Photo: Joe Hoyt, NOAA

# Lessons Learned from Implementation of California's Marine Protected Area Network

*Prepared by: Resources Legacy Fund | March 2020*

In 1999, the California legislature passed the Marine Life Protection Act (MLPA), requiring establishment of a statewide, science-based network of marine protected areas (MPAs), the first such effort in the United States. In 2004, with significant financial support from philanthropic donors, the non-profit organization Resources Legacy Fund (RLF) signed a formal agreement with the State of California to advance a phased strategy and public-private partnership for implementing the law, called the "Marine Life Protection Act Initiative" (MLPA Initiative).

From 2004 to 2012, the MLPA Initiative conducted an extensive public planning process to secure broad stakeholder input, rigorous scientific and policy guidance, and evaluation. Over a phased, eight-year planning effort, the state hosted community meetings, public workshops, and formal hearings through four distinct coastal regions to collect public input and expert opinion on a range of MPA network alternatives. In 2012, California completed formal adoption of a statewide network of 124 MPAs covering almost 17 percent of state waters, including 9.5 percent in no-take protection. California's MPA network includes all marine and estuarine habitat types in state waters (from zero to three nautical miles offshore), from sandy beaches and intertidal areas to deep water canyons and islands.

## Goals of the California Marine Life Protection Act

1) To protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems.

2) To help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.

3) To improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbance, and to manage these uses in a manner consistent with protecting biodiversity.

4) To protect marine natural heritage, including protection of representative and unique marine life habitats in California waters for their intrinsic value.

5) To ensure that California's MPAs have clearly defined objectives, effective management measures, and adequate enforcement, and are based on sound scientific guidelines.

6) To ensure that the state's MPAs are designed and managed, to the extent possible, as a network.

California has committed to partnership-based MPA management, focused on community stewardship and education, enforcement, policy and permitting, and scientific monitoring.

This document summarizes some of the key components and lessons learned from California's experience designing, launching, and implementing its statewide MPA network.

# Statutory and Political Mandate

Establishment of California's MPA network and its associated management program was required by state law. The MLPA Initiative committed the state to a time-bounded process to conduct MPA planning based on science and community input, and secured significant philanthropic match funding. The MLPA Initiative had consistent, high-level political support from top state officials including the Governor and Secretary for Natural Resources, both throughout the MPA planning process and over the first eight years of implementation, resulting in continued public investment in a wide range of MPA management programs and activities.

## *LESSONS LEARNED*

» **Legal and political support are critical.** The MLPA's statutory mandate and sustained political commitment from state officials were critical to ensuring that MPAs remained a priority over time, and that MPA planning stayed on track during periods when opposition was highest and state funding was constrained. The legal mandate and defined planning process helped to shift initial opposition into constructive engagement in MPA design.

» **Be clear about MPA goals.** Enshrining clear goals for the MPA network in state law provides stakeholders, scientists, and government officials with a common purpose to guide MPA design, biological and socioeconomic monitoring, and management activities.

# MPA Network Management Plan

California has taken a network-scale approach to MPA management rather than developing management plans for individual MPAs. The MLPA requires that California's MPAs "have clearly defined objectives, effective management measures, and adequate enforcement, and are based on sound scientific guidelines." To support fulfilment of these requirements, the law specified adoption of an MPA network "master plan" to guide both the design of the new network of MPAs, and formulation of programs for monitoring, research, evaluation, and enforcement based upon "best readily available scientific information."

In 2008, the California Fish and Game Commission, the lead regulatory authority for California MPAs, adopted a Draft Master Plan as a "living document" to guide regional development of MPA network proposals, including consideration of existing MPAs, to ensure fulfillment of the law's conservation goals. In 2016, the Commission adopted its current Master Plan for Marine Protected Areas, which focuses on four core components for long-term, statewide MPA management:

» Enforcement
» Monitoring, research and evaluation
» Partnership coordination, outreach and education
» Permitting and policy

The 2016 Master Plan for Marine Protected Areas also established a decadal process for comprehensive evaluation of MPA network performance relative to the core goals of the MLPA, relying on analysis of data gathered from statewide MPA monitoring efforts. State

*Photo: Steve Lonhart, NOAA*

agencies plan to complete the first decadal review of the performance of California's MPA network in 2022, which will be applied to consideration of future adaptive management actions that may be taken by the Fish and Game Commission.

### *LESSONS LEARNED*

» **MPA network management planning can help focus and guide design.** In California, development of the 2008 Draft Master Plan resulted in a template of science guidelines and basic procedural ground rules for MPA network design. In places where MPA implementation is not guided by statute, this step may be even more important to lay the groundwork for successful collaborative MPA network design and implementation.

» **An MPA network management plan can help avoid a 'mission accomplished' mindset.** California's 2016 Master Plan for Marine Protected Areas was adopted four years after completion of the MPA network, providing time for MPA managers to gather and address early implementation lessons learned. The document provides a cohesive overview of relevant information on MPA management and serves as the basis for ongoing MPA-related programs and activities. Furthermore, by instituting a decadal review and evaluation process for the MPA network, the 2016 Master Plan ensures ongoing consideration and refinement of MPA implementation efforts.

## MPA Network Designation

Prior to the adoption of the MLPA, California had established many individual MPAs over several decades. A comprehensive study of the state's MPAs published in 1997 found that nearly all had been designated in an ad hoc fashion, lacked clear goals and objectives, were providing little or no conservation benefit, and had a confusing array of 18 different classifications.

The MLPA was adopted to establish a functional network of scientifically-designed MPAs under a coordinated, statewide management program. A parallel state law required a simplified classification system, establishing three main types of MPAs—state marine reserve, state marine park, and state marine conservation area—each with different rules about the activities that may or may not be allowed. State marine reserves do not allow any type of fishing or extractive activities except scientific collecting under a permit, state marine parks prohibit commercial extraction, and state marine conservation areas restrict some types of commercial and/or recreational extraction while allowing others.

Initial attempts to design and implement MPA planning statewide along California's 1,100 miles of coastline proved unsuccessful given the cost, complexity, and geographic scale. The MLPA Initiative instead took a phased approach, dividing the state coastline into four geographic regions and conducting staggered two year planning processes between 2004 and 2012. MPAs were formally adopted and went into effect in each region as its planning stage was completed to minimize lag time between planning and implementation and reduce the initial cost and complexity of roll out.

### *LESSONS LEARNED*

» **Be realistic about geographic scale.** California's MPA network implementation succeeded only after it divided the coast into four phased planning regions. Region-by-region implementation better integrated local communities and stakeholders into the state's decision making process, simplified logistical and technical challenges, and spread costs over time. Importantly, the regional approach also recognized regional distinctions in biology, oceanography, culture, and economics (for example, planning for urban Southern California was very different than planning for the state's rural North Coast).

» **Keep MPA design simple.** Wherever possible, MPA boundaries should use easily recognizable landmarks and shoreline features, and be delineated

*Photo: Chad King, NOAA*

with straight lines and simple shapes. Use of MPAs that provide variable levels of protection can result in confusing regulations that are hard to follow, communicate, and enforce. To promote public understanding of MPA rules, adopt as few classifications as possible.

» **Ensure focus on science.** Without a clear commitment to following science guidelines, inevitable political pressures are likely to result in MPAs that are too small, too remote, or too permissive to meaningfully advance conservation goals. California's statewide scientific advisory bodies worked alongside regional stakeholder panels during their design phases, ensuring that regional MPA proposals followed science guidelines and fulfilled the MLPA's statutory requirements.

# Interagency Coordination and Partnerships

While primary responsibility for MPA management lies with the California Department of Fish and Wildlife (CDFW), the MLPA Master Plan notes that "no one agency or group has the authority, capacity, or resources to successfully manage the MPA network in isolation" and the state has committed to a partnership-based approach. In 2014, California adopted The California Collaborative Approach: Marine Protected Areas Partnership Plan which comprehensively mapped the interagency management and governance structure for its MPA network. The Partnership Plan—and supporting state law—also created the MPA Statewide Leadership Team, comprised of staff from all relevant state and federal agencies, California Tribes and Tribal governments, and non-profit partners. Led by the California Ocean Protection Council, the Leadership Team includes both a high-level Executive Committee that meets twice a year and a staff-level Working Group that meets at least quarterly, to complete tasks and projects identified in a publicly shared three-year work plan. The Leadership Team also conducts regular interagency coordination on current and emerging challenges, funding and policy opportunities, and any other issues affecting California MPAs.

*Photo: Steve Lonhart, NOAA*

One significant method of public engagement in California MPAs is through the MPA Collaborative Network, which empowers coastal communities to advance local MPA management and ocean stewardship. MPA Collaboratives are organized at the county level into 14 diverse working groups along the California coastline, providing local fora for Tribal representatives, non-profit organizations, fishermen, government staff, municipalities, academic institutions, scientists, teachers, and aquaria to work together on management of their county's MPAs. In 2017, the MPA Statewide Leadership Team signed a memorandum of understanding with co-chairs of each county collaborative to formalize their role in ongoing MPA management. In addition, the California Ocean Protection Council established a small grants program to fund local MPA programs and activities conducted by the Collaboratives.

## *LESSONS LEARNED*

» **Create formal structures for interagency coordination.** Jurisdictions related to marine resources are numerous and overlapping. Problem-solving requires regular communication and ongoing coordination and cooperation among agencies across local, state, federal, and Tribal governments. Creating a formal structure to convene these parties regularly and in-person—such as California's MPA Statewide Leadership Team—facilitates MPA implementation by building familiarity and trust, and institutionalizing long-term collaboration and coordination.

» **Leverage partnerships to build social capital.** Engagement of the private sector has helped California mobilize significant labor hours and institutional capacity from partner organizations with results that far exceed what the state could have accomplished on its own. Partnerships with non-profit and community organizations, industry groups, academic institutions, and Tribes may also help provide access to other funding sources, such as philanthropy and federal research grants, further leveraging state investments.

# Engagement with California Tribes and Tribal Governments

California's MPA network lies within traditional territories of coastal California Native American Tribes who have stewarded marine and coastal resources since time immemorial. The MLPA Master Plan and the MPA Partnership Plan identify Tribes as key partners in ongoing governance of the MPA network, and they prioritize consideration of traditional ecological knowledge in management. Tribes and Tribal organizations have engaged in baseline monitoring and built capacity related to MPA management. Tribal representatives also serve on MPA-related state advisory bodies. Despite these recent advancements, California remains in the very early stages of partnership with Tribes related to natural resource management, including MPA management.

## *LESSONS LEARNED*

» **Tribes are critical partners.** California's MPA program has been improved by the participation of Tribes and Tribal representatives as partners, thought leaders, and keepers of indigenous traditional knowledge.

» **Tribal collaboration and partnership enhance MPA management.** There are many opportunities to advance Tribal engagement and expertise in MPA management, including through consultation with government agencies, participation on formal MPA advisory bodies, and Tribal-led development of programs and activities.

» **Ensure inclusive decision-making.** Tribal governments and communities have their own protocols, processes, and timelines that must be observed and respected. Management should be collaboratively designed with Tribes from the start to ensure that it addresses Tribal priorities, and that gathered information is managed appropriately to address privacy concerns related to cultural practices.

# MPA Monitoring

The MLPA requires "monitoring, research and evaluation" in select MPAs to "facilitate adaptive management of MPAs and ensure that the system meets the [law's] goals." The MLPA also requires that California MPAs be designed and managed to function in concert with each other "as a network," meaning scientists must gather data and conduct analysis to evaluate the ecological interaction of MPAs as well as individual MPA performance.

The MLPA Initiative developed a two-phase monitoring program to fulfill these goals. Baseline monitoring conducted between 2007 and 2018 included 37 ecological, biological, and socioeconomic studies to characterize MPAs and human use patterns of sites network-wide. In 2018, California adopted the MPA Monitoring Action Plan and launched the ongoing, long-term phase of statewide monitoring. The Monitoring Action Plan explicitly links monitoring efforts to the goals of the MLPA by establishing specific scientific objectives, and by articulating a list of priority sites and specific research questions that scientists must address to qualify for state funding.

For more information specific to monitoring, see: Lessons Learned from California's Marine Protected Areas Monitoring Program.

## *LESSONS LEARNED*

» **MPA monitoring is a critical investment.** Systematic MPA monitoring improves management, is expected by stakeholders, and can support a range of marine resource management needs such as informing fisheries management and improving understanding of larger-scale ocean issues including climate change, water quality, and invasive species.

» **Long term monitoring should be linked to policy objectives.** Establishment of clear goals and objectives for an MPA network should precede

*Photo: PISCO*

design of a monitoring program. Monitoring efforts can then be structured to efficiently inform decision makers and the public of the performance of MPAs in meeting those goals.

# Outreach, Education and Public Engagement

Public outreach and education are core components of MPA network management. Expanding public awareness of MPAs supports success in several ways: it increases compliance with MPA rules, improving their ecological effectiveness and reducing enforcement costs; increases social benefits by enhancing educational experiences and by providing a venue for volunteerism; and expands public support for government investments in MPA management.

California engages diverse partners in outreach and education efforts through a variety of programs to maximize reach. State agency personnel lead numerous programs designed to inform the public about MPAs. Tribes, museums, aquaria, conservation and education organizations, ocean-related businesses, and other partners also engage in MPA outreach. CDFW developed guidelines for outreach materials and has a process for reviewing products developed by partners. This review is designed to provide consistency in messaging and approach, and to ensure that accurate MPA information is provided to the public.

Aproximately 30 percent of California MPAs overlap with coastal properties managed by the California Department of Parks and Recreation (California State Parks) which has trained docents and rangers who share information about MPAs with park visitors. California State Parks has developed an MPA-focused curriculum and incorporated it into the Parks Online Resources for Teachers and Students (PORTS) program, which provides virtual tours of protected lands and waters to students in classrooms throughout California including underserved and inland communities. The PORTS program engaged 74,000 California students in 2,400 real-time conversations with park rangers during the 2018/2019 school year.

## *LESSONS LEARNED*

» **Get the word out.** California's MPA designation process was long and involved, requiring extensive public outreach, education, and engagement across the state in order to develop and approve the final design. Sustaining this outreach has been critical to socializing MPA regulations, benefits, and management programs during the implementation phase

### Education and outreach products and programs developed through collaborative partnerships:

Photo: WILDCOAST

» Installation of interpretive and regulatory signs at public access points, marinas, and harbors statewide

» Distribution—online and in harbors, bait shops, dive shops, and fishing shows—of waterproof fishing guides, maps, and recreational brochures that explain and delineate MPAs

» Collaboration with aquaria and educational partners to create MPA-related displays, curricula, and materials such as coloring books and kids' activity books

» Collaboration with dive shops and kayak companies to promote MPAs as recreational destinations

» MPA Ambassador programs to train hoteliers, visitor bureaus, kayak guides, and others on the goals and rules of local MPAs

» Development and distribution of films and videos showcasing a range of MPA-related efforts

» Compilation of MPA education and outreach materials and programming within an online library, www.CaliforniaMPAs.org

Photo: Rob Brodman

» **Address equity.** MPA programming can provide a venue for broadening engagement and fostering new leaders in ocean conservation, and can be targeted to underserved communities to advance the equitable access to and enjoyment of nature. For example, the Chumash Tribal Marine Protected Area Education Program teaches school children from Southern California about the value of MPAs and ocean ecosystems with a focus on reaching Latino, Chumash, and politically and economically marginalized communities.

» **Integrate MPA outreach into existing programs.** Schools, aquaria, museums, ocean-related businesses, and other venues already connect the public to ocean and coastal resources, and may be able to integrate MPA information into ongoing work.

» **The messenger matters.** While government plays a vital role in MPA outreach, local civic organizations, fishing groups, educational institutions, Tribes, and community members may be best poised to identify and credibly inform specific audiences about MPAs. California's MPA Collaboratives, with their diverse participants in every coastal county, have proven instrumental in crafting and distributing effective, targeted MPA messages and outreach materials, as have partners with ties to the fishing, boating, and education communities.

# Enforcement

Primary responsibility for enforcing California's MPA regulations rests with the CDFW Law Enforcement Division. The Division's Marine Enforcement District is staffed by 45 officers and equipped with six large patrol vessels and 20 small boats; land-based officers are also engaged in MPA enforcement. Federal, state, and some local partners also assist with MPA enforcement. Some of these partner agencies have citation authority for certain MPA violations. Providing recurring and up-to-date training on MPA rules and boundaries to law enforcement officers across local, state, and federal agencies with relevant authority helps boost MPA compliance.

In recent years, the California legislature reformed prosecution and sentencing rules for MPA violations, allowing minor, first-time offenses to be ticketed with infractions (similar to a traffic ticket) while imposing substantially increased penalties for repeat offenders and for commercial fishermen or commercial passenger fishing vessel ("party boat") operators caught violating MPA regulations. California law also allows for suspension of licenses for commercial fishing businesses convicted of poaching in MPAs.

California has also worked with GPS technology firms such as Garmin and Navionics to integrate MPA boundaries into digital mapping technology, and CDFW developed a dedicated mobile website so that fishermen can readily access MPA information from their smartphones. MPA information is also included in regulatory booklets distributed to fishermen.

Finally, California is exploring technological innovations that could improve MPA enforcement, such as electronic records management to help wardens rapidly identify repeat offenders, and shore-based vessel observation systems using radar, vessel monitoring systems (VMS), and automated identification systems (AIS) to track vessels operating in MPAs. Such observations could potentially enable law enforcement to flag suspicious activity remotely in real time.

## *LESSONS LEARNED*

» **Partnership expands coverage.** Enforcement of MPA regulations is resource intensive, and can be difficult to adequately fund over large geographic areas. To improve enforcement coverage, California partners with federal, local, and other state agencies

Photo: WILDCOAST

with enforcement capacity, and sustains ongoing partnerships with community organizations that are heavily engaged in MPA outreach and education.

» **Provide for flexibility and proportionate penalties.** MPA violators are diverse, from uninformed anglers to profit-focused, intentional poachers. Enforcement officers need a broad suite of enforcement tools to ensure a legal response that is both proportionate and effective in deterring intentional and repeat offenses.

» **Learn and adapt.** California has responded to lessons learned from the first years of MPA implementation by refining both law and policy for enforcement to improve overall effectiveness, adopting innovative technologies, and building institutional knowledge within the state's judiciary system.

# MPA Network Financing

California has both invested significant public funds and relied upon formal partnership with philanthropy to help support a range of MPA planning and management needs. The eight-year MPA planning effort relied on approximately $18.5 million in public funding and $19.5 million in philanthropic match. These funds helped pay for integration of science and policy analysis from independent experts, hosting and facilitation of public meetings, public outreach and education, data and mapping support, expanded stakeholder engagement through travel grants and stipends, and many other forms of assistance.

MPA management costs in California total over $10 million annually spread across multiple agencies and are supported by a range of general funds, bond funding, and special funds such as fees generated from issuance of environmental vehicle license plates and charged to coastal power plants to offset their impacts on the marine environment. Philanthropic foundations also contribute approximately $3-4 million annually to support a range of MPA related programs.

## *LESSONS LEARNED*

» **If government is committed to implementation, philanthropy can fill key gaps.** In formal memoranda of understanding with philanthropic funders, the State of California committed to establish an MPA network. During the MPA planning phase, the state's commitment mobilized philanthropic resources to fill gaps that the state could not fund due to administrative and legal constraints, such as travel grants to support stakeholder participation and the convening of expert panels to evaluate MPA proposals.

» **Develop diverse funding sources.** Successful MPA network implementation can yield a broad range of social and conservation benefits. MPA network planners should explore diverse funding options among local, state or provincial, federal, and philanthropic sources which may align with successful MPA implementation. For example, fisheries agencies may contribute to the costs of scientific monitoring and educational institutions may support MPA outreach programs.

*Photo: Robert Schwemmer, NOAA*

# Conclusion

As California nears the milestone of its first decade of MPA network implementation, valuable new lessons continue to emerge that can be applied both to improve its own efforts and to inform MPA managers around the world. As the impacts of climate change on ocean ecosystems become more dire, there is also a growing interest in understanding how MPAs may help build resilience. Ensuring California's MPA network is effectively managed is critical to both meeting the goals of the Marine Life Protection Act itself and to ensuring the state's MPAs contribute to a healthy and abundant ocean.

# Additional Resources


Ocean Protection Council. The California Collaborative Approach: Marine Protected Area Partnership Plan. 2014.

California Department of Fish and Wildlife. Marine Life Protection Act Master Plan for MPAs, Revised Draft. 2008.

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*Nature United, the Canadian affiliate of The Nature Conservancy, commissioned Resources Legacy Fund, a non-profit organization based in California, to prepare a document summarizing lessons learned from the development and operation of the State of California's management program for its statewide marine protected area (MPA) network. This document was prepared by synthesizing available literature.*


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