



California Department of Parks and Recreation Marine Protected Area Outreach & Education Report



Report prepared for
California Department of Fish and Wildlife
to inform the MPA Decadal Management Review

January 2022

Executive Summary

As a member of the Marine Protected Area (MPA) statewide leadership team, the Department of Parks and Recreation (DPR) has been integral in the outreach and education effort for California's MPAs since 2014. California State Parks interpreters have utilized traditional in-person interpretation and cutting-edge digital technologies to effectively deliver MPA messaging and engage audiences near and far from the California coast. The coordinated effort of DPR stretches across eight coastal parks districts, providing statewide consistency, ensuring high-quality programming, and supporting efficient collaboration with statewide MPA partners. Many educational programs, outreach resources, and interpretive panels have been created in close coordination with California Department of Fish and Wildlife (CDFW), California Marine Protected Area Collaborative Network (MPA CN), and California Marine Sanctuaries Foundation (CMSF). As of January 2022, California State Parks interpreters have delivered more than 3,300 MPA programs, reached more than 184,750 students and adults with MPA messaging, and over 890 MPA-focused social media posts have been seen by more than 1.62 million people. Additionally, California State Parks staff and volunteers throughout the state have collected a total of 947 MPA Watch surveys.

I. Introduction

There are 42 coastal California State Parks units adjacent to 35 MPAs (See map, page 10). These coastal parks provide a unique platform for the delivery of MPA outreach and education at the important land-sea interface of conservation. As outlined in the MPA Statewide Leadership Team (MSLT) Work Plan FY 15/16 – 17/18, DPR was tasked with developing, installing, and maintaining regulatory and interpretive signage to assist in creating a broad understanding of regulations and increase compliance among park visitors (Strategic Priority 2, Key Action 2.1).

Furthermore in 2014, CDFW engaged DPR in a pilot program to develop and disseminate consistent MPA messaging statewide (Strategic Priority 3, Key Action 3.2). Together the agencies created MPA-focused curriculum and delivered distance learning programs in partnership with PORTS: Parks Online Resources for Teachers and Students® Program (<https://www.ports-ca.us/home>). CDFW funded PORTS Program interpreters working in state parks adjacent to MPAs spread between northern and southern California. The pilot was successful and a 2018 grant from the Ocean Protection Council (OPC) allowed the project to double in size and expand into a total of eight coastal state parks districts.

II. 2014 – 2018: MPA Outreach & Education Pilot Program

CDFW recognized DPR had the staff capacity and the physical platform to conduct widespread public outreach and education for MPAs, so CDFW provided \$200,000 in funding spread over a period of four years to support staffing and the purchase of necessary technical equipment to deliver distance learning programs. Four part-time seasonal interpretive staff members were hired in four state parks districts including North Coast Redwoods (Humboldt and Del Norte Counties), Santa Cruz, Monterey, and Orange Coast Districts. Once trained in MPA outreach and the use of the video conferencing equipment, the interpreters began delivering distance learning PORTS programs, connecting virtually with classrooms from their coastal parks and adjacent MPAs. In 2016, interpreters provided the first social media livestreams of parks and MPAs to the general public through a platform called Periscope, a live mobile video streaming

app. Later in 2017, interpreters hosted DPR's first World Ocean Day livestream from the beach in Crystal Cove State Park and State Marine Conservation Area (SMCA).

During the pilot program, CDFW and PORTS also collaborated with the Sacramento County Office of Education to develop online MPA learning modules and digital project-based learning units. Field interpreters worked with professional educators to build the content for the resources which are freely available to educators on the PORTS Program website (<https://www.ports-ca.us/PORTSon-demand/browse-by-topic/ocean-and-watersheds/pbl-resources>).

These programs enhance and extend learning to my students, many of whom are economically disadvantaged and do not have access to these experiences.

*–1st Grade Teacher,
Chula Vista, CA*

In addition to the development of PORTS Programs and associated educational resources for the pilot program, park interpreters, peace officers, lifeguards, and environmental scientists began to engage with the MPA CN through their local MPA Collaboratives per the 2016 MLPA Master Plan for MPAs. With a separate grant from OPC in 2016, San Luis Obispo Coast District's interpretive staff worked with the MPA CN to produce two short informational videos about the local MPAs for tourists visiting the area. Later in 2017, interpretive staff also assisted CDFW with the production of the outreach video *The California MPA Network: Safeguarding an Underwater Wilderness*.

Overall, DPR's pilot program and growing statewide involvement in MPA outreach and education was considered successful. To build on this momentum, OPC approached DPR with a request for proposal to continue the MPA outreach and education efforts at a statewide level in 2017. Outreach and education tasks for DPR were included in the MSLT Work Plan Fiscal Year 18/19 – 20/21, strengthening the department's ongoing role in public outreach.

III. 2018 – 2022: MPA Outreach & Education Project

In the spring of 2018, a contract was put in place for a \$1.2 million Once-Through Cooling Grant from OPC. With the funding, DPR had the ability to expand the scope of the pilot program into what is now known as the California State Parks MPA Outreach and Education Project. The program grew to encompass eight state parks districts along the California coast including North Coast Redwoods (Humboldt and Del Norte Counties), Sonoma-Mendocino Coast, Santa Cruz, Monterey, San Luis Obispo Coast, Channel Coast (Santa Barbara County), Orange Coast, and San Diego Coast Districts. At present time, up to 18 seasonal and permanent interpretive staff are delivering MPA messaging through in-person and virtual educational programs and special events, along with social media content from coastal state parks in these districts.

The MPA Outreach and Education Project's work plan includes the following tasks:

- Expand PORTS Program's MPA-focused distance learning programs
- Create new MPA digital educational resources
- Share MPA content and messaging through social media
- Deliver MPA-focused traditional interpretive programs and campfire programs in parks
- Increase organization and accessibility of MPA educational resources
- Translate MPA published materials and interpretive panels into other languages
- Improve the coordination with the MPA Management Program
- Train staff on MPA Watch survey protocol and collecting community science data

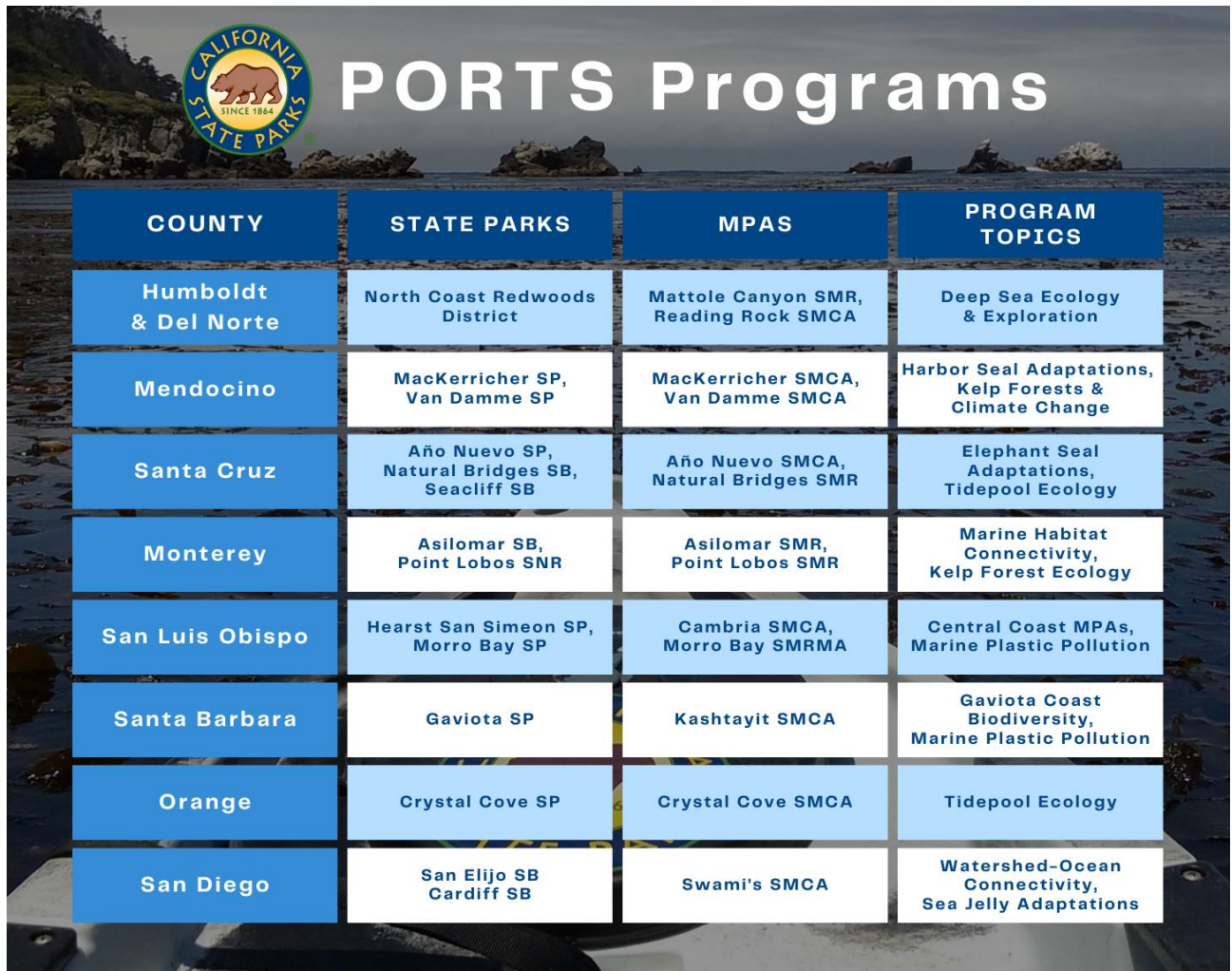
One of the challenges experienced during the first year of the project in 2018 was the lengthy process of hiring and training new MPA interpretive staff. Within a year, most MPA interpreters were hired and received a training on the history and general regulations of MPAs from OPC (Strategic Priority 3, Key Action 3.2.2). By the spring of 2019, interpreters began to offer distance learning and/or traditional in-person programs in their parks. The interpretive programming available in each location varies widely depending on the habitats and species found in each region, park, and the adjacent MPAs.

PORTS Program

The PORTS Program has enabled K-12 students to connect directly with interpreters in parks through interactive video conference calls since its inception in 2004. Classrooms in 53 California counties have connected to parks through PORTS. The MSLT Work Plan Fiscal Year 18/19 – 20/21 called for the expansion of PORTS MPA Programs (Strategic Priority 3, Key Action 3.2.2) and with the support from OPC, new programs were developed. Thanks to PORTS, MPA messaging now reaches far beyond the California coast, transcending state and national borders, engaging students across the country and around the world.

PORTS Program has excellent presentations and I love my 4th graders being able to learn about why protecting the ocean is so important.

*– 4th Grade Teacher,
Los Angeles, CA*



COUNTY	STATE PARKS	MPAS	PROGRAM TOPICS
Humboldt & Del Norte	North Coast Redwoods District	Mattole Canyon SMR, Reading Rock SMCA	Deep Sea Ecology & Exploration
Mendocino	MacKerricher SP, Van Damme SP	MacKerricher SMCA, Van Damme SMCA	Harbor Seal Adaptations, Kelp Forests & Climate Change
Santa Cruz	Año Nuevo SP, Natural Bridges SB, Seacliff SB	Año Nuevo SMCA, Natural Bridges SMR	Elephant Seal Adaptations, Tidepool Ecology
Monterey	Asilomar SB, Point Lobos SNR	Asilomar SMR, Point Lobos SMR	Marine Habitat Connectivity, Kelp Forest Ecology
San Luis Obispo	Hearst San Simeon SP, Morro Bay SP	Cambria SMCA, Morro Bay SMRMA	Central Coast MPAs, Marine Plastic Pollution
Santa Barbara	Gaviota SP	Kashtayit SMCA	Gaviota Coast Biodiversity, Marine Plastic Pollution
Orange	Crystal Cove SP	Crystal Cove SMCA	Tidepool Ecology
San Diego	San Elijo SB, Cardiff SB	Swami's SMCA	Watershed-Ocean Connectivity, Sea Jelly Adaptations



MPA Outreach & Education

Jan 2019 - Jan 2022

3,340

MPA-focused
events and programs

184,760

People reached with
MPA programming

891

MPA-focused
social media posts

1.62 million

People reached with
MPA social media

947

MPA Watch
Surveys

**Explore MPA Programs &
Educational Resources**

www.ports-ca.us/home/mpas

In early 2020, the COVID-19 global pandemic forced schools and many parks to close to protect public health. The MPA interpreters were ready with the skills and technical equipment on hand to provide rapid response as the PORTS Program expanded to offer PORTS Home Learning Programs. This new format offered features similar virtual field trips but it is delivered in a secure webinar setting. This allows hundreds of students learning from home or multiple classrooms from different schools to safely join the same program while maintaining student privacy.

In addition to regular PORTS Programs throughout the year, DPR has offered special live programs and virtual events highlighting environmental holidays such as World Ocean Day, World Wetlands Day, and California Biodiversity Day. The live programs feature interpreters along the shores of their parks and MPAs, sharing information about local species and habitats, climate change, and responsible wildlife viewing practices. In special partnership with the California Coastal Commission (CCC), PORTS has also delivered annual live programs highlighting the California King Tides Project and the impacts of climate change and sea level rise on the California coast. All of these special live programs include collaboration between MPA interpreters in multiple locations sharing MPA messaging in the context of their region of the coast. The livestreams are shared on various social media channels and regularly experience viewership in the thousands.

In 2018, a collaboration between PORTS and the California State Parks Dive Team started the first “live dive” underwater livestream program from Crystal Cove SMCA. In 2020 – 2021,

three MPA interpreters were trained to begin delivering underwater programming using specialized SCUBA gear. For World Ocean Day 2021, PORTS and the dive team collaborated with the Monterey Bay Aquarium to deliver live programming from underwater in a thriving kelp forest at Point Lobos State Marine Reserve. The program was simultaneously livestreamed to the DPR and aquarium Facebook pages and YouTube channels. This particular program experienced a viewership of nearly 27,000 people. The MSLT recognized this successful collaboration and has included live underwater interpretive programs into the MSLT Work Plan Fiscal Year 21/22 – 24/25 (OE 1.4.5).



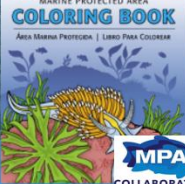
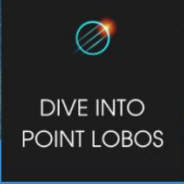
These field trips are some of the best I have been on. We are land-locked in Illinois and many of my students have never seen the ocean in person. Hearing about the ocean environment and animal adaptations from an expert is an amazing experience. The virtual field trips also tie into several of our science goals.

*– 5th Grade Teacher,
Carbondale, Illinois*

Archived recordings of many of these MPA PORTS programs and special livestreamed events can be found on the PORTS YouTube channel at <https://www.youtube.com/c/CaliforniaStateParksPORTSPrograms>.

Digital Educational Resources

State Park interpreters strive to maintain relevancy in education by building resources in line with current pedagogy. Gone are the days when interpreters would compile large binders filled with printed curriculum and detailed classroom lesson plans. Teachers now seek content they can mix-and-match to create unique learning experiences relevant to their particular group of students. In response, MPA interpreters have leveraged new technologies to build educational resources in-line with teachers' needs. Messaging to raise awareness of MPAs and inspire stewardship has been shared through short-format videos, educational apps, and immersive learning experiences featuring 360-degree photography and three-dimensional augmented reality activities and games.

 Discover the Southern California Coast: Swami's SMCA		 MARINE PROTECTED AREA COLORING BOOK Area Marine Protected Area Lined Park Coloring MPA COLLABORATIVE NETWORK	 DIVE INTO POINT LOBOS
360° Photo Experiences on Roundme	Microsoft's Flipgrid: MPA Topics	Quiver Coloring: 3-D Augmented Reality	Timelooper: Dive into Point Lobos App
Captured Van Damme and Swami's SMCA's in 360° interpretive experiences.	29 MPA topics created with more than 450 hours of student engagement!	Worked with the MPA CN to bring a lingcod and California two-spot octopus to life in a 3-D mobile app!	Partnered with CSUMB researchers to create an immersive 360° experience for Point Lobos SMR.

In collaboration with marine science researchers at California State University Monterey Bay who provided 360-degree underwater photos of Point Lobos State Marine Reserve, DPR built a mobile app that allows students and park visitors to virtually “dive” into Point Lobos. This virtual dive allows users to experience a submarine canyon, a kelp forest, and an urchin barren while learning how MPAs protect different habitats and species. The app has been downloaded and engaged with more than 2,000 times. Recent work with a specialized drone photographer captured aerial 360-degree imagery of Van Damme State Park and the adjacent Van Damme SMCA as well as San Elijo and Cardiff State Beaches and the adjacent Swami’s SMCA. This specialized drone imagery has been built into Roundme, a platform that hosts 360-degree imagery and interpretive content from locations around the globe.

Digital video has also enabled DPR to reach new audiences with MPA messaging. A long-running partnership with Microsoft’s Flipgrid, a platform for educational video sharing with the mission of “empowering student voices,” has allowed DPR to share 29 video topics about MPAs and marine life, engaging thousands of students in more than 450 cumulative hours of learning. Interpreters have also shared video content to YouTube, such as the wildly popular “Respect the Tidepools!” music video featuring a song about tidepools and MPAs written to the tune of Aretha Franklin’s “Respect” and filmed at Crystal Cove State Park and SMCA.

The MPA CN and DPR’s MPA Outreach and Education Coordinator recently partnered on a project funded by a \$100,000 MPA Outreach and Education Small Grant from OPC and Coastal Quest. The project included the redesign and update of the bilingual MPA coloring and activity books, including the integration of specially designed coloring pages that can be scanned with the Quiver Coloring mobile app which transforms the flat image on the page into an interactive, three-dimensional, augmented reality learning experience. Digital copies of these resources are available on the MPA CN’s website and more than 78,000 copies of the books were printed and distributed to MPA Collaboratives statewide. This project along with many others created in partnership with the MPA CN provide the MPA interpreters with valuable and engaging educational resources to complement their in-park interpretive programming.

Social Media

In addition to utilizing technology to provide PORTS programs and resources to classrooms, interpreters have also offered demonstrations and interpretive talks as livestreams on their social media channels to the general public. Interpreters share original content captured in their parks in the form of photos, funny and interesting videos, and interactive quizzes and activities on platforms such as Instagram, Facebook, YouTube, TikTok, and Twitter. Some posts have gone viral, including one featuring the deep-sea Pacific Football fish which mysteriously washed up on the shores of Crystal Cove State Park in 2021. Interpreters have also saved time and greatly benefited from the MPA social media campaign designed and shared by CMSF. To date, more than 874 MPA-focused posts on different parks’ social media accounts have reached more than 1.6 million people since the team began engagement tracking in mid-2020.

Traditional Interpretation in Parks

Despite the setbacks of COVID-19 limiting many in-person interpretive programs in parks between 2020 – 2021, “traditional” interpretive programs in parks have resumed and continue to play a key role in MPA outreach and education. Interpreters have delivered MPA-focused Junior Ranger activities, campfire programs, roving interpretation, and staff information tables in parks along the coast. Many have also attended community events and wildlife festivals, setting up displays that highlight the benefits of California’s network of MPAs. Some volunteer docent

groups in different parks have also received training in MPA messaging (Strategic Priority 3, Key Action 3.2.2) and share information with park visitors and/or support school field trips.

In 2021 the MPA interpreter in North Coast Redwoods District (Humboldt and Del Norte Counties) collaborated with an Indigenous interpreter to design and begin delivering a two-part field trip experience at Sue-Meg State Park (formerly Patrick's Point State Park). Students learn about the role abalone play in a kelp forest and then learn about the cultural use of abalone by the Yurok people. The integration of more California Tribal traditional ecological knowledge into interpretive programming is a goal for future projects.

Interpretive Signage

In addition to interpretive programming, MPA interpretive signage can be found in park units adjacent to MPAs. DPR has worked with CDFW, MPA CN, and CMSF to develop, distribute, install, and maintain signage. Over the years, some signs have degraded due to exposure to the elements or because of vandalism and need repair or replacement. DPR will be working with MPA CN and CMSF to support a statewide inventory of MPA interpretive and regulatory signage in 2022. The department is also working to translate a selection of interpretive panels and printed outreach materials such as brochures, flyers, and educational activities into Spanish and Chinese in 2022.

IV. Division of Boating and Waterways

The MSLT Workplan Fiscal Year 15/16 – 17/18 called for DPR's Division of Boating and Waterways (DBW) to identify opportunities to include MPA messaging into existing outreach campaigns. Over the years the statewide California Boating Clean and Green Program (a joint program with the California Coastal Commission) and some of its partners have produced a variety of materials that help improve the understanding of regulations to increase compliance among California boaters. The program has experienced significant growth in recent years, increasing materials produced and distributed.

Since 2014 the program and its partner, The Bay Foundation (funded by the Federal Clean Vessel Act Program (FCVAP) and Ocean Quest (2020-2021) have annually produced and distributed 7,000 Northern and Southern California tide books which include MPA information. Additionally, over the years DBW in partnership with the San Francisco Department of the Environment has produced and distributed 67,000 San Francisco Bay Clean Boating Maps which include MPA messaging. The program in partnership with The Bay Foundation and the San Francisco Estuary Partnership have also funded and produced a quarterly clean boating newsletter. The publication has a distribution of approximately 2,500 readers and has featured six articles about MPAs over the years.

The program and The Bay Foundation have also shared MPA messaging during four Dockwalker trainings and during the spring 2020 California Clean Boating Network meeting. With funding from DPR, CCC, OPC, and Coastal Quest, DBW produced and distributed 8,000 new bilingual binder cards with a section dedicated to MPAs between 2020 and 2021.

V. Key Partners

Regular consultation with CDFW on the creation of new MPA outreach resources has been a key component of the content generated by DPR. OPC has also been integral to the success of the department's MPA Outreach and Education Project, hosting monthly check-in meetings to

help guide the project and inform DPR staff statewide about developments and opportunities for new partnerships or collaborations.

DPR staff have also been engaging with the MPA Collaborative Network over the years with involvement growing steadily in some districts. Many of the MPA CN outreach and education projects which have been produced, such as short educational videos and outreach resources have been created with input from DPR staff involved in their local collaboratives. DPR has also been working with the MPA CN to organize and catalog MPA educational resources in an on-going project to make them more accessible for educators and members of the public. For more information on DPR's involvement in the MPA CN, please see their full report.

Beginning in 2019, a series of nine MPA Watch trainings were conducted in the coastal districts, training DPR staff and volunteers in survey protocol and data collection. Many MPA interpreters found the surveys easy to incorporate into their regular work in their parks and volunteer docents were inspired by friendly competition to collect human use data. DPR has collected 947 MPA Watch surveys statewide since 2019. For more information on DPR's involvement in the MPA Watch community science program, please see their report.

As mentioned earlier, CMSF has been another key partner in the development of interpretive signage that has been installed in coastal parks. Their MPA social media campaign has been utilized on many state parks' channels and their county based MPA PowerPoint presentations have proven to be valuable and easily customizable public outreach tools.

Other important collaborations with California Tribal members, Monterey Bay Aquarium, County Offices of Education, universities, local libraries, scouting groups, and many regional partners have resulted in increasing public access for MPA outreach and education. From producing special underwater programming and capturing 360-degree imagery to hosting outreach events for school groups and the public, our collaborating partners' contributions are both innumerable and invaluable to DPR's efforts.

VI. 2022 and Beyond: Looking Toward the Future

As demonstrated in this report, DPR's involvement in MPA outreach and education has grown significantly since 2014. Some challenges have been overcome, but there are many goals that can be achieved in the coming years.

Interpretive Staffing

Past grant funding to DPR has been able to support seasonal and limited-term interpretive positions. The MPA interpretive team first began as four seasonal part-time PORTS Program interpreters supported by funding from CDFW and has now grown to a mix of 18 part-time and full-time interpreters. The majority of these positions are funded by the 2018-2022 Once-Through Cooling grant from OPC and additional grant funding would allow this program to continue to grow in the future. The MSLT Work Plan Fiscal Year 18/19 – 20/21 (Key Action 3.2.4) included the vision for DPR interpretation "to expand existing PORTS MPA programs and provide new PORTS and park interpretive MPA programs year-round," which dedicated positions allow DPR to accomplish.

In 2021 a budget change proposal was submitted and enacted, paving the way for significant growth in DPR's statewide interpretation and education. The approved budget included a department-funded permanent State Park Interpreter II full-time position as the MPA Outreach & Education Project Coordinator. This position is key to ongoing statewide coordination of MPA

outreach and education within the Department, and improved collaboration with other organizations and agencies.

Another goal of DPR is to diversify interpretive staff to include Indigenous and bilingual team members willing to share their unique experiences, knowledge, and perspectives to diverse audiences. Recognizing the inherent value of different cultural perspectives in relation to coastal ecosystems and marine stewardship will benefit the interpretive programming and learning opportunities, especially for K-12 audiences who will benefit from seeing themselves represented in parks.

Targeted Outreach

DPR plays an important role in building social norms around the value of MPAs and actions that protect marine wildlife. Visitors to coastal state parks and MPAs come from communities and cultures near and far. In an effort to provide relevant information about MPAs to diverse audiences, the MSLT could benefit from having a concrete understanding of visitor demographics to MPAs to support targeted outreach and education to diverse audiences. Additionally, the development of a statewide marketing campaign by the MSLT could help increase awareness of MPAs to Californians and visitors alike.

Embracing popular mobile apps and leveraging emerging technologies will continue to allow DPR to stay relevant while reaching visitors and students with MPA messaging. Finding ways to integrate MPA information into commonly used travel apps such as Google Maps and Trip Advisor as well as DPR-approved OuterSpatial could help raise awareness of MPA regulations before visitors arrive in coastal parks with MPAs.

VII. Conclusion

From installing interpretive signage in parks to creating immersive augmented reality educational experiences, DPR has the physical platform to deliver MPA messaging and the skilled interpretive staff passionate about making MPA education relevant and fun. Through the implementation of new technologies and evolving digital platforms, DPR's creative MPA interpreters are poised to reach new audiences while continuing to deliver memorable educational experiences for park visitors along the California coast. With dedicated staff and a focus on diversifying storytelling, DPR will have the ability to grow MPA interpretation in the coming years.

35 marine protected areas are adjacent to 42 land-based California State Parks

