Decadal Management Review: Appendix B
Science Guidance

**CALIFORNIA
MARINE
PROTECTED
AREAS**

About this Document

The Decadal Management Review (Review) includes available sources of information about the marine protected area (MPA) Network. This Appendix contains links to state-funded long-term MPA monitoring and modeling project reports. Links to additional resources associated with the long-term MPA monitoring projects are also included.

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Long-term MPA Monitoring

The Review is informed by multiple state-funded MPA monitoring projects. Statewide long-term monitoring builds on the knowledge, capacity, and needs informed by regional baseline monitoring and continues data collection in prioritized ecosystems and human uses.

1. Sandy Beach and Surf Zone Ecosystems

Sandy beaches and surf zones are intensely used for recreation and are vitally important to California's coastal economies. These dynamic ecosystems at the boundary of land and sea also support a diversity of animals, including fish, invertebrates, and birds. To evaluate responses of these beach and surf zone ecosystems to MPAs, researchers surveyed surf zone fish, birds, wrack, human use, and surf zone and beach physical characteristics at pairs of MPA and carefully matched reference sites.

Photo credit – A. Van Diggelen, CDFW

- California Sea Grant Project Description and Final Report

2. Rocky Intertidal Ecosystems

California's rocky intertidal habitats are rare, but highly important to the state in terms of biodiversity and recreational, cultural, and economic value. However, their location makes them susceptible to impacts from a myriad of anthropogenic sources (e.g., trampling by visitors) and climate change (e.g., sea level rise). The research team conducted two different types of surveys, one annual survey that revisited established monitoring plots, and a second detailed biodiversity survey that occurs every 3-4years. Both survey datasets complement each other and enabled researchers to understand both the size and the scope of changes in the intertidal habitats.

Photo credit – A. Van Diggelen, CDFW

- California Sea Grant Project Description and Final Report
- Project Website – visualize the data

3. *Kelp Forest Ecosystems*

Kelp forests and shallow rocky reefs represent some of California's most iconic nearshore marine ecosystems. They support ecologically, economically, and culturally important native species and provide valuable ecosystem services including tourism and nearshore recreational and commercial fisheries. This project combined historical kelp forest and environmental data with new data to assess trends in kelp forest and shallow rocky reef communities.

Photo credit – A. Van Diggelen, CDFW

- [California Sea Grant Project Description and Final Report](#)

4. *California Collaborative Fisheries Research Program*

The California Collaborative Fisheries Research Program (CCRFP) is a diverse partnership of volunteer anglers, boat captains, scientists, nongovernmental organizations, and charter companies interested in promoting sustainable fisheries. CCFRP uses standardized fishing gear and sampling protocols to catch, measure, tag, and release fish caught inside and outside of MPAs, and produces data about the abundance, size, biomass, diversity, and movement patterns of fishes in nearshore waters.

Photo credit – A. Van Diggelen, CDFW

- [California Sea Grant Project Description and Final Report](#)
- [Program Website](#)

5. *Mid-depth Rock Ecosystems*

Rocky habitats deeper than approximately 98 feet (30 meters) represent at least 75% of all marine habitats in California state waters by area and support a high diversity of ecologically and economically important fish and invertebrate species. Due to the difficulties associated with surveying species in deeper water, less is known about these habitats than those in shallow waters. The research team analyzed survey data collected via remotely operated vehicle transects, human occupied vehicle transects, tethered video lander surveys, and baited video lander surveys to evaluate differences in marine fishes and invertebrates inside and outside of California MPAs.

Photo credit – A. Van Diggelen, CDFW

- [California Sea Grant Project Description and Final Report](#)

6. Integrated Ocean Observing Systems

MPAs face many pressures which, compounded with regional and temporal variations, can make monitoring their effectiveness difficult for resource managers. To account for environmental stressors, the research team created a new California MPA Dashboard, which streamlines complex environmental and biological data and provides up-to-date information to help researchers, managers, and decision makers assess MPAs from regional to statewide scales.

- California Sea Grant Project Description and Final Report
- California Ocean Observing Systems Data Portal

Photo credit –Coastal Data Information Program

7. Fishing Community Well-being

Understanding the impacts and effects of MPAs on California's coastal communities is challenging due to the complex interplay between people and coastal ecosystems. The project team gathered data on port community well-being and attitudes and perceptions of MPA impacts to establish an understanding of stakeholder sentiments that will be used to measure future changes and fishing effort for pre/post MPA evaluation statewide.

- California Sea Grant Project Description and Final Report
- Program Website

Photo credit –CDFW Archive

8. California Connectivity Population Model Summary

This summary document detailing connectivity model methods and results was provided by principal investigators Drs. Peter Raimondi and Mark Carr as supplemental material to include for the Review. At the time that final Review report becomes available in January 2023, the connectivity model will still be in development. A comprehensive report and more detailed results from the connectivity modeling will become available shortly after the release of this review report in 2023.