Special Topic: Monitoring the South Coast with Citizen Science

About This Snapshot Report

This report highlights the contributions of citizen science to MPA monitoring projects in California's South Coast. Citizen science is and will continue to be an important contributor to marine protected area (MPA) monitoring that informs adaptive management of the MPA Network. Facts and figures in this report are derived from the projects' peer-reviewed technical reports and associated references,[2,3,4,5] and results from the South Coast Monitoring Survey,[6] which can be found, along with associated data, at OceanSpaces.org.

The Role of Citizen Science in Establishing a Benchmark

California recognizes that monitoring the statewide MPA network requires coordination and collaboration. This is certainly the case for MPA monitoring in a region as large and diverse as the South Coast. This collaboration includes citizen science—a scientific endeavor developed and/or enacted by people who are not trained as conventional scientists. Engaging citizen science programs can promote education, awareness, and stewardship, as well as generate large amounts of quality data cost-effectively. Volunteers can be a tremendous source of local expertise, innovative ideas, and enthusiasm. Four of the nine South Coast MPA baseline monitoring projects incorporated work with local experts and citizen scientists, through collaboration with three groups: Reef Check California (RCCA),[7] Long-term Monitoring Program and Experiential Training for Students (LiMPETS)[8], and the South Coast Lobster Research Group (SCLRG)[9].

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RCCA led monitoring of one of the two kelp and shallow rocky reef monitoring projects, working with a team of highly-trained volunteer divers to collect data on the ecology of these iconic ecosystems. RCCA has mobilized the available volunteer base to monitor South Coast kelp and shallow rock ecosystems since 2006. The group had over 50% volunteer retention during the baseline period, which they attributed to increased volunteer engagement when contributing to MPA baseline monitoring.

LiMPETS focuses on monitoring sandy beach and rocky intertidal ecosystems, primarily with middle and high school students. Researchers in both the sandy beach and the rocky intertidal monitoring projects collaborated with LiMPETS to evaluate the group's monitoring protocols for these two ecosystems. They recommended updates to the LiMPETS protocols that could potentially produce more scientifically rigorous data, while still being appropriate for students with little to no data collection experience or knowledge of sandy or rocky intertidal species.

The SCLRG formed in 2011; they developed and led the spiny lobster research project. The SCLRG is a collaboration among scientists, resource managers, fishermen, and volunteers. Members of the SCLRG collected data through California spiny lobster tag-recapture and scuba studies from 2011 to 2013.
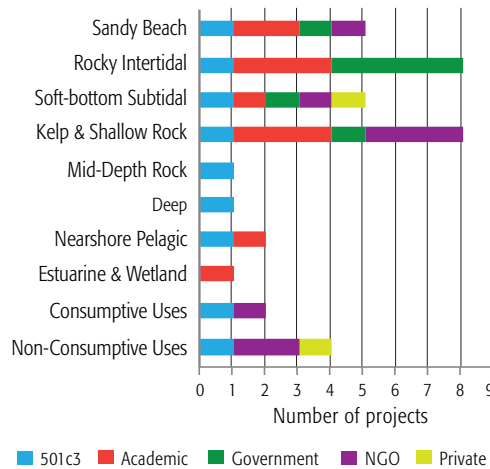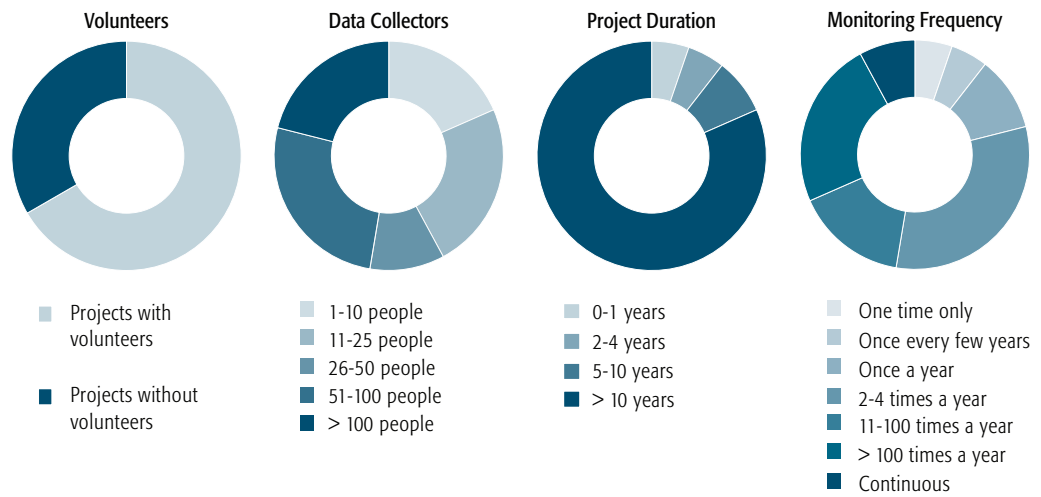
South Coast Monitoring Projects with Citizen Science Components

Results from the South Coast Monitoring Survey, indicate 21 of 36 projects representing 12 organizations include volunteer citizen scientists.

While citizen science projects monitored all ecosystem types, rocky intertidal and kelp and shallow rock had the greatest representation in the survey. In general, citizen science projects had more than 25 data collectors, been in existence for over 10 years, and collected data at multiple times per year.

The following organizations reported conducting one or more projects with a citizen science component:

- Cabrillo National Monument
- Cal Poly Pomona
- Channel Islands National Marine Sanctuary
- Channel Islands National Park
- Gray Whales Count
- Grunion Greeters
- Multi-Agency Rocky Intertidal Network
- Ocean Sanctuaries
- PISCO
- Reef Environmental Education Foundation
- Reef Check California
- Santa Barbara Coastal Long Term Ecological Research Program

Volunteers

- Projects with volunteers
- Projects without volunteers

Data Collectors

- 1-10 people
- 11-25 people
- 26-50 people
- 51-100 people
- > 100 people

Project Duration

- 0-1 years
- 2-4 years
- 5-10 years
- > 10 years

Monitoring Frequency

- One time only
- Once every few years
- Once a year
- 2-4 times a year
- 11-100 times a year
- > 100 times a year
- Continuous

Bar chart categories (Number of projects):
- Sandy Beach
- Rocky Intertidal
- Soft-bottom Subtidal
- Kelp & Shallow Rock
- Mid-Depth Rock
- Deep
- Nearshore Pelagic
- Estuarine & Wetland
- Consumptive Uses
- Non-Consumptive Uses

Legend: 501c3 | Academic | Government | NGO | Private

Number of citizen-science projects by ecosystem and organization type. Source: South Coast Monitoring Survey (Oceanspaces/OST).

Want to get involved?

Contact one of the organizations mentioned in this snapshot, join the Citizen Science on OceanSpaces group,[11] or get in touch with your local MPA Collaborative.[12]

Colleen Wisniewski

About South Coast MPA Baseline Monitoring

California Ocean Science Trust, California Department of Fish and Wildlife (CDFW), California Ocean Protection Council (OPC), and California Sea Grant coordinated and collaborated in the implementation of baseline monitoring, which was funded by OPC. Results from this work will inform CDFW management recommendations to the California Fish and Game Commission from the first five years of MPA implementation in the region, anticipated in 2017. MPA monitoring results can also inform the management of fisheries, water quality, and climate change.

Footnotes

1. To learn more about baseline monitoring, visit: **oceanspaces.org/monitoring**
2. Jan Freiwald, Colleen Wisniewski. 2015. Reef Check California: Citizen Scientist monitoring of rocky reefs and kelp forests: Creating a baseline for California's South Coast. California Sea Grant. San Diego, CA 244pp. **goo.gl/N7aV5d**
3. Carol A. Blanchette, Peter T. Raimondi, Rani Gaddam, Jennifer Burnaford, Jayson Smith, David M. Hubbard, Jenifer E. Dugan, Jessica Altstatt, and Julie Bursek. 2015. Baseline Characterization of the Rocky Intertidal Ecosystems of the South Coast Study Region. California Sea Grant. San Diego, CA. 124pp. **bit.ly/1O7Mp67**
4. Jenifer E. Dugan, David M. Hubbard, Karina J. Nielsen, Jessica Altstatt, and Julie Bursek. 2015. Baseline Characterization of Sandy Beach Ecosystems along the South Coast of California. California Sea Grant. San Diego, CA. 134pp. **goo.gl/LCBkyv**
5. Kevin A. Hovel, Douglas J. Neilson, Ed Parnell. 2015. Baseline characterization of California spiny lobster *(Panulirus interruptus)* in South Coast marine protected areas. California Sea Grant. San Diego, CA 73pp. **goo.gl/DKySz1**
6. California Coastal Monitoring Dashboard: **tools.oceanspaces.org/dash#/welcome/**
7. Reef Check California: **oceanspaces.org/reef-check**
8. Long-term Monitoring Program for Experiential Training for Students: **oceanspaces.org/limpets**
9. San Diego Oceans Foundation: **oceanspaces.org/sdof**
10. MPA Watch: **goo.gl/c4Z6PP**
11. Citizen Science on OceanSpaces: **oceanspaces.org/citsci**
12. MPA Collaborative Network: **oceanspaces.org/mpacn**

CALIFORNIA OCEAN SCIENCE TRUST

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Sea Grant California

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