

Foreword

Climate Resilience and California's MPA Network
Science Guidance for Evaluating California's MPA Network



In June 2021, two expert working groups of the Ocean Protection Council Science Advisory Team (OPC SAT) released two parallel scientific reports that will inform ongoing management of California's marine protected area (MPA) network: *Climate Resilience and California's Marine Protected Area Network* and *Science Guidance for Evaluating California's Marine Protected Area Network*. These OPC SAT working groups were convened by Ocean Science Trust in partnership with the Ocean Protection Council, California Department of Fish and Wildlife and the California Fish and Game Commission. The recommendations and approaches presented in these reports provide critical guidance through a portfolio of options for the State to support informed management and evaluation of the MPA network for the first decadal management review and beyond, based on the best available science related to MPAs and climate change. This guidance will also help the State prioritize investments and provide opportunities to leverage external partner resources. The reports are the culmination of an immense amount of work over the past three years by scientific experts and the Ocean Science Trust to compile, review and disseminate knowledge pertaining to MPA performance and climate resilience. The creation of these reports highlights the many partnerships needed to cohesively inform and manage California's MPAs and exemplifies the level of commitment of scientific partners to the well-informed management of the MPA network.

Background

California's coast and ocean are as important to our culture as they are to our economy; a healthy and vibrant coast and ocean are vital for a thriving California. In that spirit, the [Marine Life Protection Act of 1999](#)¹ (MLPA) set forth the intention of redesigning a statewide network of marine protected areas (MPAs) to protect the integrity of marine ecosystems, rebuild depleted marine life populations, and improve ocean health. The resulting network of 124 MPAs and 14 special closures was completed in 2012 and will undergo its first decadal review in December 2022.

Leading up to the review, two working groups of the Ocean Protection Council Science Advisory Team were convened, both to explore the role of California's MPA network in imparting climate resilience and to develop scientific guidance in supporting the State's first decadal management review of the MPA network and [MPA Management Program](#)². Each working group enlisted a team of interdisciplinary scientists with expertise in MPA science, marine ecology, population and community ecology, ecological modeling, anthropology, marine resource management, fisheries science, oceanography, and climate science.

¹ www.leginfo.ca.gov/faces/codes_displayText.xhtml?lawCode=FGC&division=3.&title=&part=&chapter=10.5.&article=

² www.wildlife.ca.gov/Conservation/Marine/MPAs/Management



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The first working group was [tasked](#)³ to develop a scientific guidance document that details actionable recommendations to inform how California's MPA network could be assessed and used as a tool to provide ecological and societal resilience to climate change. The guidance and recommendations include:

- A definition of climate resilience for California's MPA network;
- A description of the current scientific understanding of the mechanisms through which MPAs and MPA networks could provide climate resilience;
- A list of quantifiable, tractable scientific questions and associated methods that could reasonably be used to assess the performance of California's MPA network in the context of climate change; and
- Science, policy, and management recommendations to support a more climate-resilient MPA network.

Building on the foundation set forth in California's MPA Monitoring Action Plan (Action Plan), the second working group was tasked with translating the goals of the MLPA into scientific questions and approaches, and refining Action Plan performance objectives to inform the first statewide evaluation of the MPA network. Specifically, the working group was [charged](#)⁴ to develop a report that identifies:

- A list of quantitative scientific questions that can reasonably be assessed at the 2022 management review and in future decadal evaluations, informed by Appendix B of the Action Plan;
- Scientific definitions of selected terms in the MLPA;
- Methods for integrating baseline MPA monitoring, long-term MPA monitoring, and other available data streams into informative analytical products;
- Appropriate approaches for answering network-wide evaluation questions; and
- Significant gaps in our understanding of MPA performance in California and recommendations on monitoring approaches to fill those gaps.

³ www.oceansciencetrust.org/wp-content/uploads/2019/12/MPAs-and-Climate-Working-Group-Charter-FINAL11.21.19.pdf

⁴ www.live-oceansciencetrust.pantheonsite.io/wp-content/uploads/2019/08/MPAs_-_Decadal-Review-WG-charter_Final1.pdf

