mailto:ppeck@berkeley.edu) & Jeremy Price [jeremy.price@berkeley.edu](mailto:jeremy.price@berkeley.edu)
- 2012/13 NCEAS workshop on Ecosystem Conditions Assessment. Jan Freiwald. Invited participant. Santa Barbara (put on by MPA ME)
- 2012 Western Society of Naturalist: Jan Freiwald, Megan Wehrenberg, Colleen Wisniewski. Rocky Reefs since the 1970's: Comparison of Historic Data to Reef Check California Surveys. Talk.
- 2012 AAUS Symposium: Chelsea Prindle, James Lindholm, and Jan Freiwald. Seasonal variability of kelp forest fishes and the implications for sampling frequency in a citizen science monitoring program. Talk
- 2012 AAUS Symposium: Megan L. Wehrenberg, Jan Freiwald. Reef Check California: applied ecosystem monitoring as a training tool for AAUS programs. Talk
- 2012 AAUS Annual meeting: Megan L. Wehrenberg, Jan Freiwald. Reef Check California Workshop: Kelp forest species ID and Reef Check California survey methods.