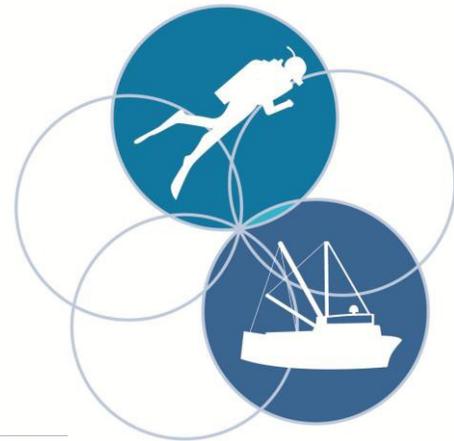
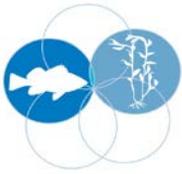


State of the **CALIFORNIA** Central Coast

Reflecting on the First 5 Years
of Marine Protected Area
Monitoring, Management, and
Partnership

Symposium Proceedings





Symposium Proceedings

Overview of the Symposium

In 2007, the Central Coast became the first of four coastal regions in which a network of 29 new and revised marine protected areas (MPAs) was implemented under the California Marine Life Protection Act (MLPA, Chapter 10.5 of the California Fish & Game Code, §2850-2863). The [Central Coast region](#) extends from Pigeon Point (San Mateo County) to Point Conception (Santa Barbara County), encompassing state waters seaward of the mean high tide line to three miles offshore including the entire Monterey Bay between Point Santa Cruz and Point Pinos. September 2012 marked the first 5-years of monitoring and management in the Central Coast MPAs. As recommended in the [MLPA Master Plan](#)¹, this presented an opportunity for resource-managers, policy-makers, scientists, and stakeholders to learn about the results from baseline MPA monitoring, share results from their own research, and discuss perspectives on MLPA implementation and adaptive management at a public symposium.

The public symposium was held February 27 - March 1, 2013 in Monterey, CA and brought together a diverse array of stakeholders from scientists, to representatives from all levels of government including tribes, to non-governmental organizations (NGOs), to fishermen. A total of 380 people attended the three-day symposium. The first day

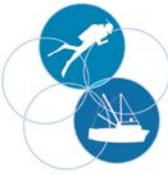
focused on “setting the scene” of the Central Coast MPAs by providing background information on the Central Coast region and sharing ecological and socioeconomic results gathered through the baseline MPA monitoring program. Opening remarks were provided by Fish and Game Commission President Michael Sutton and California Department of Fish and Wildlife (CDFW) Director Charlton Bonham. Natural Resources Secretary John Laird and the Honorable Fred Keeley delivered keynote speeches. The second day provided an opportunity for agencies, organizations and groups that conduct ocean monitoring and research in the Central Coast to share their work. Topics ranged widely from citizen science programs, to monitoring of invertebrate and fish populations, to statistical modeling, to water quality. The third and final day brought together key partners from state, federal, local and Tribal governments, NGOs, regional organizations and many other stakeholders to discuss lessons learned from the Central Coast and to look forward to successful ongoing MPA implementation.

The three-day symposium brought into focus the many partnerships and collaborative monitoring efforts that have yielded rigorous science; this collaborative effort has garnered broad community support of the science. The entire [symposium](#) was filmed and videos and abstracts of symposium presentations are available online at Oceanspaces.org. Additionally, baseline monitoring results are summarized in the report, “State of the California Central Coast:

¹ As a requirement of the MLPA, a Master Plan was developed to guide the adoption and implementation of MPAs in California. The Master Plan recommends regional MPA networks undergo a management review every 5 years.



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Results from Baseline Monitoring of Marine Protected Areas 2007 – 2012,” which is available as a PDF and is also being hosted as an [‘E-Book’](#) on OceanSpaces. The E-Book format allows people to begin with the summary results and then dive deeper into interactive graphics, videos and raw data. The raw data is also available for [download](#).

Baseline Monitoring

Baseline monitoring was launched in 2007 in the Central Coast region. With the support of The Ocean Protection Council (OPC), and through a request for proposals and a competitive review process administered by California Sea Grant, five projects were selected to collect socioeconomic and ecological data. In addition, an ongoing citizen-science program, ReefCheck California, and CDFW’s remotely operated vehicle (ROV) program joined the baseline program collaboration. In 2011, with additional OPC support, up-to- date socioeconomic data were added to the baseline program. All ecological baseline projects monitored conditions inside MPAs and outside MPAs at associated reference sites. The eight baseline monitoring projects included:

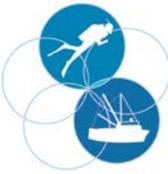
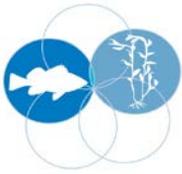
- Scientists from the University of California Santa Cruz (UCSC) and the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO) surveyed rocky intertidal ecosystems to quantify invertebrates and algae.
- Scientists from the UCSC and PISCO surveyed kelp forest ecosystems with SCUBA to quantify fish, invertebrates and algae.
- Trained volunteer SCUBA divers from ReefCheck California surveyed kelp

forest ecosystems to collect data on fish, invertebrates, and algae.

- Scientists from Moss Landing Marine Labs (MLML), California Sea Grant, and CalPoly San Luis Obispo collected data on recreational and commercially important fish species in collaboration with commercial fishermen, charter boat captains, and volunteer recreational anglers.
- Scientists from DFW conducted remotely operated vehicle (ROV) surveys over rock habitats of mid- depth (30-100 m) ecosystems to document fish abundance, size, and species composition.
- Scientists from MLML, California Sea Grant, and NOAA National Marine Fisheries Service (NMFS) used a submersible to quantify and measure fish and invertebrates in mid-depth and deep water (> 100 m) ecosystems.
- Social scientists and economists led by Impact Assessment, Inc. compiled a socioeconomic baseline for evaluating the effects of the Central Coast MPAs on commercial and recreational fishing, as well as non- consumptive users.
- Social science researchers from Ecotrust conducted a socioeconomic survey and mapped the value of areas for commercial fisheries and the commercial passenger fishing vessel fleet (CPFV).

Key Findings from Baseline Monitoring

The baseline monitoring program provided a benchmark of ecological and socioeconomic conditions, inside and outside of MPAs, for evaluating future change. It also showed some initial ecological and socioeconomic changes in



the first 5 years following MPA implementation.

Each ecosystem in the Central Coast is characterized by distinct communities of marine plants, invertebrates and fishes. These communities are set against an intricate backdrop of variable geology, dynamic ocean conditions and complex human interactions. Specific key findings that emerged from the baseline monitoring projects included:

- Some species demonstrated early changes within the new MPAs. In rocky intertidal ecosystems black abalone and owl limpets increased in size relative to reference sites. In kelp forest ecosystems cabezon, lingcod, and certain rockfish species increased in abundance.
- Results from separate sets of surveys conducted by academic and citizen scientists revealed similar patterns of fish and invertebrate densities, as well as community types. Together, these programs can complement one another and collect data from a broader geographic range than either could alone.
- Indicator species were identified by researchers to inform long term monitoring.
- Older MPAs showed increases in size and abundance of economically important species, demonstrating the future potential of new MPAs. However, this change happens slowly and takes time.
- Commercial and recreational fishing industries are a complex interplay among environmental and economic conditions and the regulatory landscape. Some reported impacts from MPAs included

the loss of traditional fishing grounds and having to travel longer distances.

- Fishing continues to be an integral part of the Central Coast, and a shift in activities to research charters, dive trips and whale watching tours by the CPFV fleet, demonstrate adaptation and resilience in the local ocean economy.

Reflecting on MLPA Implementation: Management, Enforcement, Education & Outreach

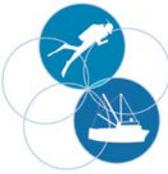
Throughout the symposium, speakers and panelists spoke of challenges and opportunities they had encountered during the first 5 years of monitoring in the MPAs. These ranged from enforcement challenges, to bridging the gap between science and management, to engaging the community with their local MPAs, to discussing tools for effectively governing MPAs now and into the future.

Enforcement in MPAs was discussed by members of CDFW's Law Enforcement Division during two different presentations. Enforcement challenges discussed included:

- Gaining support of county District Attorneys (DA) to make certain MPA violations are appropriately prosecuted. They noted that Monterey County has good support from the county DA.
- Balancing education and enforcement most people will comply with regulations if they are aware of them. Signage and outreach are important to increase knowledge and understanding of MPA boundaries and regulations.
- Engage community members in supporting MPA compliance through proper stewardship.



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- Ensuring adequate enforcement coverage for all MPAs.

The opportunity presented to bridge the gap between science and management was discussed in a panel by representatives from the Pew Environment Group, the Ocean Science Trust, the Fish and Game Commission (FGC) and the NOAA Office of National Marine Sanctuaries. Tools and recommended approaches included:

- Establish partnerships and collaborations between scientists, managers and stakeholders; all parties need to work together.
- Develop processes by which the science information needs of managers can be communicated to scientists to guide relevant data collection.
- Translate the science to the general public through education and outreach.
- Encourage thoughtful use of technology for sharing data and information, engage in adaptive management processes, and build a monitoring community (e.g., [MarineBIOS](#), [OceanSpaces](#)).

Engaging communities in their local MPAs was discussed in a panel by representatives from LiMPETs, Collaborative Fisheries Research West, ReefCheck California, Heal the Bay and the Monterey Bay Sanctuary Foundation, among many others. All of these groups are experienced in engaging the public in different ways, from citizen science monitoring programs, to K-12 education, to community outreach. Advice from these groups included:

- Education and outreach are needed to help the public understand the science from MPAs and increase their engagement in ocean stewardship.

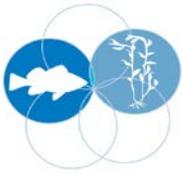
- Citizen science can be a valuable component of ongoing monitoring if projects are well-designed with partners who will use the data; involving the community in monitoring is a good way to get them engaged.
- Include fishermen as bona fide partners in monitoring; their knowledge of the water can complement monitoring efforts.
- Establish partnerships and collaborations between communities, scientists and managers; make sure all have a shared vision for what they would like to achieve.

Challenges and opportunities for effective MPA implementation was discussed in a panel by representatives from the FGC, CDFW, the Department of Parks and Recreation, the NOAA Office of National Marine Sanctuaries, the Santa Ynez Band of Chumash Indians, and the OPC. Challenges identified by the panel included:

- Balancing research needs and the cumulative effect of scientific collecting in MPAs.
- Engaging Tribal governments as partners.
- Agreement on priorities when engaging with other agencies.
- Addressing water quality issues in MPAs.
- Balancing ecosystem-based resources needs with human dimension needs; such as, maintenance of man-made infrastructure in MPAs.
- Continuing to invest in local efforts to move MPAs forward.

Opportunities identified by the panel included:

- Maintaining and developing new partnerships/collaborations for long term monitoring.



- Improved partnerships with California Tribes and incorporating traditional ecological knowledge (TEK) into MPA monitoring.
- Enhancing coordination and management efforts by agencies.
- Leveraging state funds with matching requirements for cost-effective monitoring.

Looking towards the future of the MPA network, a panel with representatives from OPC, CDFW, FGC, the State Water Resources Control Board, the InterTribal Sinkyone Wilderness Council, and the Resources Legacy Fund Foundation discussed tools for effective MPA implementation and offered several insights, including:

- The statewide and regional implementation framework currently under development will address the roles of state agencies, NGOs, and other stakeholders; it will provide a decision framework to ensure consistency in decision making; and it will identify priority needs so resources can be used effectively.
- Strong relationships among partners are key.
- Build partnerships between law enforcement, Tribal members and Tribal governments; utilize Tribal marine spatial planning; incorporate TEK into monitoring.
- Integrate water quality data with MPA monitoring data as an example of how MPA monitoring can serve multiple state agency mandates.
- Support collaborative stewardship opportunities with NGO communities.
- Conduct outreach to county DAs to ensure they follow through with MPA infractions.

- Identify long-term sustainable funding.

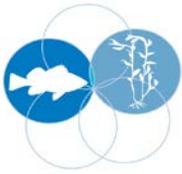
Looking Forward

Several overarching themes emerged from the presentations and panel discussions over the three day symposium. These themes included:

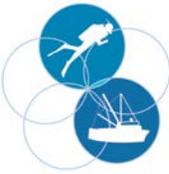
- MPAs are on track with the goals stated in the MLPA.
- A significant body of scientific knowledge has been generated that can usefully inform MPA management decisions.
- Invest in education and outreach to the public so they can help carry MPAs forward.
- Partnerships and collaboration will be the key to success; new partnerships and collaborations from baseline monitoring have built a foundation for long-term monitoring in the region that can inform adaptive management.

This information will be considered by CDFW as they develop recommendations for presentation to the FGC in late 2013.

The success of this symposium was made possible by the hard work and collaboration of many partners, and we thank everyone for their dedication and effort.



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Map of the Central Coast MPAs:



SMCA = state marine conservation area SMP = state marine park
 SMR = state marine reserve SMRMA = state marine recreational management area

For an interactive MPA map that highlights data collection efforts, please visit: <http://oceanspaces.org/explore>

For information on current Central Coast MPA regulations, please visit: http://www.dfg.ca.gov/marine/mpa/ccmpas_list.asp

Referenced hyperlinks:

Central Coast region. Pg.1:
http://www.dfg.ca.gov/marine/mpa/ccmpas_list.asp

MLPA Master Plan. Pg. 1:
<http://www.dfg.ca.gov/marine/mpa/masterplan.asp>

Symposium. Pg.1:
<http://oceanspaces.org/learn/state-california-central-coast-symposium>

Oceanspaces.org. Pg.1:
<http://oceanspaces.org/>

E-book. Pg.1:
<http://oceanspaces.org/learn/monitoring-results>

Download. Pg.1:
<http://oceanspaces.org/data>

MarineBIOS. Pg.5:
<http://www.dfg.ca.gov/marine/gis/viewer.asp>

Central Coast MPAs. Pg.7:
http://www.dfg.ca.gov/marine/mpa/ccmpas_list.asp

