

Sharing Results of MPA Baseline Monitoring in the North Central Coast: Summary of Key Themes – North Central Coast Community Gatherings

December 1, Gualala | December 2, Bodega Bay | December 3, Half Moon Bay

BACKGROUND AND PURPOSE

California Ocean Science Trust, in collaboration with the California Department of Fish and Wildlife and California Ocean Protection Council, held a series of community gatherings throughout the North Central Coast to share the results of the North Central Coast Marine Protected Area (MPA) Baseline Program, and other assessments from the first five years of MPA implementation in the region. Members of the North Central Coast ocean community were invited to gather in an informal setting to: learn about the recently released [State of the California North Central Coast](#) report, including how baseline results may be useful to community interests; provide insights on how to make the baseline results widely accessible to the local ocean community; and begin discussing monitoring activities beyond 2015, including opportunities for partnership building and broadening the knowledge base that informs MPA monitoring in the region. Ideas and feedback shared will improve how the baseline results are made available to the North Central Coast ocean community, including [OceanSpaces.org](#), as well as help inform long-term MPA monitoring in the region.

Community gatherings were hosted in Gualala, Bodega Bay, and Half Moon Bay the week of November 30, 2015. Over 120 community members representing a wide variety of ocean users, interests, and perspectives participated in the conversations.

This summary captures key themes expressed by those who attended the community gatherings, as well as input received during informal, small group discussions that Ocean Science Trust team members held, with members of North Central Coast tribes, commercial and recreational fishermen, state and federal agencies, and citizen science groups. These community gatherings and small group discussions allowed Ocean Science Trust to interact with community members in a variety of settings. Additional insights were received via a community questionnaire that was made available in hard copy during the gatherings as well as [online](#); that information is also reflected in this key themes summary.

This document is available on the [North Central Coast page](#) at [OceanSpaces.org](#) and has been circulated to Ocean Science Trust's North Central Coast email list. The North Central Coast page includes additional information about MPA monitoring in the region, including informational handouts, answers to frequently asked questions and program announcements, and is regularly updated.

The insights and feedback shared by members of the North Central Coast ocean community is organized into the following sections:

- Key Themes
 - General Community Ideas, Comments, and Concerns
 - Value of Local Partnerships and Collaboration
 - Remaining Engaged with the North Central Coast Ocean Community
 - Questions Asked by Community Members
- Resources and Key Contacts

KEY THEMES

General Community Ideas, Comments, and Concerns

Baseline Results Discussion

- Community members expressed broad interest in baseline MPA monitoring in the region, and specifically baseline results that are relevant to each North Central Coast community (e.g., Gualala, Bodega Bay, Half Moon Bay), MPA, priority species, etc. There was enthusiasm on the part of local community members that baseline data is readily available and accessible.
 - During the discussion, Ocean Science Trust shared that in many cases, the baseline MPA monitoring conducted in the North Central Coast was the first time information had ever been scientifically recorded from specific sites. For example, in some locations, researchers had yet to characterize the species found in beach habitats, and local citizen science groups played a key role in helping to collect beach data. While there are a few exceptions, generally there are very few historical datasets in the region.
- There was general understanding that the baseline period was designed to establish a benchmark upon which future changes inside and outside MPAs can be measured.
 - There was some concern expressed about continued lack of access to ocean resources, particularly to consumptive users. Participants were also interested in learning more about how monitoring will continue.
- Community members expressed broad interest in including information about large-scale environmental drivers, such as storms, El Niño, changes in climate, ocean acidification, etc. to inform interpretation of baseline (and long-term) MPA monitoring results. The baseline projects considered “environmental context” in their work (*see definition of “environmental context” below*).
- While there was a general interest to learn about the status all habitats and species in the region, some community members identified rocky intertidal, abalone, seabirds, marine mammals, sea stars, salmon, and beach habitats as priorities.
- There was interest in learning more about the increases in abalone densities seen in the Stornetta/Sea Lion Cove MPA, which appear to be primarily adult abalone (i.e., abalone over the legal size).
 - Community members inquired if the increase in abalone densities was a result of abalone moving from deeper to shallower waters and/or if abalone are emerging from hiding places within the MPA due to lack of predation (e.g., sea stars) or other factors. Are MPAs playing a role in protecting abalone populations?
 - There was interest in including additional reference sites as monitoring of abalone populations continues, which could increase our understanding of whether the increase in abalone populations is directly related to a decrease in fishing pressure.
- There was discussion about the connection between bird populations and MPAs.
 - Researchers have observed an almost 380% increase in Common Murres since 1980s, while Pelagic Cormorants have slightly declined. Seabird numbers have increased, and

while still early to tell, it appears as though MPAs are protecting seabirds' foraging habitat. About 98% of breeding seabirds in the region nest adjacent to MPAs.

- Community members were interested in seeing additional data on breeding birds in the region as part of MPA monitoring.
- Community members are interested in learning how baseline results further enhance local knowledge. For example, many local fishermen and beachgoers are already familiar with the differences in the amount of kelp wrack on pocket beaches than long beaches, as described by one of the baseline integration projects.
 - The discussion highlighted there are novel findings within the baseline project that may be of interest to the ocean community and help to develop a deeper understanding of locally familiar patterns. For example, the amount of wrack (washed up seaweed, plants, and animals) deposited on beaches was influenced a little bit by wind, waves, and the width of the beach -- but was most strongly driven by the distance to kelp beds, intertidal zones, and estuaries.
 - There has been little study on these ecosystem connections to date, and these types of research questions may now be asked in other regions (e.g., South Coast).
 - This example illustrates important connectivity between and across habitats and species. This information can help resource managers make more informed decisions about kelp management and help municipalities understand the importance of managing kelp wrack on their beaches, which is adaptive management in action.
 - It is important to consider how fishermen's and local knowledge (i.e., citizen scientists) can help to make stronger connections across habitats, species, etc.
- Recreational and commercial fishermen expressed an interest in working with Ocean Science Trust to design and implement collaborative research projects, as well as assist in interpreting the results of data collected. In general, there is an interest to build a stronger connection between fishermen and scientists.
 - Commercial urchin divers are interested in learning more about the increase in purple urchins within MPAs north of Bodega Bay, including exploring collaborative research opportunities to gain a stronger understanding of the connections to competition/predator relationships across abalone, sea stars and urchin, as well as the role of temperature on these invertebrate populations.
 - Recreational abalone divers are interested in monitoring abalone populations using a length-based spawning potential ratio, rather than only relying on density-dependent surveys.
 - The California Collaborative Fisheries Research Program was identified as a successful project that meaningfully engages fishermen in scientific research.
- There was interest expressed in strengthening the connection between the Marine Life Protection Act (MLPA) and the Marine Life Management Act (MLMA).
 - In the coming months, CDFW will lead a process to update the MLMA Master Plan. CDFW and its partners will be looking for ways to better connect fisheries management with MPA monitoring and management, and will be looking to the fishing community to help inform this discussion.

- Fishermen are looking for data and information to show that MPAs are helping increase harvest along with fish and invertebrate populations. There was interest in learning more about the health of rockfish populations, and specifically if MPAs are directly contributing to increases in rockfish populations.
- There was interest expressed to have the State of the Region report include details about how enforcement of MPAs is being conducted, including opportunities, challenges, and adaptations that may have been made to enforcement approaches. This type of reporting should also be considered as part of long-term monitoring and evaluation of the MPAs.
- A community member acknowledged the dedication and resources that local members of the North Central Coast ocean community—and throughout the state—put into informing the design of the MPA network, and highlighted the toll that the MPA planning process took to people’s livelihoods, especially those who volunteered large amounts of time to participate in the process.

Remaining Engaged With Members of the North Central Coast Ocean Community

- There was interest in improving how local community members can share on-the-ground observations with the appropriate organization or agency. For example, local tribes and other community members observed sea star wasting disease as early as 2006-7, but were unclear how to inform managers of the issue.
 - Various individuals discussed the importance of citizen observations helping to spotlight ecological and socioeconomic changes that are taking place locally. By gaining a better understanding of the breadth and scope of a specific issue like sea star wasting, we are able to better assess the overall health of an ecosystem.
 - Community members are encouraged to share what they are observing with Ocean Science Trust and CDFW; the OPC can also play a role in helping to make connections across agencies, as that’s helpful. (See “Resources and Key Contacts” below.)
- The North Central Coast ocean community was interested in passing along information about the baseline results to their friends and colleagues. They expressed interest in simple, interesting stories about baseline MPA monitoring that could be easily shared with members of their community. Local organization’s e-newsletters, social media platforms, docent trainings, etc. are important gateways to sharing baseline results.
- Members of the local community suggested a number of ways to maintain an open line of communication with Ocean Science Trust and MPA monitoring activities, including:
 - Address the uncertainty of the roles of OPC and CDFW in MPA management and monitoring. Information was provided clarifying those roles, and staff from those agencies expressed an interest in improving communications.
 - Provide a reference copy of the State of the Region report, [Regional Snapshot](#), and other support materials to schools, local libraries, and visitor centers through the region. It was suggested that Ocean Science Trust and its partners present the baseline results and/or spotlight specific baseline projects at local library’s “community presentations”.
 - Provide local tribes and tribal communities with copy of State of the Region report.

- *Note: Tribes and tribal communities throughout the North Central Coast were contacted in advance of the community gatherings and sent a hard copy of the report for reference.*
- Continue to utilize local newspapers and radio stations as a primary way to share information locally. A number of community members shared that they learned about the community gatherings via local media sources.
- Local community members are encouraged to share information they have learned through these community gatherings with their friends and family, as well as through community listservs/email lists that might be available.
- In December, an updated [MLPA Master Plan](#) was made available for public comment through January 28, 2016. North Central Coast community members were encouraged to review this document and provide input.
- Over the next year, Ocean Science Trust will be continuing to improve [OceanSpaces.org](#), and welcomes input and feedback on how to ensure relevant information is available and in a form that is easily accessible.
 - There was feedback shared that the search features on OceanSpaces could be enhanced to improve search functions for priority species (e.g., red abalone), and to access data and information that speaks to the health of its population, habitat, etc.

Value of Local Partnerships and Collaboration

- It was widely recognized that local citizen science programs such as [Beach Watch](#), [Reef Check](#), and Long-term Monitoring Program and Experiential Training for Students ([LiMPETS](#)) are integral to the MPA data collection efforts throughout the North Central Coast. Participants at the community gatherings who volunteer for Beach Watch and LiMPETS emphasized the importance of local participation and encouraged folks to join the 200+ citizens who help to collect scientifically sound data within beach and rocky intertidal habitats.
 - There was discussion about the importance of citizen science data being rigorously evaluated and vetted to ensure it can be comparable to data collected by academic scientists. Representatives from local citizen science groups agreed that this is extremely important, and these programs work in close collaboration with scientists to ensure high level of scientific rigor so that the data collected is useful.
 - Citizen scientists also play an important role in being visible inside and outside MPAs and can act as liaisons with the public to share information about MPAs, including local monitoring activities.
- [The Applied California Current Ecosystem Studies](#) (ACCESS) program conducts pelagic monitoring from Bodega Bay to Pacifica three times per year. This study works with recreational fishermen to track prey availability, water quality characteristics, etc.
- Ongoing conversations with tribes, fishermen, and other members of the local ocean community are essential to better understanding and interpreting baseline conditions and initial trends.

- Ocean Science Trust, CDFW, and community gathering participants expressed interest in working together to continue interpreting baseline results to help inform long-term monitoring priorities in the region.
- Ocean Science Trust and CDFW welcome the opportunity to speak with local tribes and tribal members, fishermen, and others who observe changes in fish populations, while maintaining confidentiality of conversations.
- The network of [MPA County Collaboratives](#) offers members of the North Central Coast ocean community an opportunity to come together to work on MPA-related projects, discuss issues or concerns, and access information about MPA implementation (monitoring, enforcement, outreach and education, etc.). The San Mateo MPA Collaborative attended a community gathering and stated that they welcome more participation from recreational and commercial fishermen or interested members of the community.
- During discussions about the results of the [North Central Coast Monitoring Survey](#), there was concern that all of the monitoring results available in the region may not be captured in Ocean Science Trust’s efforts. For example, Surfrider and Stewards of the Redwoods have been collecting information that might be useful as historical datasets. Additionally, monitoring has recently begun in Drakes Bay as a result of changes to aquaculture activities in the area.
 - Ocean Science Trust encouraged project principals to [complete the survey](#) to ensure the results are reflective of the monitoring activities taking place in the North Central Coast. Local community members who are interested in sharing their perspectives but do not lead a monitoring project are invited to complete a [community questionnaire](#).

Questions Asked by Community Members

The following are a sampling of the types of questions asked during the community gatherings. The questions are listed in the order asked across community gathering.

- What defines a priority species or fishery?
 - *Priority species and/or fisheries are determined by landings data, as well as information collected during baseline MPA monitoring ([Establishing a Spatial and Economic Baseline of Human Uses](#)) and direct conversations with the local ocean community including recreational and commercial fishermen.*
- What is “ex-vessel” value?
 - *The post-season adjusted price per pound for the first purchase of commercial harvest. The ex-vessel value is usually established by determining the average price for an individual species, harvested by a specific gear, in a specific area.*
- What is beach wrack?
 - *Beach wrack is organic material such as kelp and seagrass and its associated organisms that is deposited on the beach by surf, tides, and wind.*
- Were reference sites established outside of the MPAs for the eleven baseline projects?
 - *Yes. At the time the MPAs were established in late 2010, researchers identified and surveyed reference sites outside the MPAs, to monitor comparable sites inside and outside of MPAs, where possible.*

- How were marine mammals considered as part of the Baseline Program?
 - *Marine mammal haul-out sites were captured as part of the Beach Watch project. During the baseline period, data was collected primarily at sites south of Bodega Bay, however monitoring has continued beyond 2012 and added sites north to Point Arena including a number of bluffs in the northern part of the region.*
- What is “environmental context”?
 - *Environmental context considers the many oceanographic drivers that may influence an ecological habitat or species. This includes factors such as biochemical data (e.g., chlorophyll, dissolved oxygen) and physical data (e.g., current velocity, wave height, sea surface temperature), and atmospheric data (e.g., air temperature, precipitation, wind velocity). The Baseline Program took environmental context into account when conducting research and interpreting results.*
- How large an organization is Ocean Science Trust?
 - *Our interdisciplinary team of fifteen full time staff includes ecologists, oceanographers, social scientists, communications experts, and information technology specialists.*
- Does Ocean Science Trust know where all of the baseline data come from?
 - *Yes. There are over 20+ partners working on MPAs in the North Central Coast, and all of the technical reports from the Baseline Program were peer reviewed, and data are [publicly available](#) on OceanSpaces.*
- Are MPAs adaptively managed?
 - *Yes, the statewide MPA network is adaptively managed. This approach involves closely monitoring and evaluating outcomes, and re-evaluating and adjusting management decisions as more information is learned. Adaptive management of MPAs has been conducted since the MPAs were first implemented, and will continue into the next phase of MPA monitoring.*
- What funding is available for long-term MPA monitoring?
 - *Funding for Ocean Science Trust as a nonprofit organization is derived from state, federal, and philanthropic sources. In 2015, OPC secured an initial \$2.5M for statewide monitoring through the State's General Fund, in addition to an OPC authorization of up to \$3M in 2014. While we recognize there is a need for additional funding, this allocation of funds will make sure there is a consistent statewide program moving forward.*
- Did the Baseline Program include any monitoring of ocean debris or plastics?
 - *Not directly. However, a number of the citizen science programs involved in the Baseline Program monitor marine debris.*
- How does MPA monitoring consider sporadic events such as unexplained mortality of certain species or domoic acid outbreaks?
 - *The state can respond to these unexpected events with the \$2.5M of annual funding that has been allocated for long-term, statewide MPA monitoring.*

RESOURCES AND KEY CONTACTS

The following key resources are provided for community members to learn more about North Central Coast MPA monitoring and to stay connected with Ocean Science Trust:

- OceanSpaces – An online community designed to bring together those who want to stay informed about MPA monitoring projects and results: www.oceanspaces.org
- *State of the California North Central Coast: A Summary of the Marine Protected Area Monitoring Program 2010-2025*, a summary report that shares results from the North Central Coast MPA Baseline Monitoring Program: <http://oceanspaces.org/nccsotr>
- *North Central Coast Regional Snapshot*, presents a summary of the eleven state-funded baseline projects: <http://oceanspaces.org/sites/default/files/ncc-regional-snapshot.pdf>
- The California Monitoring Dashboard, which summarizes the results of the North Central Coast Monitoring Survey: <http://tools.oceanspaces.org/dash#/explore/ncc-monitoring>
- Data collected as part of the North Central Coast MPA Baseline Monitoring Program: <http://oceanspaces.org/data> SEARCH: North Central Coast
- North Central Coast region page, a place to stay informed about and involved in planning efforts for Central Coast MPA monitoring: <http://oceanspaces.org/monitoring/regions/north-central-coast>
- California Department of Fish and Wildlife, North Central Coast MPA website: <https://www.wildlife.ca.gov/Conservation/Marine/MPAs/Network/North-Central-California>
- Community Gatherings PowerPoint presentation: http://oceanspaces.org/sites/default/files/u1173/ncc_communitygatherings_final.pdf
- Sea Star Wasting Disease website, which provides an avenue to submit observations of sea star wasting: <http://seastarwasting.org>
- Local citizen science programs
 - Beach Watch <http://beachwatch.farallones.org>
 - LiMPETS (Long-Term Monitoring Program and Experiential Training for Students) <http://limpets.org>
 - Reef Check California <http://www.reefcheck.org/california/ca-overview>
- MPA County Collaboratives <http://mpacollaborative.org>
- Mobile MPA Application - <http://www.dfg.ca.gov/m/MPA/>

Members of the North Central Coast ocean community are welcome to reach out to the North Central Coast MPA Baseline Program partners.

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 network.

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