

# Sharing Key Findings & Highlights of MPA Baseline Monitoring in the South Coast: Summary of Key Themes – 2017 South Coast Community Gatherings & Small Group Discussions

March 20, San Diego | March 21, San Pedro | March 22, Malibu  
March 23, San Clemente | March 24, Santa Barbara

## BACKGROUND AND PURPOSE

The California Department of Fish and Wildlife (CDFW), the California Ocean Protection Council (OPC), and California Ocean Science Trust (OST) (the South Coast Management Team) held a series of community gatherings throughout the South Coast in March 2017. Members of the South Coast ocean community were invited to gather in an informal setting to learn about the status of monitoring inside and outside of [MPAs in the South Coast](#), including how baseline information will contribute to long-term monitoring and inform management. The gatherings provided participants with the opportunity to: discuss the recently released [State of the California South Coast](#) report, which provides a snapshot of local ecosystem features and ocean activities at or near the time of MPA implementation; engage with researchers, managers, citizen scientists, fishermen, and others involved in monitoring; and participate in decision making about our ocean. Ideas and feedback shared during the events will improve how information from baseline monitoring (Phase 1) is made available to the South Coast ocean community, including on [OceanSpaces](#), and help inform the statewide long-term MPA Monitoring Program (Phase 2).

Community gatherings were hosted at five locations throughout the region from March 20-24, 2017. Over 300 community members participated, representing a wide variety of ocean users, interests, and perspectives. This summary captures key themes expressed by those who attended the community gatherings, as well as input received during informal, small group discussions that the South Coast Management Team held with local tribal leaders, commercial and recreational fishermen, local governments, and others. These community gatherings and small group discussions allowed the South Coast Management Team to interact with community members in a variety of settings. Additional insights received via a [community questionnaire](#) are also reflected in this summary.

This key themes summary is available on the [South Coast State of the Region page on OceanSpaces](#), which offers access to all baseline information and products including the *State of the California South Coast* report and the South Coast Snapshot Series. This summary has also been distributed via the South Coast Key Communicators email list and the OceanSpaces e-newsletter, as well as highlighted via [CDFW Marine Management News](#).

The insight and feedback shared by members of the South Coast ocean community is organized into the following sections:

- Core Questions Asked Across Community Gatherings
- General Community Ideas, Comments, and Concerns
  - Baseline Monitoring Discussion
  - Baseline Information and MPA Management
  - Enforcement Activities
- Role of Local Partnerships and Collaboration
- Resources and Key Contacts

On April 27, 2017, the CDFW and OST presented the *State of the California South Coast* to the California Fish and Game Commission as part of the state's initial management review.

*This document was prepared by Ocean Science Trust and Strategic Earth Consulting, and reviewed by the California Department of Fish and Wildlife and the California Ocean Protection Council.*

## KEY THEMES SUMMARY

### Core Questions Asked Across Community Gatherings

1. What is baseline monitoring?
2. How has baseline monitoring been funded?
3. How far into the future will monitoring take place?
4. Will MPA regulations be changed or will MPAs be opened back up?

*Responses to these core questions have been integrated into the sections below.*

### General Community Ideas, Comments, and Concerns

#### **Baseline Monitoring Discussion**

- Participants expressed broad support for baseline monitoring efforts along the South Coast. There was specific interest expressed in understanding how the baseline information can be used to assess the potential effects of MPAs on fish, invertebrate species, and habitats.
  - Baseline information serves the important purpose of characterizing the ecological and socioeconomic conditions inside and outside MPAs near the time of MPA implementation, and provides a “benchmark” against which future changes can be measured. Because of the timing of baseline monitoring, we would not expect to see any effects of the MPA network at this stage.
  - The *State of the California South Coast* report and associated products summarize the breadth of information gathered during Phase 1, including abundance, size, and diversity of ecologically important fish, invertebrates and algal species across different habitats, and categorizes consumptive and non-consumptive uses of MPAs.
  - Looking ahead, this range of baseline information will inform the state’s approach to [statewide, long-term monitoring](#) (Phase 2), specifically the development of the Statewide MPA Monitoring Action Plan.
- Participants were interested if and when the MPAs would be removed.
  - The Marine Life Protection Act (MLPA) required the state to redesign a network of MPAs to protect marine populations and marine ecosystems, and restore depleted populations. The MLPA requires the state to manage the MPAs as a network and assess the performance of the redesigned network at meeting the [goals of the MLPA](#).
  - Monitoring projects conducted to-date show that we are beginning to see some responses for some fished species inside “old” MPAs that have been in effect for longer periods of time. In Northern Channel Island MPAs, for example, [researchers have](#) observed increases in fish biomass both inside and outside MPAs.
  - The state is looking beyond individual species, however, to consider how complete ecosystems are responding to the implementation of MPAs, which may take decades to fully understand. This does not mean that there will be no effect of MPAs on individuals, communities, populations, or ecosystems for decades; it means that understanding all the effects of MPAs will take time, especially those related to how the MPAs affect species and habitats outside protected areas.

- In the interim, the state will use adaptive management measures to respond to information as it becomes available. Working with community members, the state will identify and discuss results of monitoring projects and develop strategies for adaptively managing MPAs based on monitoring results.
- Participants were interested in understanding the long-term budget and plan for long-term monitoring extending beyond the projects included in the initial baseline assessment of the region.
  - California's MPA Monitoring Program is implemented in two phases: Phase 1 involves regional baseline monitoring, and Phase 2 focuses on statewide long-term monitoring.
  - Phase 1 efforts, described in the *State of the California South Coast* report, are part of a \$16 million voter-approved state investment in baseline monitoring statewide (\$4 million allocated per each of the state's four coastal regions), together with over \$1.2 million in matching funds from philanthropic and Federal sources.
  - For Phase 2, statewide long-term monitoring efforts, the state has committed an annual allotment of \$2.5 million from the General Fund to support long-term MPA monitoring statewide, together with matching funds from philanthropic and academic sources. Current spending builds on the broad community involvement established during Phase 1. Since 2016, the state investment in Phase 2 is currently supporting long-term data collection in rocky intertidal, kelp and shallow rock, and mid-depth rock ecosystems through projects that involve collaborations among academics, citizen scientists, and fishermen. An expanded program will be implemented in late 2018 after the release of the Statewide MPA Monitoring Action Plan through a competitive qualification and proposal process.
- Participants inquired how data were collected, analyzed, and compared across ecosystems and regions. There were questions about which organizations were tasked with collecting data, and what data were deemed important during these baseline assessments.
  - The *State of the California South Coast* report draws on data collected during Phase 1, from 2011-2013. Prior to this effort, many ongoing monitoring programs have been conducted in the region. Baseline data, however, differ from other monitoring programs because they specifically characterize ecosystem and socioeconomic conditions *as they relate to the state's network of MPAs at the time of implementation*, allowing managers to understand the status of ecosystems inside and outside of MPAs.
  - The baseline monitoring projects were developed in partnership with many different community groups, including professional scientists (e.g., academics, agency staff, non-profit staff), citizen scientists, fishermen, and more. Baseline project proposals were submitted in response to a request for proposals (RFP) and evaluated through a two-step peer review process before the final funded projects were selected.
  - CDFW is in the process of creating a Statewide MPA Monitoring Action Plan to guide long-term statewide MPA monitoring, which will be designed to ensure data are comparable across the state. The South Coast Management Team is committed to making sure interested community members know when future RFP, requests for qualifications (RFQ), or related processes are taking place.

- Participants were interested in how data were collected below 30m (deeper than recreational divers can observe).
  - One of the state-funded baseline projects involved [remotely operated vehicle \(ROV\) surveys](#) that were deployed below 30m (~100 ft) to obtain visual counts of marine species and habitats, with an emphasis on species that are ecologically and economically important.
- There was broad interest in learning how baseline data can provide insight into whether marine species and habitats have changed (i.e., improved/decreased or recovered/declined) since the establishment of MPAs.
  - Changes in fish populations and ecosystem function often occur on timescales longer than five years. Since the South Coast MPA network was established in 2012, the limited period in which MPA monitoring has occurred limits our ability to detect significant changes in fished populations to date. There is evidence, however, of increased size and abundance of some fish populations at older MPAs, such as those established at the northern Channel Islands in 2003. Observing these longer-term trends is one of the benefits of long-term monitoring efforts.
  - Numerous fishermen expressed concern that information illustrating the total number of Commercial Passenger Fishing Vessel (CPFV) trips from 1992-2015 included boats that travel to (and landings from) Mexico. CDFW clarified that the data presented during the gatherings (also found on page 28 of the *State of the California South Coast* report) do not include statistics from vessels that fished outside of California state waters. Several attendees observed there has been a sharp increase in CPFV activity in recent years, and MPA regulations have decreased the area available for recreational fishing.
- The fishing community expressed interest in understanding what impact fishing activities outside MPAs may be having on resources due to reduced available fishing area with no significant reduction in fishing effort. Additionally, there was interest in understanding how the military presence in the Southern California Bight area might impact MPA data (i.e., compaction of fishing effort due to military areas being closed to fishing).
- Several participants were interested in learning more about how baseline characterized kelp abundance. For example, in Santa Barbara on-the-water observations suggest declines in kelp coverage, which differ from peer-reviewed publications (not related to baseline monitoring) that suggested that kelp occurrence has remained relatively constant over time.
  - There were two state-funded baseline monitoring projects that studied kelp, one led by Reef Check California and the other by PISCO. Reef Check baseline data can be found on [OceanSpaces.org \(2011-2012\)](#), and their historical datasets (2006-present) can be found on the [Reef Check website](#). PISCO baseline data can be found on [OceanSpaces.org \(2011-2012\)](#), and their historical datasets (1999-present) can be found on the [PISCO website](#).
  - One additional baseline monitoring project, led by Ocean Imaging, evaluated kelp persistence in the South Coast. Researchers used CDFW's aerial imagery of kelp forests to assess change in kelp aerial extent/coverage over time. Data, maps, and the technical report for this project can be found on [OceanSpaces.org](#). This research revealed a high geographic variability in how kelp coverage has changed over time in the South Coast (see Appendix 1 of the [technical report](#)).

- Scientific studies are often constrained by resources (i.e., funding and staff capacity) and may only capture data over a short period of time, and often, which is the case for the paper in question, look at time periods prior to their publication and not current conditions. Seasonal or annual changes may dominate the findings and differ from changes on a longer time scale. Phase 2 of California's MPA Monitoring Program -- statewide, long-term monitoring -- will provide a longer time-series of MPA monitoring and will be less sensitive to short-term impacts than a single study or meta-analysis.
- There was interest in understanding how the toxicity of sediments in the Southern California Bight differs inside and outside of MPAs.
  - Because currents and rivers transport sediment and contribute to the deposition of toxic metals, differences in sediment toxicity inside and outside MPAs likely reflects the geographic location of MPAs (i.e., proximity to riverine inputs) and impacts of local oceanography (i.e., strength and direction of currents).
- Participants were interested in understanding why non-consumptive uses like tidepooling and the presence of dogs on the beach are also a part of baseline monitoring efforts.
  - Tidepool traffic can be quite high during peak seasons, and removing, disturbing, or damaging tidepool organisms could have a negative impact on the ecosystem. Similarly, dogs can disturb birds and other coastal organisms.
- Several participants were concerned about whether the collection of organisms for scientific research was having a negative impact on the efficacy of MPAs.
  - CDFW continues to work with the OPC's Science Advisory Team to develop an ecological impact assessment tool to identify potential cumulative impacts prior to issuing scientific collecting permits within MPAs.
- Participants inquired about ways to access the baseline data and stay informed of published results.
  - All of the data from baseline monitoring in the South Coast (and other MPA regions) can be accessed and downloaded on [OceanSpaces.org](http://OceanSpaces.org). In spring/summer 2017, a map-based data discovery tool will launch on OceanSpaces through which users can find and download MPA monitoring data and other data connected to the [DataONE data repository](#).
  - [MarineBIOS](#) -- a CDFW web portal -- has an interactive interface that shows MPAs and other marine managed areas.
  - A Fisheries Data Explorer will launch on [OceanSpaces](#) in spring/summer of 2017. It will allow interested users to visualize commercial and CPFV fisheries data statewide, including data from 1992-2014. All visualizations produced and data used to create them can be downloaded through the viewer. As an important note, individual fishing locations will be aggregated and data will be presented on available timescales.
  - OPC and CDFW are developing an open-access information management system that will connect MPA data with other data collected by the California Natural Resources Agency, such as fisheries data and water quality data. This system will have a map-based interface and be available to the public. A beta-version is scheduled to be launched early in 2018.
- Artificial reefs were highlighted by some participants as a way to provide fishing opportunities to consumptive users. There was also interest in whether data show that there are more fish or

invertebrates at artificial reefs. If so, community members suggested that artificial reefs could also support MPA implementation by providing new habitat for fish populations.

- CDFW will host [public meetings](#) to provide information on CDFW's role in the placement and management of artificial reefs in California, including laws and regulations; historical background; what the public should expect; and what CDFW needs to move forward with the potential placement of new artificial reefs in state waters.

### **Baseline Information and MPA Management**

- There was general interest in understanding how adaptive management will be applied to MPAs, and whether regulations will change based on the data and results of monitoring efforts.
  - MPA regulations have already undergone adaptive management amendments, with modifications to improve boundary accuracy, clarify and simplify take regulations, change MPA designations to align with original stakeholder intent, and more.
  - The [MLPA Master Plan for MPAs](#) defines a 10-year timescale for adaptive management, and a full review of network performance of MPAs. This timescale was modified from a 5-year timescale as current data on ecological responses to MPAs, including those from California, show that understanding the full suite of changes to marine ecosystems as required by the MLPA will take decades. Monitoring within Central Coast MPAs and northern Channel Island MPAs has shown that distinctions in fish species abundance and biomass inside versus outside MPAs are not readily observable until closer to 10-years after the date of implementation. In the interim, monitoring will be completed and reported out to the public regularly and the results will be used to inform adaptive management.
  - The Fish and Game Commission (FGC) has the legal authority to change regulations. If you would like the FGC to consider a regulatory change, please follow the directions [here](#) to submit a formal petition.
- There was interest in understanding how the South Coast Management Team and researchers chose specific fisheries and ecosystems for baseline monitoring efforts (e.g., spiny lobster and squid fisheries, sandy vs. rocky habitats, groundfish). Participants asked how marine mammals were considered as part of baseline monitoring.
  - The Management Team required researchers to focus on the metrics identified in the [South Coast MPA Monitoring Plan](#), which were developed through a series of workshops with regional experts, including academic scientists, fishermen, and others. The monitoring plan includes metrics across each of the ten "Ecosystem Features", including eight ecological features as well as consumptive and non-consumptive human uses.
  - Birds and marine mammals are generally considered within the *Nearshore Pelagic* ecosystem feature, which encompasses their primary foraging or nesting areas.
- Tribes and Native communities expressed interest in collaborating with the state, including funding of work based on tribal/indigenous traditional knowledge (T/ITK) to be further explored through statewide monitoring efforts and opportunities for co-management.

- In the North Coast, tribes are leading a [baseline monitoring project](#) to gather T/ITK, and several tribes are collaborating on three other baseline monitoring projects. This could be a model for statewide efforts as part of long-term monitoring.
- The fishing community was interested in understanding why fishing regulations have been implemented at many MPAs, versus other activities (e.g. surfing, jetskiing) that could be disruptive to fish populations.
  - CDFW acknowledged that the FGC is only able to regulate take, which has a direct impact on consumptive users. Also, since fishing is a known stressor for fish populations, fishing regulations are a key feature of MPAs.

### **Enforcement Activities**

- CDFW is responsible for implementing regulations related to the MLPA and is in the process of establishing a Marine Enforcement District, which will patrol California's state waters in support of all California fishing regulations, including but not limited to those associated with the MLPA.
  - [Cal-Tip](#) continues to be the best way for the ocean community to provide on-the-ground support for MPA enforcement. CDFW enforcement officers rely on engaged community members to help identify problem areas and possible infractions.

### **Outreach and Education Activities**

- OPC has provided additional funding for the design and installation of 195 signs throughout the state, including 66 within the South Coast, to educate and inform the public of MPA locations, regulations, and purpose. CDFW has also printed and distributed more than 200,00 guidebooks and brochures.
- Community members pointed out that buoys can be helpful markers of MPA boundaries when available.

### **Role of Local Partnerships and Collaboration**

- The [MPA Community Collaboratives](#) were identified as an effective way to share information, get involved, and connect with resource managers about MPAs. Participants at the Community Gatherings were encouraged to engage with their local MPA Collaborative. The South Coast Management Team also works with Key Communicators, local leaders in their respective fields/communities, to discuss how to best reach a wide range of audiences. OPC has funded a small grants program for the MPA Collaborative Network to support projects that improve compliance, enforcement, and understanding of MPAs.
- It was widely recognized that local citizen science programs such as [Reef Check California](#) are integral to the MPA data collection efforts throughout the South Coast and statewide. Local participation can help to educate community members about MPAs, and citizen scientists can act as liaisons with the public to share information about MPAs, including local monitoring activities.
  - Some participants questioned the rigor of data collected by citizen science groups, and expressed concern that there may not be adequate quality controls in place for data collected by citizen scientists to be accurate and useful.

- The South Coast Management Team recognizes the importance of ensuring that methods used and data produced through citizen science efforts are scientifically sound. This can be achieved through rigorous trainings and a certification process, in addition to rigorous data and metadata standards that are enforced across all data submitted, regardless of whether or not they are from citizen science programs
- Scientific peer review was completed on all projects, including all projects that involved citizen science, that were part of the baseline and this model will be continued for the long term monitoring.
- Community members asked about water quality monitoring within MPAs, given the high rainfall this year (e.g., Refugio Oil spill, runoff).
  - [Southern California Coastal Water Research Project \(SCCWRP\)](#) has been conducting regional monitoring within the Southern California Bight, including water quality monitoring, since 1994. More about how SCCWRP's work can inform MPA monitoring is available in the [Bight '13 contributed Snapshot report](#) on OceanSpaces.
  - [Southern California Coastal Ocean Observing System \(SCCOOS\)](#) collects oceanographic data and manages an ongoing Tijuana River monitoring program.
  - The [California Nevada Climate Applications Program \(CNAP\)](#) provides oceanographic and climate-related data.
- There was interest from the fishing community in whether baseline monitoring included information about the impacts of MPAs on consumptive users.
  - [One of the state-funded projects](#), which was led by Point 97/Ecotrust, involved assessing socioeconomic conditions, including both consumptive and non-consumptive uses. This project characterized spatial fishing patterns (commercial fishing and CPFV), the socioeconomic status of commercial fishermen, and initial spatial and economic changes following MPA implementation (commercial fishing and CPFV). It also provides a qualitative investigation into the impact of MPAs on commercial fishermen and the specific MPAs impacting commercial fisheries at the port and region scale.
  - In addition, CDFW collects fishery-dependent commercial landings data reported by vessel operators through the Commercial Fisheries Information System to characterize the status of commercial fishing, and fishery-dependent data on California's marine recreational fisheries to accurately estimate catch and effort for California's diverse recreational finfish fisheries statewide through the California Recreational Fishing Surveys (CRFS).
- There was expressed interest in how Tribes and Native communities can engage in MPA management, following examples set by North Coast MPA monitoring projects.
  - CDFW is continuing to explore how T/ITK and co-management with Tribes and Native communities can support long-term monitoring efforts.
- The fishing community expressed the importance of having fishermen involved in MPA monitoring and management, and wanted to understand how long-term monitoring will include their perspective and knowledge.
  - The [California spiny lobster study](#) was one South Coast state-funded collaborative research project that involved researchers and fishermen working together. [Results](#) from another collaborative fisheries project that involved fishermen in helping to catch, collect data, and

tag bass led by Brice Semmens (Scripps Institute of Oceanography) were incorporated into the *State of the California South Coast* report.

- OST developed a [report](#) that explores how fishermen’s knowledge and collaborations have been incorporated into MPA monitoring in the South Coast to-date and lessons learned across three case studies.
- The state has invested in long-term data collection in rocky intertidal, kelp and shallow rock, and mid-depth rock ecosystems through projects that involve collaborations among academics, citizen scientists, and fishermen.

## Resources and Key Contacts

*The following key resources are provided for community members to learn more about South Coast MPA monitoring:*

- OceanSpaces – A website and online community designed to bring together those who want to stay informed about MPA monitoring projects and results: <http://OceanSpaces.org>
- *State of the California South Coast* report -- A summary report that shares highlights and key findings from the initial baseline phase of MPA monitoring in the region: <http://OceanSpaces.org/scsotr>
- *South Coast Snapshot Series*- A series of short reports that summarize data collection efforts and key highlights from the nine state-funded baseline projects to create a ‘snapshot’ of current ecosystem conditions: <http://OceanSpaces.org/scsotr/snapshot-reports>
- California Department of Fish and Wildlife, Supplemental Reports to the State of the California South Coast Report: <http://oceanspaces.org/scsotr/resources>
- The California Monitoring Dashboard: A webpage summarizes the results of the South Coast Monitoring Survey: <http://OceanSpaces.org/south-coast-monitoring-survey-and-dashboard>
- Data collected as part of the South Coast state-funded baseline projects: <http://OceanSpaces.org/data>, SEARCH: South Coast
- California Department of Fish and Wildlife, South Coast MPA website: <https://www.wildlife.ca.gov/Conservation/Marine/MPAs/Network/Southern-California>
- California Department of Fish and Wildlife, MPA FAQs: <https://www.wildlife.ca.gov/Conservation/Marine/MPAs/FAQs>
- Community Gatherings PowerPoint presentations: <http://OceanSpaces.org/scsotr/community-engagement>

*Members of the South Coast ocean community are welcome to reach out to the South Coast Management Team with additional questions:*

**California Ocean Science Trust**

*For questions about MPA monitoring, and interests in sharing local knowledge to inform monitoring.*

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**Department of Fish and Wildlife**

*For questions about regulations, enforcement, and adaptive management of MPAs.*

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**Ocean Protection Council**

*For questions about policy and funding of the statewide MPA Management Program.*

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**California Sea Grant Program**

*For questions related to baseline program grant administration.*

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