



Informational Item
September 10, 2024

Item 9a

Information Item:
**Advancing Human Dimensions Research and Community Science in
the Management of California's MPA Network**

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Location: Statewide

Strategic Plan Goals and Objectives:

Goal 2: Advance Equity Across Ocean and Coastal Policies and Actions; Objective 2.3: Improve Coastal Access. Goal 3: Enhance Coastal and Marine Biodiversity; Objective 3.1: Protect and Restore Coastal and Marine Ecosystems.

Executive Summary:

The [2023 Marine Protected Area \(MPA\) Decadal Management Review](#) (DMR) issued [28 priority recommendations](#) to advance adaptive management of the MPA Network. In August 2024, the California Department of Fish and Wildlife (CDFW) presented an [update on their progress](#) to implement these recommendations to the California Fish and Game Commission (FGC). Since the release of these priority recommendations, OPC staff have worked closely with state and external partners on supporting tribal stewardship, advancing critical monitoring priorities, and assessing proposed changes to the MPA Network. However, efforts are needed to address several DMR recommendations, including recommendation 12 to improve understanding of human uses (“human dimensions”) of MPAs and recommendation 14 to develop a comprehensive community science strategy for ongoing monitoring of the Network.

To advance DMR recommendation 12, OPC will convene a Human Dimensions Working Group to develop social science research priorities that will enhance adaptive management, equitable engagement, and compliance across the Network. This OPC-led Working Group will build upon preliminary research topics and recommendations outlined in the [Decadal Evaluation Working Group \(DEWG\) Report](#). The Working Group, in collaboration with OPC and partners at CDFW and FGC, will provide comprehensive guidelines for social science in MPA monitoring and evaluation,

organized into a Human Dimensions Research Agenda to be implemented in the next phase of MPA monitoring investments.

In tandem, OPC will work in close collaboration with CDFW towards achieving DMR recommendation 14 by engaging with agency and external partners to co-develop a Community Science Strategy for MPAs. Developing the Strategy will create opportunities for coordination, emphasize the specific benefits of community science, and articulate pathways to integrate community science with other forms of monitoring. Together, both actions will further Goals 2 and 3 of the MLPA and improve adaptive MPA management for ecological and social outcomes.

Background

Guided by the [MPA Monitoring Action Plan](#), OPC has committed more than \$30 million to improve the state of science and understanding of how the MPA Network is performing.^{1,2,3,4} This funding has been distributed across the four core management pillars of the Network: 1) Outreach and Education; 2) Policy and Permitting; 3) Enforcement and Compliance; and 4) Research and Monitoring. Progress under each of these pillars was reflected in the 2023 [MPA Decadal Management Review \(DMR\)](#), which demonstrated that MPAs are helping to conserve California’s unique coastal and marine biodiversity. The DMR and [scientific guidance](#) for MPA evaluation by the Decadal Evaluation Working Group (DEWG) also revealed critical knowledge gaps in the “human dimensions of MPA performance,” a broad term that encompasses the myriad of ways humans engage with the coast and ocean within and around the MPA Network.

Understanding the breadth and depth of the human relationship with California’s MPA Network is essential to advancing adaptive management and balancing both conservation objectives and social outcomes of the Network. [OPC-funded research](#)^{5,6} has helped explore the interactions of California’s diverse communities with MPAs, in particular highlighting how targeted outreach and education can improve human engagement with MPAs. Cumulatively, these studies stress how supporting social science can help strengthen both access to the MPA Network and stewardship opportunities for ocean users.

1 [OPC 2019 staff recommendation for initial MPA long-term monitoring funding](#).

2 [OPC 2019 staff recommendation for initial monitoring and assessment of estuarine MPAs](#).

3 [OPC 2022 staff recommendation for long-term monitoring of MPA habitats in 2023](#).

4 [OPC 2023 staff recommendation for long-term monitoring of MPA habitats in 2024-2026](#).

5 [OPC 2022 staff recommendation to increase MPA outreach and education products statewide](#).

6 [OPC 2022 staff recommendation for expanding MPA outreach, education and compliance efforts](#).

In addition to supporting thriving ecosystems, the MPA Network plays an important role in advancing OPC’s priorities related to access and community engagement through outreach, education, and citizen engagement in monitoring. Ongoing OPC support^{3,4,7} for the California Cooperative Fisheries Research Program (CCFRP) demonstrates how community-driven science can fill critical knowledge gaps, engage ocean users (e.g., fishing communities) in environmental monitoring, and change user perceptions of MPAs. Intertidal monitoring led by the California Academy of Sciences⁸ and kelp forest surveys conducted by Reef Check⁹ divers are other examples of volunteer-driven community science contributing to the robust evidence of the MPA Network delivering ecological benefits while also providing an [important link](#) between the public and the MPA Network.

Project Descriptions

The [DEWG Report](#) provides detailed recommendations consistent with core goals of the Marine Life Protection Act (MLPA) on how to advance understanding of human uses of the ocean, including the convening of expert working groups to help direct research and answer pressing management questions. In collaboration with CDFW, FGC, and other state, federal, and external partners, OPC staff is undertaking the following efforts to improve the current and future function of the MPA Network for both nature and people.

Human Dimensions Research Agenda

Integrating social science into the monitoring and evaluation of the Network will enable assessments of the Network’s impact on social outcomes, enhance engagement between managers and ocean users, and improve regulatory compliance. Building on recommendations from the DEWG Report and DMR Recommendation 12, OPC will work with CDFW and FGC to convene and facilitate a Working Group of social science experts to develop a Human Dimensions Research Agenda that includes a list of prioritized research questions, information needs, and recommendations for future monitoring efforts focused on the human uses, benefits, and impacts of MPA performance.

The current phase of this work has focused on reviewing past recommendations from resources like the DEWG Report. Initial topics to cover in this future working group include:

7 [OPC 2021 staff recommendation to support CCFRP as part of MPA long-term monitoring.](#)

8 [OPC 2021 staff informational item on the upcoming Decadal Management Review.](#)

9 [OPC 2019 staff recommendation for long-term MPA monitoring projects.](#)

- **Definitions and context setting:** Guidance on definitions, contextualizing past research, and outlining human-ocean relationships in California with a focus on equity concerns.
- **Social Dimensions:** Surveying demographic characteristics of California ocean users and understanding differences in public awareness about and engagement with MPAs.
- **Economic Dimensions:** Characterizing ocean use patterns and reviewing approaches of non-market valuation for non-consumptive uses.
- **Cultural Dimensions:** Identifying opportunities to co-develop projects with traditional and local knowledge holders, assessing changes in access to sites of historical/cultural/spiritual significance, and evaluating changes in ability to practice historical and traditional uses due to both management and environmental (i.e., degradation, climate change) factors.
- **Governance Dimensions:** Assessing how different groups engage in coast and ocean management, leveraging data from MPA enforcement efforts to enhance outreach and regulatory compliance, and identifying opportunities to increase participation of underrepresented ocean users in public decision-making processes.

Next steps for this work will be for OPC staff to work closely with CDFW and FGC staff to establish this group of interdisciplinary experts with backgrounds in social sciences, including but not limited to economics, environmental justice, and public policy. Staff anticipate convening the Working Group before the end of 2024 and expect completion of all deliverables within one year.

Community Science Strategy

Community science has played a prominent role in MPA monitoring to date. Community science programs directly engage communities in coast and ocean monitoring, improving MPA evaluation efforts and enhancing diversity and equity in MPA management. However, [recommendations from community science leaders](#) indicate several challenges that hinder community science reaching its full potential in MPA management.

To address these concerns, the DMR called for the development of a Community Science Strategy (recommendation 14) to set guidelines and expectations for collaborative work between managers, academic researchers, and community science organizations that enable effective, equitable coordination and engagement opportunities in MPA monitoring and management.

On August 8, 2024, OPC met with state, federal, and community science practitioners to discuss early goals for the Community Science Strategy, which included:

- **Enhanced Coordination:** 1) Clarify the role of community science organizations in monitoring and management, and 2) Facilitate collaboration among community science organizations.

- **Building Capacity:** 1) Support the growth and impact of community science organizations, and 2) Enhance public outreach and engagement.

Next steps for this work include OPC’s continued outreach to key partners and communities to shape the strategy’s scope and to co-design its development and implementation process. A public process is anticipated to take place throughout 2025, with an anticipated release date of December 2025.

Equity and Environmental Justice Considerations

Project outcomes will improve management of MPAs, many of which are located in close proximity to and utilized by members of communities burdened by environmental and social injustice. Moreover, many of the habitats contained within MPAs provide needed ecological benefits that in turn improve the well-being of nearby human communities. For example, rocky intertidal habitats provide accessible opportunities for the public to observe marine life, protect against shoreline erosion, and harbor harvested species.

Implementing the MPA Decadal Management Review recommendations, including the development of a Human Dimensions Research Agenda and Community Science Strategy, will specifically advance several key objectives of [OPC’s Equity Plan](#) by directly engaging underserved communities in coast and ocean stewardship and ensuring equity concerns are reflected in MPA research priorities: Goal 1 (Establish and implement more equitable and sustainable community engagement and funding); Goal 3 (Lead equitable ocean and coastal policymaking in California); and Goal 4 (Intentional investments in research and monitoring that value and integrate broader knowledge sources).