Orange County Coastkeeper Decadal Review Data Submission

Introduction:

Orange County Coastkeeper has been working on the development and implementation of California's Marine Protected Areas (MPAs) since 2001. During that time our staff actively participated in all of the public processes that lead to the eventual completion of the MPA Network in 2012. Since that implementation, our staff has focused our work on the MPA Outreach and Education, Research and Monitoring, and Enforcement and Compliance pillars of MPA Management. Our outreach and education efforts include direct community outreach through presentations to state, regional, and local agencies, along with community and school groups. Our research and monitoring work includes conducting human use surveys as part of the statewide MPA Watch Program and local Aliso Wildlife Habitat Monitoring Program, and eelgrass and oyster restoration efforts in Orange County MPAs. Our enforcement and compliance work included facilitating the Orange County Marine Protected Area Council Compliance Committee and working with local enforcement agencies to provide them with the information and tools they need to enforce MPA regulations.

Highlights and Key Findings:

Orange County Coastkeeper is currently running projects that implement Marine Life Protection Act goals 1, 2, and 3. These projects include Our Upper Newport Bay Living Shorelines Project, Orange County MPA Watch, Aliso Wildlife Habitat Monitoring Program, and our MPA Community Outreach.

Specifically, our work to restore eelgrass and native Olympia Oysters in the Upper Newport Bay SMCA has implemented Goal 2: Help sustain, conserve and protect marine life populations, including those of economic value, and rebuild those that are depleted. This work is through our **Upper Newport Bay Living Shorelines Project** that started in 2012 and continues to the present. The overarching purpose of this project is to enhance the native Olympia oyster (Ostrea lurida) and eelgrass (Zostera marina) populations while learning about the restoration configurations and methods that provide the greatest ecosystem benefits in terms of biodiversity and shoreline protection. We undertook a collaborative community approach to leverage our monitoring and restoration efforts while informing students and the public about the benefits of conserving wetland habitats. Project partners include California State Universities Fullerton (CSUF) and Long Beach (CSULB).The full report and more information can be accessed at https://www.coastkeeper.org/restoration/living-shorelines/

The specific objectives of the project are divided into three categories:
1. Species Performance
a. Increase the abundance of oyster and eelgrass populations in UNB through single species and integrated multiple-species restoration treatments.

b. Determine if integrated oyster and eelgrass restoration enhances the performance of each species in terms of density, size (oysters) compared to isolated restoration of each species.

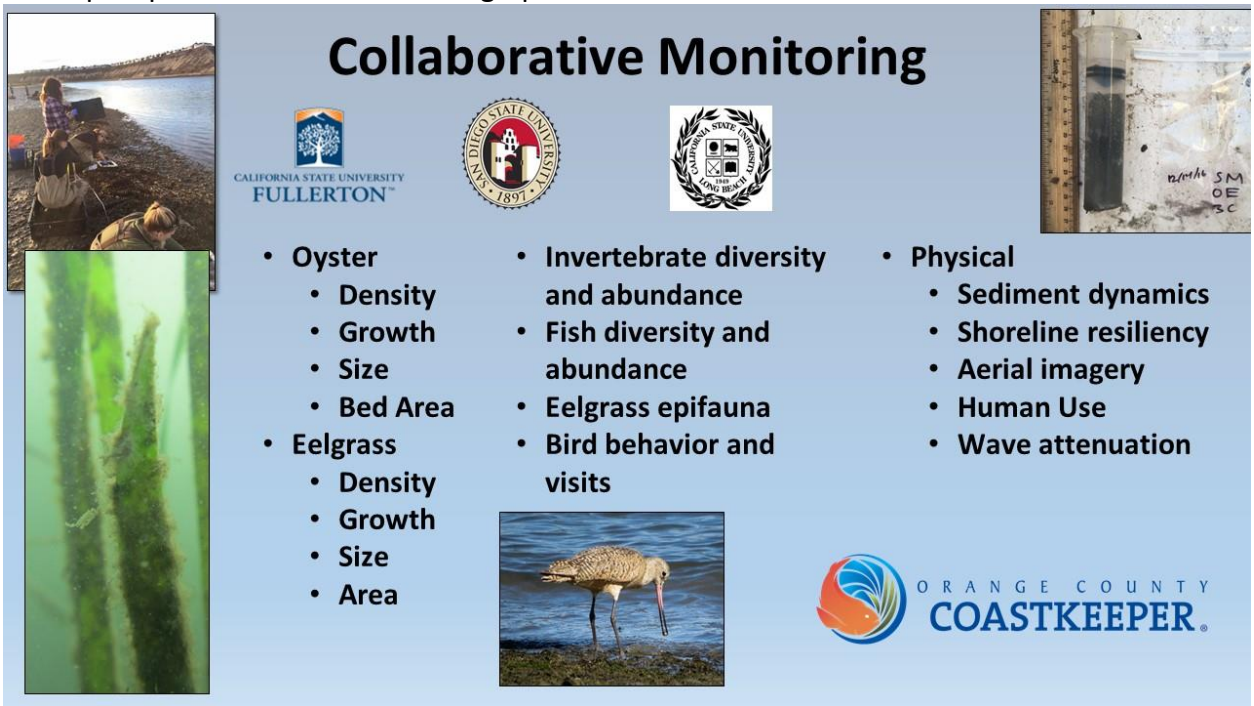
2. Habitat Value

a. Compare the habitat value of each restoration treatment (bagged oyster shell, eelgrass beds, or integrated oyster shell and eelgrass) for invertebrate, fish, and bird species compared to unstructured mudflats and pre-restoration conditions.

3. Shoreline protection

a. Compare the effectiveness of restoration treatments (oyster shell, eelgrass beds, or integrated oyster and eelgrass restoration) in retaining sediment, attenuating waves, and reducing erosion as compared to unstructured mudflats.

The report products are listed in the graphic below.



Our **Orange County MPA Watch Program** was started in 2011 and implements MLPA Goal 1. Protect the natural diversity and abundance of marine life and the structure, function, and integrity of marine ecosystems. This project is part of a statewide network of programs that support healthy oceans through community science by collecting human use data in and around marine protected areas and contributing that data to the adaptive management of California's MPAs. This is done using trained volunteers to produce high quality data that can be used by state and local agencies, NGO's and the public to make decisions on where to deploy resources. Products include data reports, survey site maps, training materials, and photos. Information on Orange County MPA Watch is available at https://www.coastkeeper.org/research/mpa-watch-program/. Information on the statewide

program is available in the report *MPA Watch: Community Science for Stewardship of Ocean Resources* and at https://mpawatch.org/.

Another program that implements MLPA goal 1 is our **Aliso Wildlife Habitat Monitoring Program**. This project was started in 2021 and phase one was completed the same year. The goal of the Aliso Wildlife Habitat Monitoring Program is to monitor human-wildlife activity at Aliso Beach and Treasure Island in the Laguna Beach State Marine Reserve (SMR) and State Marine Conservation Area (SMCA) and educate visitors about the importance of sand barriers within estuaries. The program, also known as Aliso Berm Buddies, enlists volunteers to monitor human disturbance at the mouth of Aliso Creek by Treasure Island and Aliso Beach in Orange County California. These sites are within the Laguna Beach State Marine Reserve (SMR) and State Marine Conservation Area (SMCA) respectively– both marine protected areas (MPA) regulated by the state in Laguna Beach, Orange County, California. Products include data reports, survey site maps, training materials, and photos. Information on the Aliso Wildlife Habitat Monitoring Program is available at https://www.coastkeeper.org/research/mpa-watch-program/.

Our **MPA Community Outreach** implements MLPA Goal 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. Our work on this goal includes a wide variety of outreach efforts designed to inform the community about MPAs. This work started in 2012 and continues to the present. As part of this effort, we created an Orange County MPA Boaters and Offshore Users Map in 2012 that was distributed through 2014. We have attended hundreds of community events and just as many community group and public agency meetings to give presentations and distribute information about MPAs including maps, brochures, and reports. Each year our W.H.A.L.E.S. School education program takes over three thousand students on a field trip to local MPAs to learn about marine ecosystems and how MPAs protect them. Products from this work include MPA maps, brochures, presentations, studies, and tens of thousands of informed students.

Challenges:

The challenges to our programs have mainly been the ability to fund them and recruit partners and volunteers. Running significant restoration, research, and community outreach programs is very expensive and requires leveraging partnerships and utilizing volunteers. Much of our MPA work is specialized and requires specific skill sets and the willingness to complete the work accurately and on time. Even our outreach efforts require skillful use of the media and talented educators, speakers and field staff. The pandemic presented additional challenges. We had to work carefully within all federal, state, and local guidance to complete our tasks.
We were lucky in that we had completed most of our large scale restoration work pre pandemic, and were able to complete the monitoring and other activities without major disruptions that would impact our data. Our MPA Watch program was shut down for a while when Orange County Beaches were closed but was able to restart soon afterward with new hybrid online/in person training methods. Since the volunteers generally work alone or in small

groups outdoors. They were able to continue to carry out their monitoring efforts. The October 2021 Orange County oil spill provided additional challenges, including closed beaches for a period of time. We adapted to this too and trained our monitors to report oiled wildlife and tarballs when observed. We also adapted our community outreach efforts to migrate it online. While we are reaching a smaller audience that way we are improving our online outreach capability and will continue to grow our online presence.

Knowledge Gaps and Recommendations:

Knowledge gaps include specific demographic information MPA visitors and users. Recommendations include better funding for outreach to inland communities, especially underserved communities so they gain better knowledge of our MPAs and feel comfortable visiting them. Another recommendation is to make it easier for agencies, NGOs, and the public to work with the CADFW to identify needed information and services related to MPAs so that they can design their efforts to meet those needs. Additionally, it would be good for CDFW to coordinate more closely with other state agencies including the State and Regional Water Quality Control Boards, Coastal Commission, and State Lands Commission to ensure MPAs are considered in their decisions.

Conclusion:

In conclusion, there has been a lot of work done by Orange County Coastkeeper and others to assist the state in implementing MPAs throughout the state, and that will continue. We have been able to provide a lot of value to the state MPA network through our MPA related programs and other work as well. We have been able to develop a good working relationship with the CADFW and look forward to building on that in our future work to maintain and improve the MPA network in 2022 and beyond.