# MPA Watch: Community Science for Stewardship of Ocean Resources


*Figure 1: MPA Watch Surveyors in Action*

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

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With significant contributions from managers of the MPA Watch Network

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# II. Introduction

MPA Watch is a statewide network of programs that support healthy oceans through community science by collecting human use data in and around marine protected areas (MPAs) and contributing that data to the adaptive management of California's MPAs.

MPA Watch was created in 2008 to establish a coordinated, statewide effort to collect human use data in California MPAs. Human use data collection began in Monterey County following the implementation of the first MPAs in that region.

As MPAs were implemented statewide, MPA Watch's guiding question was: "How is the public using MPAs, and do they seem to be aware of and following MPA regulations?" Organizations from other regions of the state expressed interest in conducting MPA Watch surveys so MPA Watch was expanded and modeled as a network. Partner organizations are responsible for recruiting, training, and managing surveyors in their own regions. In 2012, the newly formed MPA Watch network recruited an advisory group of scientists to standardize protocol and make data directly comparable across the state. A statewide coordinator was designated to oversee implementation of the program.

Community science programs are valuable educational tools that inform volunteers about the topic on which they are collecting data and reinforce and deepen understanding of the subject through hands-on interaction. In addition to making science accessible to the public, community science programs increase the quantity of data collected, allowing for a greater scope of work. Effectively monitoring human use of California's 545,290 acre MPA network requires the scope of work made possible by community science. MPA Watch, as a well-established community science program, is uniquely poised to collect valuable monitoring data, while also educating target audiences and the public about MPAs.

## About this Report

This report was prepared for the California Department of Fish and Wildlife to inform the MPA Decadal Management Review. It is meant to provide a high-level overview of the background and utility of the MPA Watch program and data. For a more detailed report on MPA Watch data, findings, and recommendations, please see the report "Using MPA Watch Data to Analyze Human Activities Along the California Coast" prepared by UC Davis.

MPA Watch addresses goals of the Marine Life Protection Act and the four pillars of MPA Management: Science and Monitoring; Education and Outreach; Enforcement and Compliance; and Policy and Permitting.

## Acknowledgments

MPA Watch is supported by the Resources Legacy Fund and the Once-Through Cooling (OTC) Interim Mitigation Program of the Ocean Protection Council (OPC), and received support for this project from Coastal Quest, with a grant from OPC's OTC Program. We received valuable guidance from both of those organizations, as well as the California Department of Fish and Wildlife in preparing this report. MPA Watch would also like to acknowledge the Indigenous peoples who have stewarded California's ocean seascapes since time immemorial and our respect for the incorporation of Traditional Knowledge in data gathering and analysis.

# III. Highlights and Key Findings:

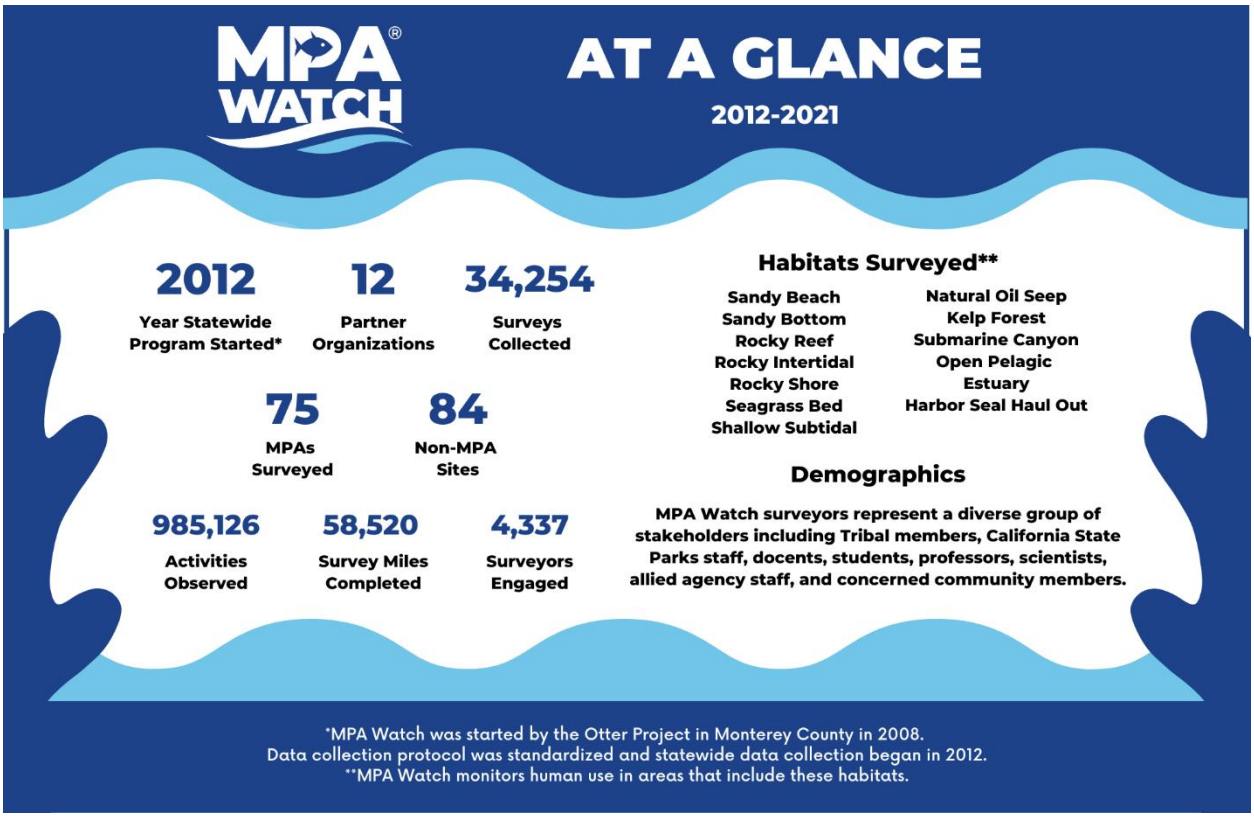



*Figure 2: MPA Watch at a Glance 2012-2021*

## Data Collection Protocol

MPA Watch methods and protocols have been designed with analytical and practical challenges in mind. These methods and protocols were informed by a range of sources, including literature in the social sciences, expert consultation including a scientific advisory committee, application of the practices over time, and the resulting lessons learned by MPA Watch programs.

For **land-based surveys,** surveyors are trained to walk predetermined routes on the beach and record observations on an MPA Watch datasheet.

Types of activities recorded include:
***Onshore Activities***: Beach Recreation, Tidepooling, Shore-based Fishing
***Offshore Activities***: Surfing, Standup Paddle Boarding, SCUBA/Snorkeling
***Boating***: Boat Fishing, Kayaks, Party Boats
***Other Activities***: Potential Poaching, Education, Enforcement

For **boat-based surveys**, surveyors accompany a certified MPA Watch captain aboard a vessel and traverse predetermined routes on the water and record observations on an MPA Watch datasheet.

Types of data recorded include: Latitude and longitude, Heading, Distance (yds), Vessel Type, Activity, Pictures of the vessel.

## Partner Overview

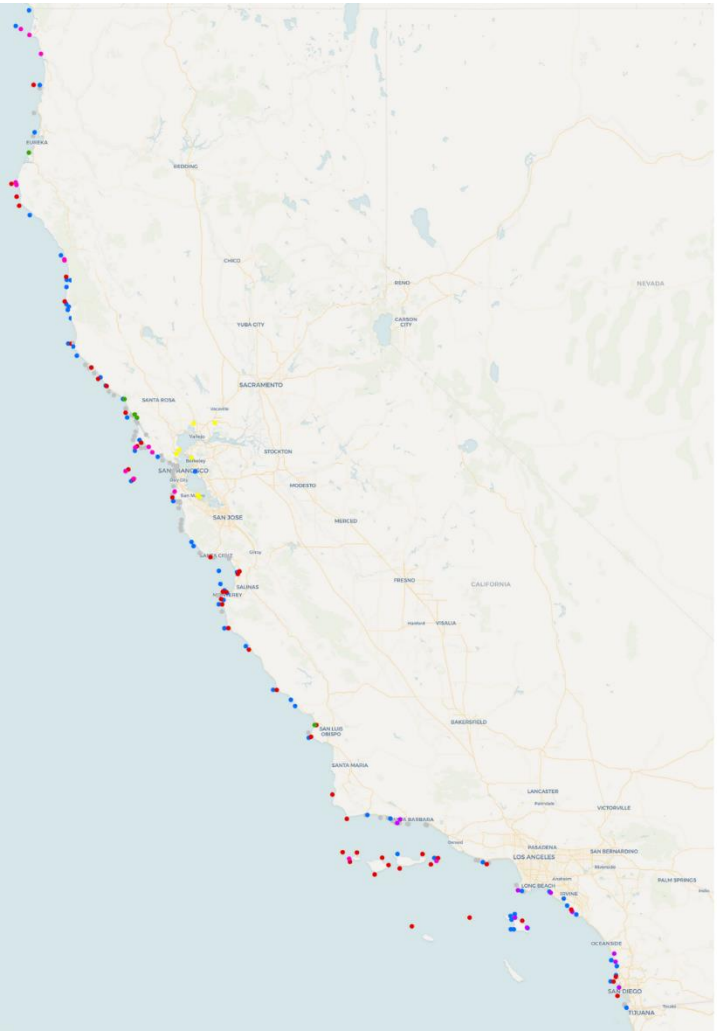
The MPA Watch network relies on partners to recruit, train, and manage surveyors in their own local areas. By utilizing the pre-existing relationships and reputations that partners have within their communities, MPA Watch has become a trusted program statewide. Partners also provide the local knowledge and expertise necessary to implement the program throughout California's diverse coastline.

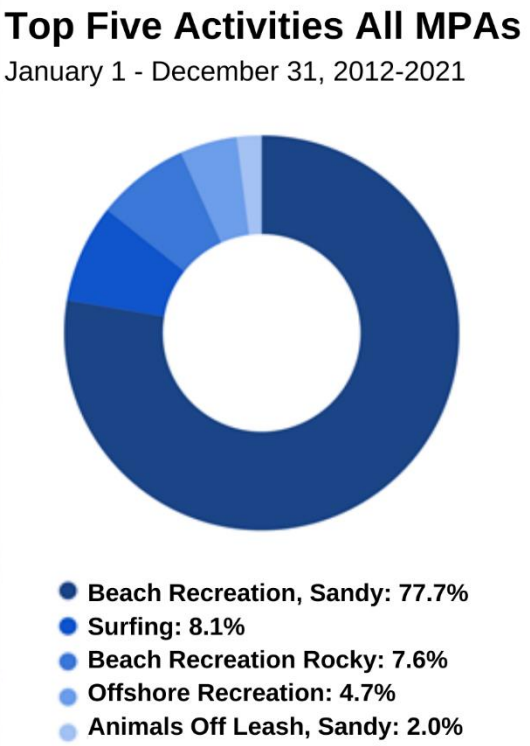
The table below includes information for MPA Watch partners as of January 2022. Data are from the year each partner joined the network or 2012 (when standardized data collection began), whichever comes later, through December 2021.

*Table 1: MPA Watch Partner Organizations*

| Partner | Year Joined | County(ies) | Land-Based Surveys | Boat-Based Surveys | # MPAs Monitored | # Surveys Collected | # Surveyors Engaged |
|---|---|---|---|---|---|---|---|
| **California State Parks** | 2019 | Statewide | ✓ | | 14 | 874 | 65 |
| **Tolowa Dee-ni' Nation** | 2018 | Del Norte | ✓ | | 1 | 185 | 8 |
| **Eagles Eyes of False Klamath Cove/ Yurok Nation** | 2018 | Del Norte, Humboldt, Mendocino | ✓ | | 8 | 1,709 | 18 |
| **Environmental Action Committee of West Marin** | 2013 | Marin | ✓ | | 5 | 1,543 | 188 |
| **Greater Farallones Association** | 2014 | San Mateo, San Francisco, Marin, Sonoma, Mendocino | ✓ | | 10 | 6,559 | 175 |
| **Pacific Grove Museum of Natural History** | 2018 | Monterey | ✓ | | 2 | 25 | 5 |
| **Santa Barbara Channelkeeper** | 2011 | Santa Barbara | ✓ | ✓ | 11 | 5,860 | 520 |
| **Heal the Bay** | 2011 | Los Angeles | ✓ | | 4 | 6,540 | 983 |
| **Los Angeles Waterkeeper** | 2011 | Los Angeles | | ✓ | 2 | 650 | 1,500 |
| **Orange County Coastkeeper** | 2011 | Orange | ✓ | | 5 | 4,396 | 379 |
| **WILDCOAST** | 2016 | San Diego | ✓ | | 7 | 1,237 | 199 |
| **Legacy Sites** Set up by programs that no longer participate in MPA Watch. Data are managed by WILDCOAST. | n/a | Humboldt, Santa Cruz, Monterey, San Luis Obispo | ✓ | | 8 | 4,676 | 297 |

## Key Findings - Statewide





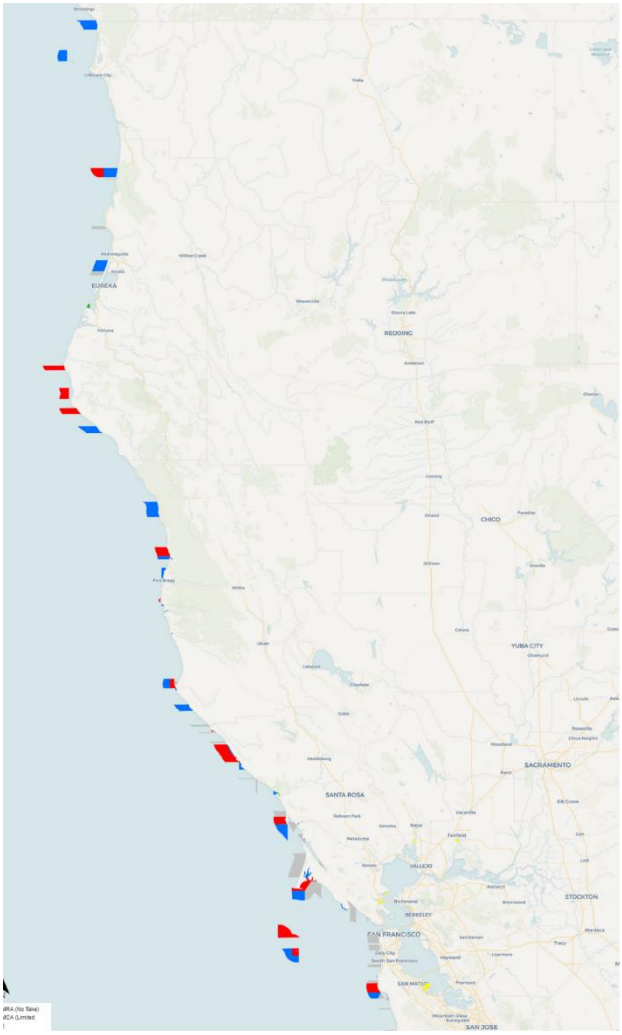

*Map: MPAs with MPA Watch survey sites statewide. A full list of MPAs monitored by MPA Watch may be found in the appendix.*

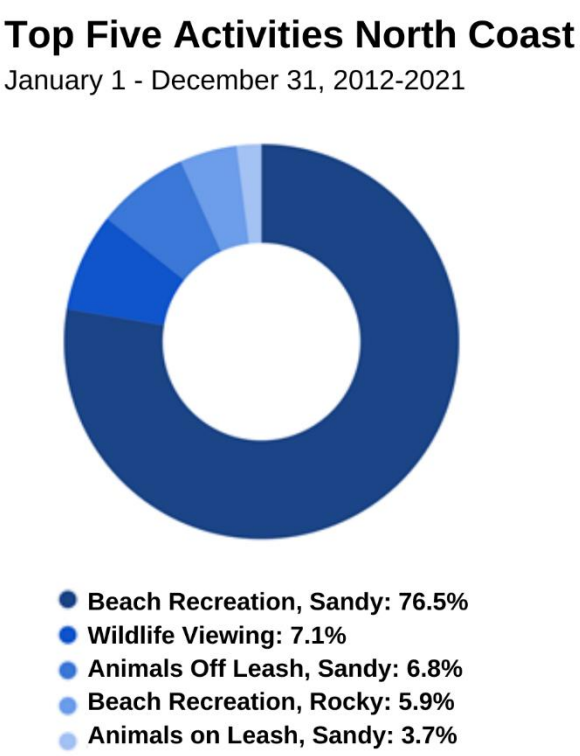
*Figure 3: Key Findings Statewide*

### Executive Summary - Statewide

- 2,141 MPA Watch surveyors have submitted 36,029 surveys, observing 1,472,450 activities across the coast of California since the inception of MPA Watch.
- The top five activities tracked across the state by number of observations were: Beach Recreation, Sandy (982,937 total observations statewide); Surfing (102,023); Beach Recreation, Rocky (96,054); Off-Shore Recreation (59,242); Animal On Leash, Sandy (25,583).
- MPA Watch data shows that on and off-shore nonconsumptive activities make up 97.6% (1,436,681) of the activities reported. The remaining 2.4% (35,769) consist of on and off-shore consumptive activities. Depending on MPA classifications these consumptive activities may or may not be in violation of MPA regulations.
- Further monitoring and enforcement of MPA regulations is needed to ensure the efficacy of MPAs across the state.

## Key Findings - North Coast



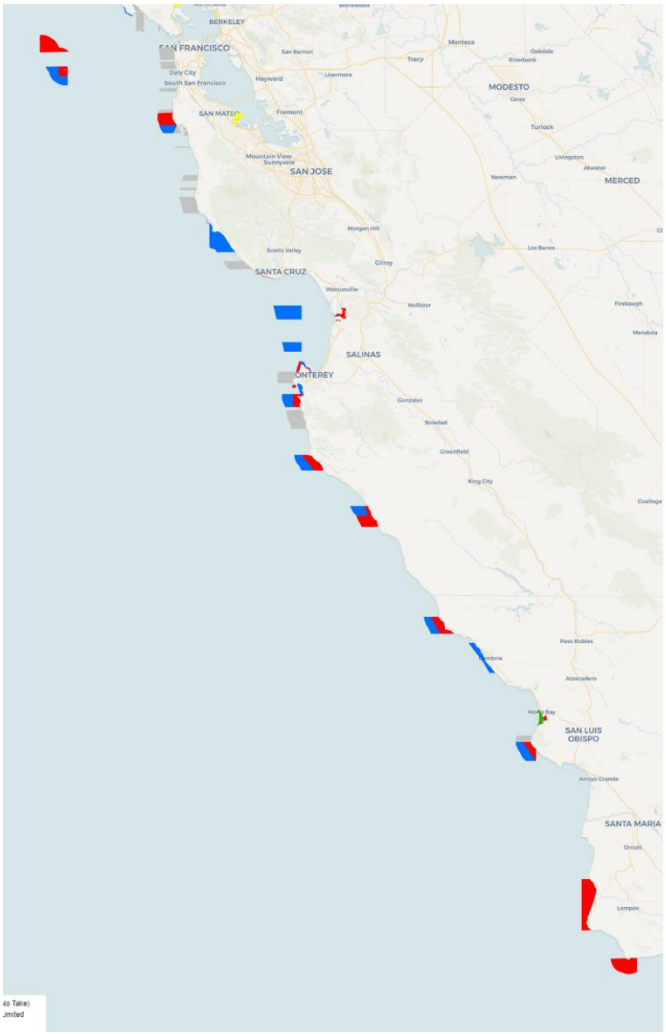

*Map: MPAs with MPA Watch sites in the North Coast from the Oregon border to San Francisco Bay. A full list of MPAs monitored by MPA Watch may be found in the appendix.*

*Figure 4: Key Findings North Coast*

## Executive Summary - North Coast

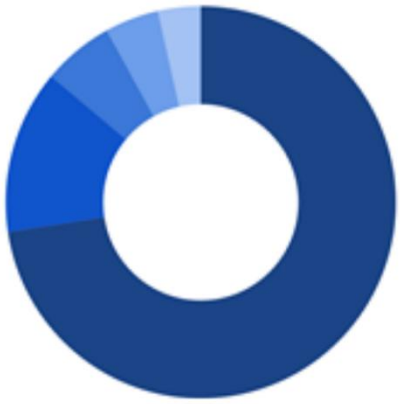
- 374 MPA Watch surveyors have submitted 7,761 surveys, observing 187,646 activities in the North Coast Region since the inception of MPA Watch.
- The top five activities tracked in the North Coast Region by number of observations were: Beach Recreation, Sandy (121,562 total observations); Wildlife Viewing, Sandy (11,309); Animal Off Leash, Sandy (10,791); Beach Recreation, Rocky (9,369); Animal On Leash, Sandy (5,842).
- MPA Watch data shows that on and off-shore nonconsumptive activities make up 95.4% (179,006) of the activities reported. The remaining 4.6% (8,640) consist of on and off-shore consumptive activities. Depending on MPA classifications these consumptive activities may be in violation of MPA regulations.
- Further monitoring and enforcement of MPA regulations is needed to ensure the efficacy of MPAs across the North Coast Region.

## Key Findings - Central Coast




**Top Five Activities Central Coast**

January 1 - December 31, 2012-2021



- **Beach Recreation, Sandy: 72.6%**
- **Beach Recreation, Rocky: 13.5%**
- **Surfing, 5.9%**
- **Animals Off Leash, Sandy: 4.5%**
- **Tidepooling = 3.5%**

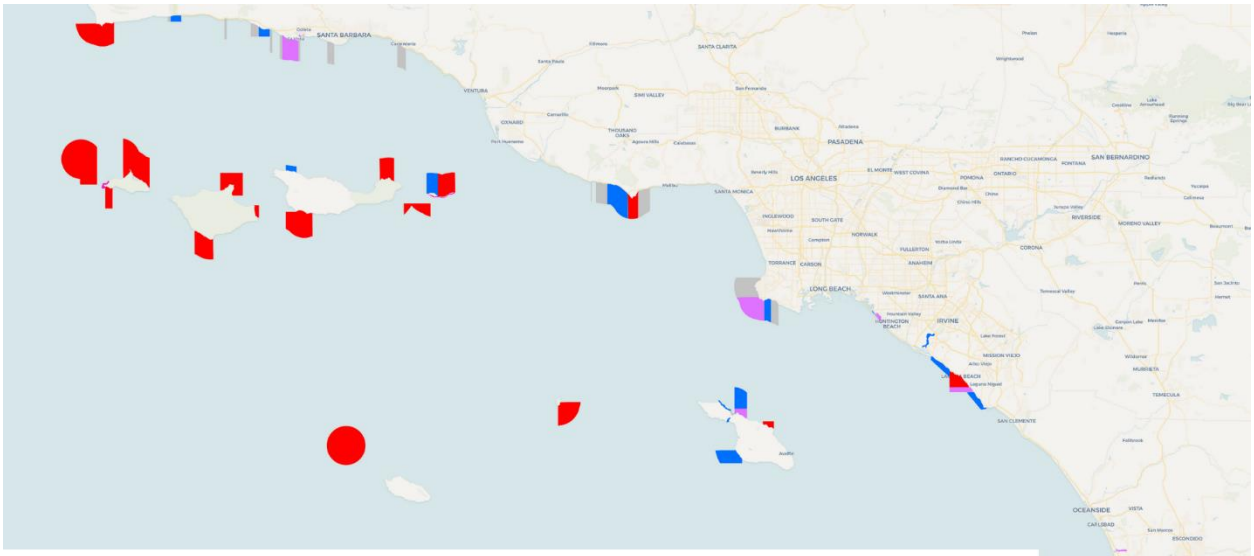
*Map: MPAs with MPA Watch sites in the Central Coast from San Francisco Bay to Point Conception. A full list of MPAs monitored by MPA Watch may be found in the appendix.*

*Figure 5: Key Findings Central Coast*

## Executive Summary - Central Coast

- 406 MPA Watch surveyors have submitted 7,796 surveys, observing 383,256 activities in the Central Coast Region since the inception of MPA Watch.
- The top five activities tracked in the Central Coast Region by number of observations were: Beach Recreation, Sandy (240,616 total observations); Beach Recreation, Rocky (44,817); Surfing (19,546); Animal Off Leash, Sandy (14,792); Tidepooling (11,755).
- MPA Watch data shows that on and off-shore nonconsumptive activities make up 96.9% (371,533) of the activities reported. The remaining 3.1% (11,723) consist of on and off-shore consumptive activities. Depending on MPA classifications these consumptive activities may be in violation of MPA regulations.
- Further monitoring and enforcement of MPA regulations is needed to ensure the efficacy of MPAs across the Central Coast Region.

## Key Findings - South Coast




*Map: MPAs with MPA Watch sites in the South Coast from Point Conception to the US-Mexico border. A full list of MPAs monitored by MPA Watch may be found in the appendix.*

**Top Five Activities South Coast**

January 1 - December 31, 2012-2021

- **Beach Recreation, Sandy: 76.5%**
- **Surfing: 10.2%**
- **Offshore Recreation: 7.3%**
- **Beach Recreation, Rocky: 5.2%**
- **Tidepooling: 0.9%**

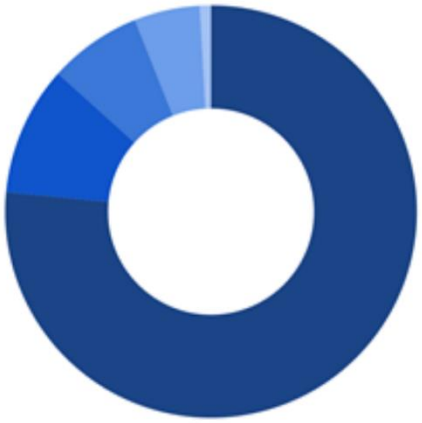


*Figure 6: Key Findings South Coast*

### Executive Summary - South Coast

- 1,262 MPA Watch surveyors have submitted 20,472 surveys, observing 901,548 activities in the South Coast Region since the inception of MPA Watch.
- The top five activities tracked in the South Coast Region by number of observations were: Beach Recreation, Sandy (620,759 total observations); Surfing (82,477); Offshore Recreation (59,242); Beach Recreation, Rocky (41,868); Tidepooling (7,102).
- MPA Watch data shows that on and off-shore nonconsumptive activities make up 98.3% (886,142) of the activities reported. The remaining
- 1.7% (15,406) consist of on and off-shore consumptive activities. Depending on MPA classifications these consumptive activities may be in violation of MPA regulations.
- Further monitoring and enforcement of MPA regulations is needed to ensure the efficacy of MPAs across the South Coast Region.

## Key Findings - UC Davis Data Analysis

The Center for Community and Citizen Science, based at the UC Davis School of Education, examined “human activities throughout the California coast from 2012 to 2020, using data from the MPA Watch community science network.” A summary of their findings is presented here. Refer to UC Davis’s DMR submission “Using MPA Watch Data to Analyze Human Activities Along the California Coast” for the full report.

Key messages and findings:

- MPA Watch is gathering useful data at a statewide scale.
- Among the observations recorded by MPA Watch surveyors, non-consumptive activities vastly outnumber consumptive activities both inside and outside of MPAs.
- MPA Watch data can detect broad, statistically robust patterns in human activities along the coast.
- MPA Watch data can be used to detect statistically significant differences between activities inside and outside of MPAs. Between 2012 and 2020 at the statewide level:
    - Onshore fishing was more likely in sites outside of MPAs.
    - Tidepooling was more likely inside of MPAs.
    - Recreational boating was more likely inside of MPAs.

## Key Findings - Boat-Based Surveys

Los Angeles Waterkeeper and Santa Barbara Channelkeeper operate a robust boat-based MPA Watch program in the South Coast. These data provide critical information and support for compliance initiatives within MPAs. For more information please reference the report titled “Building Community Through MPA Watch Boat-Based Surveys and the MPA Watch Collaborative Network” submitted by Los Angeles Waterkeeper.

## MPA Watch Program Highlights

### Program Design

#### How have individual MPA Watch programs grown or changed over time?

- Many MPA Watch programs now rely on long-term surveyors and interns to gather the bulk of their data. These consist primarily of college interns and people who are retired.
- Many MPA Watch programs have expanded to include an educational component, such as offering school field trips to local beaches that include MPA Watch data collection.
- In appropriate regions, some MPA Watch programs have shifted to become more compliance-focused, working closely with local enforcement officials.
- MPA Watch partnered with California State Parks in 2019 to incorporate human use data collection into park operations. To date, California State Parks has conducted staff and surveyor trainings in Humboldt, Mendocino, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Orange, and San Diego Counties and has established 16 new transects (both within MPAs and control sites) across most participating State Parks districts. This type of partnership holds great potential for the long-term sustainability of the MPA Watch program and its expansion to cover new geographies.

#### How has the MPA Watch Network as a whole grown over time?

- Many programs report their surveyor base has remained steady over the years, mostly due to long-term surveyors such as student interns and people who are retired.

- MPA Watch has expanded to include surveyors from park docent programs and other organizations that already have a presence at the beach.
- The partnership with California State Parks added over 50 surveyors since 2019.
- Some programs have expanded to include Spanish language trainings.
- Virtual trainings were developed and implemented in response to COVID-19.

### What unexpected activities have been observed?

- There have been several instances of dead whales washing onto the beach, which sometimes attracts larger numbers of visitors.
- Anecdotal evidence from surveyors suggests an increase in take from intertidal areas from 2020-mid 2021, possibly linked to the reopening of beaches during COVID-19.
- Some programs report that surfing and tidepooling are top activities, even in areas with few surf spots and tidepools, suggesting these are particularly popular activities.
- In Big River Estuary SMCA (Mendocino County) domestic cats and goats are regularly observed walking off leash with their humans.
- Many surveyors report being fortunate enough to have a lot of wildlife experiences; however, at times this impacts the ability to collect data. For example, at Point Reyes National Seashore the area at Drake's Beach (Marin County) is often closed due to the presence of elephant seals.
- There are a number of large vessels (e.g., cruise ships and large sail boats) that have been observed anchoring in Drakes Bay (Marin County) to escape the rough water and winds of the Pacific Ocean.
- Oyster collection by boat during low tide is frequently observed on Morro Bay (SLO).
- A group was once observed bringing a piano down to the tidepool area at Shaws Cove in Laguna Beach (Orange County). The piano was washed out to sea.

## Surveyors

### What do surveyors like most about MPA Watch?

- Getting outside.
- Supporting marine conservation.
- Engaging with visitors.
- Participating in a real scientific research project.
- Seeing their city from a different perspective (on the water) during boat-based surveys.

### How can MPA Watch improve the surveyor experience?

- MPA Watch may consider creating additional ways to submit data, e.g. through an app.

### Has there been interest in MPA Watch after people see surveyors on the beach?

- Surveyors are frequently asked what they are doing while collecting data. Many programs supply surveyors with MPA maps and guides to share, with information about how to get involved in MPA Watch.

# IV. Challenges

### What challenges has MPA Watch experienced?

- Programs report delays in response to potential violations reported to CalTIP.
- The COVID-19 pandemic resulted in prolonged beach closures in many areas and created the need for virtual trainings or adapted trainings to allow for social distancing.

- Wildfires have forced evacuations and beach closures at some sites.
- The 2021 oil spill in Huntington Beach closed beaches and impacted human activity.
- Surveyor retention can be difficult as MPA Watch surveyors typically complete surveys on their own and may not be as engaged with the organization as other volunteers.
- Identifying additional sources of funding is critical to long-term sustainability.

# V. Knowledge Gaps and Recommendations

### Where are opportunities to expand MPA Watch to new sites at priority MPAs?

- The North Coast, especially in Del Norte, Humboldt, and Mendocino Counties.
- The Central Coast, especially in San Luis Obispo County.
- At islands off the California coast, such as Catalina Island.
- Anywhere remote that has limited public access, such as Kashtayit in Santa Barbara County, and Sea Lion Gulch and Samoa in Humboldt County.
- Additional control sites would be valuable, especially in the Central and North Coasts.

### What are opportunities for the MPA Watch program beyond the current human use surveys?

- Since MPA Watch has hundreds of surveyors already at the beach, there is potential to engage them in additional activities to build stewardship and support for MPAs.
- MPA Watch surveyors could be deployed to collect additional kinds of human use data such as beach intercept surveys.
- MPA Watch could be incorporated into more youth education, such as school field trips.
- MPA Watch could be marketed as a great activity for exercise.
- More trainings in Spanish and other languages could engage communities often marginalized from science and the coast.
- MPA Watch could be used to report tar balls, oiled wildlife, and other impacts of oil spills.
- Camera surveys of human use are being explored in Marin County.

### What other partnerships could MPA Watch include to grow impact?

- Partnering with additional agencies already at the beach to collect surveys such as park rangers and the U.S. Fish and Wildlife Service.
- Partnering with Indigenous communities to collaborate on marine monitoring efforts such as the work of the Tribal Marine Stewards Network.
- Partnering with other community science programs to collect data such as wildlife counts, wildlife disturbance, plastic pollution, and water quality.
- Strengthening involvement with the MPA Collaborative Network.

# VI. Conclusion

MPA Watch is a robust and enjoyable community science program that **engages and educates community members** and provides **valuable human use data** of coastal and marine resources in California.

**Consumptive activities are more often observed by MPA Watch surveyors in non-MPA sites** than within MPAs, suggesting MPAs are a valuable tool for conservation. However, even low rates of poaching have the potential to negatively impact the health of ocean ecosystems and the State should prioritize improving compliance within MPAs.

**MPA Watch has the potential to collaborate** with state agencies and other stakeholders to advance the mission of MPAs in new and important ways moving forward.

# Appendix A - MPA Watch Protocol and Datasheets

## MPA Watch Survey Protocol (Land-Based)

1) Have all required materials on hand before conducting a survey.
    a) This includes:
        i) MPA Watch field guide/maps (survey protocol and directions for conducting the survey)
        ii) Data Sheets (one for each survey)
        iii) Clipboard
        iv) Writing Utensil
        v) Watch
        vi) Compass (can use on smart phone) or GPS
        vii) Digital camera (encouraged but optional)
        viii) Binoculars (encouraged but optional)
2) Fill out the top portion of the data sheet, writing in some of the metadata (Name, Date, Transect ID/Site).
3) Walk to the designated start point.
4) Write in the existing metadata (Start Time, Weather, Tide, etc.)
5) To begin the survey accurately, use a compass or GPS unit to orient yourself in the correct direction of the MPA boundary or transect boundary (see program field guide for site specific orientation directions).
6) Start walking the specified route your survey protocol describes, usually along the mean high tide line, observing and recording all people and boats on the beach or in the water. Do not count people on bluffs, trails, roads, or parking lots. The first occurrence of infrastructure or bluff onshore constitutes the shoreward boundary. The only activities you can count on trails or bluffs are active shore-based hook and line fishing, where the fishing line is touching the waters of the MPA or control site. In some cases limited access prevents surveyors from moving steadily along a transect route. Instead, they must visit predefined vista points and scan the coast to document activities occurring across a wide area. For all vista points, the time spent observing at each vista point should be the smallest amount of time needed to count all activities across the defined transect.
7) As you walk, record any activity in the appropriate categories when you pass the people doing that activity. For example, if you see someone surfing 50 feet ahead of you, do not count that activity until you pass the person who is surfing. People's activities may change from the time you first see them until the time you pass them, so to maintain scientific consistency, you should only record the activity you see them doing when you pass them. Count every single person you see, except in the case of boats (a boat gets one tally regardless of the number of people aboard). Each person or boat counted gets a tally in only one category. Also, domestic animals are tallied separately from their owner. For example, if a man is walking his leashed dog down the beach, this counts as one "Beach Recreation" and one "Domestic Animal".
8) Do not count any activity that is happening behind you. Only count activity that is happening between you and the stop point as you pass them. However, for example, if a person is running along the beach in the same direction you are walking and he passes you from behind, you should count that activity as running when he passes you (as long as you have not counted him earlier in the survey). Try not to double-count people if their activity changes.
9) All activities should be counted as you pass them and as they are happening. The only activities you can count if the person is not actively doing those activities in the water are

surfing and SCUBA diving. If a person is in a wetsuit and is walking with his surfboard along the beach (and he has no other beach recreational items with him), it can be assumed that his only activity is or was surfing. The same can be assumed for a person walking along the beach in a wetsuit and SCUBA gear. However, if a person is next to a surfboard lying on the sand and he or she is in clothes or a bathing suit (NOT a wetsuit), you should count that activity as “beach recreation” because we cannot assume that his/her only activity is or was surfing.

10) Wildlife watching should only be counted if the activity is taking place on the beach or in the water- not on bluffs or trails. Wildlife watching is indicated by the use of binoculars or overt pointing and gesturing towards wildlife (such as whales, sea lions, etc.).
11) When recording consumptive boat fishing activities, make sure to properly mark if a person is inactive or active in the appropriate section of the data sheet. Active fishing is indicated by lines in the water, traps or nets set or pulled up from the water, and divers with fishing gear entering or exiting the water. Inactive fishing is when fishing gear is visible or present on board, but not baited, in the water, or being used. It is allowed for a person to transit through an MPA with fishing gear to areas where fishing is permitted as long as the gear is not baited or ready to be used to fish. Therefore, for example, we need to differentiate between a kayaker with a rod/reel on board who is legally transiting through an MPA, and a kayaker with a rod/reel that is actively fishing inside the MPA.
12) When you arrive at the end point, stand facing the ocean and use your compass or GPS to orient yourself in the accurate direction for the end of the survey. Imagine a line that extends out to the ocean as the border of the survey segment, and use this to accurately record only the activities within the survey area on your data sheet.
13) Write the end time at the top of the data sheet.

# MPA Watch Datasheet (Land-Based)

MPA WATCH LAND-BASED DATASHEET

| Name(s): | | Date: ___/___/_____ | Transect ID: |
|---|---|---|---|
| Start Time: | End Time: | Clouds: clear (0%)/ partly cloudy (1-50%)/ cloudy (>50%cover) | Precipitation: yes / no |
| Air Temperature: cold / cool / mild / warm / hot | | Wind: calm / breezy / windy | Tide Level: low / med / high |
| Visibility: perfect / limited / shore only | | Beach Status: open / posted / closed / unknown | |

| **On-Shore Activities** | Rocky | Sandy |
|---|---|---|
| Recreation (walking, resting, playing, etc. NOT tidepooling) | | |
| Wildlife Watching | | |
| Domestic animals on-leash | | |
| Domestic animals off-leash | | |
| Driving on the Beach | | |
| Tidepooling (not collecting) | | |
| Hand collection of biota | | |
| Shore-based hook and line fishing | | |
| Shore-based trap fishing | | |
| Shore-based net fishing | | |
| Shore-based spear fishing | | |

| **Off-Shore Activities (Non-Boating)** | |
|---|---|
| Offshore Recreation (e.g., swimming, bodysurfing) | |
| Board Sports (e.g., boogie boarding, surfing) | |
| Stand-Up Paddle Boarding (alternatively can tally in paddle operated boat below) | |
| Non-Consumptive SCUBA and snorkeling | |
| Spear Fishing (free diving or SCUBA) | |
| Other Consumptive Diving (e.g., nets, poles, traps) | |

| **Boating** | **Recreational** | | **Commercial** | | **Unknown** | |
|---|---|---|---|---|---|---|
| | Inactive | Active | Inactive | Active | Inactive | Active |
| Boat Fishing - Traps | | | | | | |
| Boat Fishing - Line | | | | | | |
| Boat Fishing - nets | | | | | | |
| Boat Fishing - Dive | | | | | | |
| Boat Fishing - Spear | | | | | | |
| Boat Kelp Harvesting | | | | | | |
| Unknown Fishing Boat | | | | | | |
| Paddle Operated Boat (can separately tally stand-up paddle boarding above under board sports) | | | | | | |
| Dive Boat (stationary – flag up) | | | | | | |
| Whale Watching Boat | | | | | | |
| Work Boat (e.g., life-guard, DFW, research, coast guard) | | | | | | |
| Commercial Passenger Fishing Vessel (5+ people) | | | | | | |
| Other Boating (e.g., powerboat, sail boat, jet ski) | | | | | | |

**Comments**

Did you observe: ☐ scientific research; ☐ education; ☐ beach closure; ☐ large gatherings (e.g., beach cleanup); ☐ enforcement activity

Describe below and provide counts of individuals involved where possible, and whether it took place on rocky or sandy or sandy substrate.

Did you report a violation: ☐ yes ☐ no If yes, how many violations did you report _____

Who did you report the violation to (mark all that apply): ☐ DFW ☐ State Parks ☐ other entity (e.g., lifeguard, harbor patrol)

Which method did you use to report your violation (mark all that apply): ☐ phone call ☐ text ☐ mobile app ☐ website ☐ email ☐ in person

mpawatch.org

**TO REPORT POTENTIAL VIOLATIONS CALL CalTIP: 888-334-2258**

*Figure 7: MPA Watch Land-Based Datasheet*

## MPA Watch Survey Protocol (Boat-Based)

Boat-based surveys are currently conducted in the South Coast region by LA Waterkeeper and have been since the South Coast MPA network of MPAs were established January 1, 2012. At this time, Santa Barbara Channelkeeper also conducts boat-based surveys. These surveys focus on capturing all boating activity and all fishing from shore activities in defined transects inside and outside of MPAs.

### Survey Crew Positions and Equipment:

- Boat Operator
- Data Scribe – Data Sheet and Writing Instrument
- Distance Finder Operator – Distance Finder
- Spotter - Binoculars
- Photographer - Camera
- GPS Unit Operator – Handheld GPS
- IPad Data Scribe – IPad or Tablet

### Methodology

Transects are run at a speed of approximately 10 knots and roughly a half-mile from shore, and observations are made at a safe, unobtrusive distance from an observed vessel, moving to position the observed vessel on a heading directly North, South, East, or West from your vessel.

For each vessel or onshore fishers the following are documented in the data tally sheet:

- The time of sighting is noted.
- Your vessel's GPS position is noted.
- The compass heading direction of the observed vessel from your vessel is noted
- The distance of the observed vessel from your vessel is noted.
    - MPA coverage area is to three miles off-shore if visibility allows. It is suggested that if a violation is suspected, spending time and gas to get a closer look at vessel type, activity, and to possibly collect more accurate data be done on a case-by-case basis.
- The observed vessel type is noted, commercial or recreational, as are any onshore fishers.
- The activity on the observed vessel is noted, as are activities of any onshore fishers.
- The quantity of observed vessels or onshore fishers is noted.
- Two Photos are taken of the observed vessel or fishers and that is noted.
    - These photos are taken for categorizing and clarifying activity and vessel type. Identifying characteristics should be obscured before any public posting.
- Any additional comments, including violations observed and reported, as well as other observations are noted.

### Data Analysis and Reporting

Currently, data are recorded in a separate database and represented in Google Earth and GIS mapping products to demonstrate the extent and location of observed boating and fishing activities. Data are then crosswalked into the MPA Watch information management system (IMS) and the webmapper.

# MPA Watch Datasheet (Boat-Based)

MPA WATCH

BOAT-BASED DATASHEET

Crew Names:

Name (data recorder):

Start Time: End Time:

Air Temperature: cold/cool/mild/warm/hot

Visibility: perfect (>1)/limited (>200yds<1mi)/poor (<200yds)

Date

Clouds: clear (0%)/partly cloudy (1-50%)/cloudy (> 50%)

Wind: calm/breezy/windy

Sea state: Calm sea (0-2ft); 2-4ft swell; 4-6ft swell; Too rough to observe

Transect ID

Precipitation yes/no

| Vessel ID # | Time | Lat/Long | Heading | Distance (yds) | Vessel Type | Vessel | Activity | Qty | # of photos | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | N.<br>W. | | | | | | | | |
| 2 | | N.<br>W. | | | | | | | | |
| 3 | | N.<br>W. | | | | | | | | |
| 4 | | N.<br>W. | | | | | | | | |
| 5 | | N.<br>W. | | | | | | | | |
| 6 | | N.<br>W. | | | | | | | | |
| 7 | | N.<br>W. | | | | | | | | |
| 8 | | N.<br>W. | | | | | | | | |
| 9 | | N.<br>W. | | | | | | | | |
| 10 | | N.<br>W. | | | | | | | | |

**Vessel Types**

| Commercial Fishing | Commercial Fishing: Net Boats | Comm. Non-Fishing | Recreational |
|---|---|---|---|
| CPFV<br>Lobster Boat<br>Trap Boat<br>Urchin Boat<br>Other | Trawler<br>Purse Seiner<br>Light Boat (Squid)<br>Gillnet<br>Other | Passenger Boat (Ferry, Cruise Ship, etc.)<br>Oil Tanker<br>Cargo Ship (Barge, Container)<br>Support Vessel (Tug, tender)<br>Res-Mil-Enf (Science or Gov or Enf)<br>Charter (Whale, Diving, Ecotour)<br>Other (Dredge, parasail, etc). | Sport Fishing Boat<br>Power Boat<br>Sailboat<br>Dive Boat<br>Shore Diving<br>On Shore<br>Kayak<br>Jet Ski<br>Other (Sup, canoe, etc.) |

**Activity**

Fishing
Not Fishing
Underway
Moored
Diving
Spearfishing
Other

**Comments**

Did you observe: □ scientific research □ education □ beach closure □ large gatherings □ enforcement activities

Did you report a violation: □ yes □ no If yes, how many? ___

Who did you report the violation to (mark all that apply)?
□DFW □ State Parks □Other entity (eg, lifeguard, harbor patrol).

Which method did you use to report your violation (mark all that apply)?
□ phone call □ text □mobile app □ website □ email □ in person

**TO REPORT POTENTIAL VIOLATIONS CALL CalTIP: 888-334-2258**

mpawatch.org

*Figure 8: MPA Watch Boat-Based Datasheet*

# Appendix B - MPAs Monitored by MPA Watch

## North Coast

*Table 2: MPAs Monitored in the North Coast*

| MPA | Partner |
|---|---|
| Big Flat SMCA | Legacy |
| Big River Estuary SMCA | California State Parks |
| Bodega Head SMCA | Legacy |
| Bodega Head SMR | Greater Farallones Association |
| Corte Madera Marsh SMP | Environmental Action Committee of West Marin |
| Del Mar Landing SMR | Greater Farallones Association |
| Drake's Estero SMCA | Environmental Action Committee of West Marin |
| Duxbury Reef SMCA | Environmental Action Committee of West Marin |
| Estero de Limantour SMR | Environmental Action Committee of West Marin<br>Greater Farallones Association |
| False Klamath Rock Special Closure | Eagle Eyes of False Klamath Cove |
| MacKerricher SMCA | Eagle Eyes of False Klamath Cove<br>California State Parks |
| Montara SMR | Greater Farallones Association |
| Point Arena SMR | Legacy |
| Point Cabrillo SMR | California State Parks |
| Point Resistance Rock Special Closure | Legacy |
| Point Reyes SMR | Environmental Action Committee of West Marin<br>Greater Farallones Association |
| Reading Rock SMCA | Eagle Eyes of False Klamath Cove<br>California State Parks |
| Reading Rock SMR | Eagle Eyes of False Klamath Cove |
| Russian Gulch SMCA | Eagle Eyes of False Klamath Cove<br>California State Parks |
| Russian River SMCA | Greater Farallones Association |
| Russian River SMRMA | Greater Farallones Association |
| Samoa SMCA | Eagle Eyes of False Klamath Cove<br>California State Parks |
| Sea Lion Cove SMCA | Greater Farallones Association |
| Sea Lion Gulch SMR | Legacy |
| South Cape Mendocino SMR | Legacy |
| South Humboldt Bay SMRMA | Eagle Eyes of False Klamath Cove |
| Stewarts Point SMR | Greater Farallones Association |
| Ten Mile SMR | Eagle Eyes of False Klamath Cove<br>California State Parks |
| Tr'uu-luu-k'wvt (Pyramid Point) SMCA | Tolowa Dee-ni' Nation |
| Van Damme SMCA | California State Parks |

## Central Coast

*Table 3: MPAs Monitored in the Central Coast*

| MPA | Partner |
|---|---|
| Año Nuevo SMCA | Greater Farallones Association, California State Parks |
| Asilomar SMR | Pacific Grove Museum of Natural History<br>California State Parks<br>Legacy |
| Cambria SMCA | Legacy |
| Kashtayit SMCA | Santa Barbara Channelkeeper<br>California State Parks |
| Lovers Point SMR | Pacific Grove Museum of Natural History<br>Legacy |
| Morro Bay SMR | California State Parks |
| Morro Bay SMRMA | Legacy |
| Natural Bridges SMR | California State Parks |
| Piedras Blancas SMR | Legacy |
| Point Buchon SMR | Legacy |
| Point Lobos SMR | California State Parks<br>Legacy |

## South Coast

*Table 4: MPAs Monitored in the South Coast*

| MPA | Partner |
|---|---|
| Abalone Cove SMCA | Los Angeles Waterkeeper<br>Heal the Bay |
| Anacapa Island SMCA | Santa Barbara Channelkeeper |
| Anacapa Island SMR | Santa Barbara Channelkeeper |
| Arrow Point to Lion Head Point (Catalina Island) SMCA | Legacy |
| Blue Cavern Offshore (Catalina Island) SMCA | Legacy |
| Blue Cavern Onshore (Catalina Island) SMCA | Heal the Bay |
| Bolsa Bay SMCA | Legacy |
| Bolsa Chica Basin SMCA | Legacy |
| Cabrillo SMR | WILDCOAST |
| Campus Point SMCA | Santa Barbara Channelkeeper |
| Carrington Point SMR | Santa Barbara Channelkeeper |
| Casino Point (Catalina Island) SMCA | Heal the Bay |
| Cat Harbor (Catalina Island) SMCA | Heal the Bay |
| Crystal Cove SMCA | Orange County Coastkeeper<br>California State Parks |
| Dana Point SMCA | Orange County Coastkeeper |

| MPA | Partner |
|---|---|
| Footprint SMR | Santa Barbara Channelkeeper |
| Laguna Beach SMCA | Orange County Coastkeeper |
| Laguna Beach SMR | Orange County Coastkeeper |
| Long Point (Catalina Island) SMR | Legacy |
| Lover's Cove (Catalina Island) SMCA | Heal the Bay |
| Matlahuayl SMR | WILDCOAST |
| Naples SMCA | Santa Barbara Channelkeeper |
| Point Dume SMCA | Los Angeles Waterkeeper<br>Heal the Bay |
| Point Dume SMR | Los Angeles Waterkeeper<br>Heal the Bay |
| Point Vicente SMCA | Los Angeles Waterkeeper<br>Heal the Bay |
| San Diego-Scripps Coastal SMCA | WILDCOAST |
| Scorpion SMR | Santa Barbara Channelkeeper |
| Skunk Point SMR | Santa Barbara Channelkeeper |
| South La Jolla SMCA | WILDCOAST |
| South La Jolla SMR | WILDCOAST |
| Swami's SMCA | WILDCOAST<br>California State Parks |
| Tijuana River Mouth SMCA | WILDCOAST |
| Upper Newport Bay SMCA | Orange County Coastkeeper |

# Appendix C - MPA Watch Partner Organizations

## California State Parks - Statewide

California State Parks' MPA Outreach and Education Project is funded by a Once Through Cooling grant from the Ocean Protection Council. One of the OTC grant deliverables includes MPA Watch trainings and data collection in participating coastal districts. Additionally, we have successfully set up 16 new MPA Watch transects on State Parks' properties in Humboldt, Mendocino, Monterey, San Luis Obispo, and Santa Barbara Counties.

## Tolowa Dee-ni' Nation - Del Norte County

Tolowa Dee-ni' Nation has been successfully conducting MPA Watch surveys since 2018 with predominantly Tribal volunteers.  MPA Watch protocols have also been taught to the Netlh-'ii~-ne Stewards, Tribal citizens trained in stewarding their ancestral lands, as part of the Tribal Marine Stewards Network.

## Eagle Eyes of False Klamath Cove/Yurok Nation - Del Norte, Humboldt, and Mendocino Counties

Eagle Eyes of False Klamath Cove (EEOFKC) is a scientific observational survey of human uses of coastal and marine resources at False Klamath Cove and has been conducted since July, 2017. EEOFCK partnered with MPA Watch in 2018 to incorporate MPA Watch data collection into the EEOFCK survey protocol. Our goal is for the local Tribal governments and the North coast communities to gather baseline data that ensure a healthy ocean now and forever more. EEOFKC have approximately 25 surveyors and volunteers that include but are not limited to local tribal members from Tolowa, Yurok, Karuk and Hoopa tribes. Although all are welcome, we are proud of having ninety percent local native participation.

## Environmental Action Committee of West Marin - Marin County

EAC's Marin MPA Watch program was established in late 2013 as a collaboration between the Environmental Action Committee of West Marin, Point Reyes National Seashore, and the California Academy of Sciences. The Marin MPA Watch program monitors human activities adjacent to and within the Point Reyes State Marine Reserve, Point Reyes State Marine Conservation Area, Point Reyes Special Closure, Estero de Limantour State Marine Reserve, Drakes Estero State Marine Conservation Area, Duxbury Reef State Marine Conservation Area, and the Corte Madera Marsh.

## Greater Farallones Association - San Mateo, San Francisco, Marin, Sonoma, and Mendocino Counties

Greater Farallones Association partners with Greater Farallones and Cordell Bank National Marine Sanctuaries to conserve the wildlife and habitats of the north-central California coast through scientific research, environmental education, and community-based conservation. The Beach Watch program collects wildlife, pollution, and human use data since 1993, became a data contributing partner of MPA Watch in 2014.

## Pacific Grove Museum of Natural History - Monterey County

The Pacific Grove Museum of Natural History inspires discovery, wonder, and stewardship of our natural world. We envision a community of curious minds, engaged in discovering the natural heritage and cultural legacy that exist today on the Central California Coast. The Museum is a catalyst for conservation and a valued learning resource in this region, facilitating active inquiry for all ages.

## Santa Barbara Channelkeeper - Santa Barbara County

Santa Barbara Channelkeeper engages community scientists in conducting surveys in three coastal MPAs in southern Santa Barbara County—Campus Point State Marine Conservation Area, Naples State Marine Conservation Area, and Kashtayit State Marine Conservation Area. Channelkeeper also conducts boat-based surveys of the coastal MPAs and MPAs at the northern Channel Islands.

## Heal the Bay - Los Angeles County

Heal the Bay leads the Los Angeles County shore-based MPA Watch program and has trained hundreds of volunteers and collected thousands of surveys since 2011. Heal the Bay volunteers conduct valuable scientific surveys along beautiful beaches and bluffs at MPAs in Malibu and Palos Verdes. These surveys collect information on activities taking place, from swimming and fishing to tide pooling, and the data is shared with MPA agencies to inform important management and legislative decisions.

## Los Angeles Waterkeeper - Los Angeles County

LA Waterkeeper runs a MPA Boat-Based Survey program documenting all boating activity and all fishing activity onshore and on the water serving to support MPA enforcement as a LA's Community Enforcement Liaison.

## Orange County Coastkeeper - Orange County

The mission of Orange County Coastkeeper is to protect and promote water resources that are swimmable, drinkable, fishable, and sustainable. We are a nonprofit clean water organization that serves as a proactive steward of our fresh- and saltwater ecosystems. The MPA Watch program is integrated across our programs to provide the community and agencies the information needed to protect our marine resources.

## WILDCOAST - San Diego County

WILDCOAST is an international team that conserves coastal and marine ecosystems and addresses climate change through natural solutions. WILDCOAST coordinates the statewide MPA Watch network, as well as manages MPA Watch in San Diego County and all legacy sites.