



Marine Protected Area (MPA) Watch
Regional Report
Marin County
January 1, 2023 – December 31, 2023



MPA Watch is a statewide collaborative effort to collect critical human use data to enhance the management and conservation of marine protected areas (MPAs). MPA Watch data informs the management, enforcement, and science of California's MPAs and allows us insight on how human uses are changing as a result of MPA implementation. By involving local communities in this important work, MPA Watch programs inspire and empower stewardship, and educate California communities about ocean ecosystems. MPA Watch trains volunteers to observe and collect unbiased data on coastal and marine resources use. The Marin County Marine Protected Area Watch Program, organized by Environmental Action Committee of West Marin, engages community scientists in four MPAs in Marin County and one adjacent site.

EXECUTIVE SUMMARY

This report includes MPA Watch data from January 1 – December 31, 2023. During this period, 631 surveys were conducted by 26 volunteers (including 18 students in a high school class for one semester) who observed 7,091 activities over 1,100 survey miles.

- Point Reyes State Marine Reserve (Point Reyes SMR), Estero de Limantour State Marine Reserve (Estero de Limantour SMR), and Limantour Beach Control (Control PRSouth) are accessed through the Point Reyes National Seashore.
- Duxbury Reef State Marine Conservation Area (Duxbury SMCA) is accessed through Marin County Open Space.
- Corte Madera Marsh State Marine Park (Corte Madera Marsh SMP) is accessed through the city of Corte Madera.

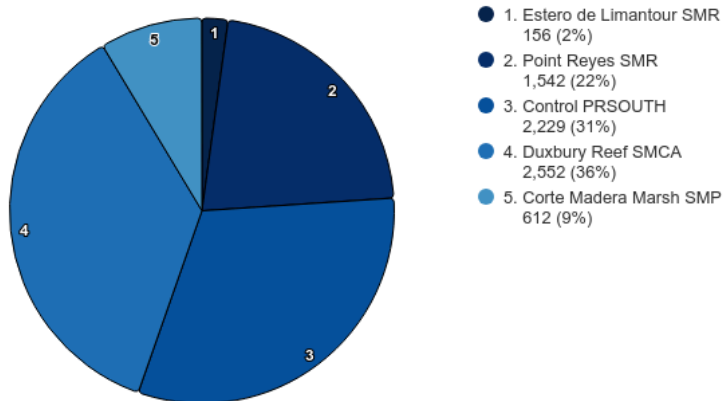
HUMAN USE OF MPAS

January 1, 2023 – December 31, 2023

OVERVIEW

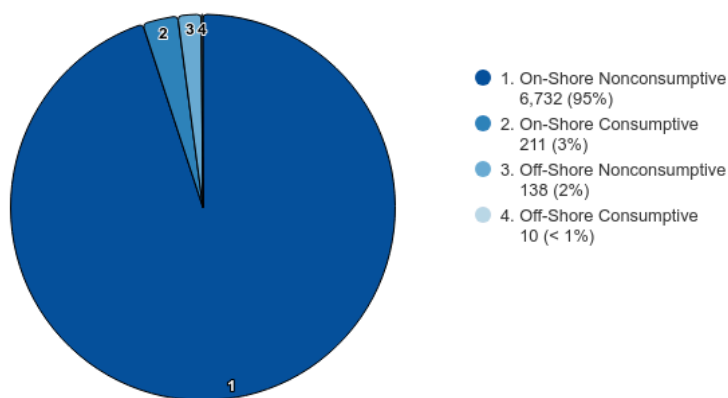
Top 5 MPAs by All Activity

January 1, 2023 - December 31, 2023
7,091 total activity events



All MPAs Combined

January 1, 2023 - December 31, 2023
7,091 activity events



ACTIVITY CLASSIFICATIONS

On-Shore - Activities that take place on a sandy or rocky beach. Excludes bluffs, trails, sea walls, parking lots, or other man-made structures. Includes recreation, tidepooling, shore-based fishing, etc.

Off-Shore - Activities that take place offshore, typically in knee-deep water or deeper. Includes surfing, SCUBA diving, kayaking, boat fishing, etc.

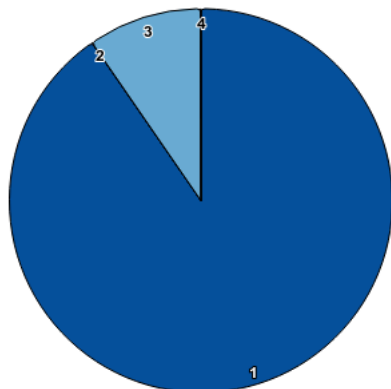
Consumptive - An activity in which a natural resource (i.e. fish, kelp, shells) is being collected.

Non-Consumptive - An activity in which a natural resource is not collected.

ACTIVITY BY MPA

Estero de Limantour SMR

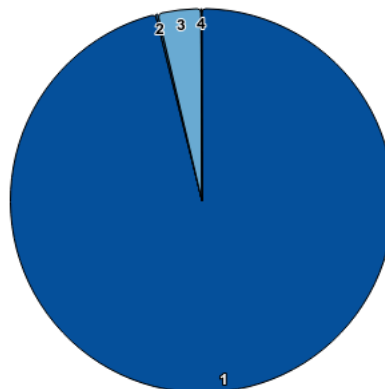
January 1, 2023 - December 31, 2023
156 activity events



- 1. On-Shore Nonconsumptive
141 (90%)
- 2. On-Shore Consumptive
0 (< 1%)
- 3. Off-Shore Nonconsumptive
15 (10%)
- 4. Off-Shore Consumptive
0 (< 1%)

Point Reyes SMR

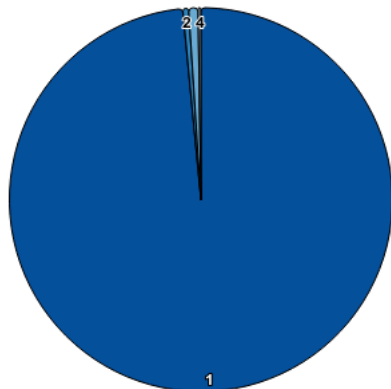
January 1, 2023 - December 31, 2023
1,542 activity events



- 1. On-Shore Nonconsumptive
1,482 (96%)
- 2. On-Shore Consumptive
3 (< 1%)
- 3. Off-Shore Nonconsumptive
56 (4%)
- 4. Off-Shore Consumptive
1 (< 1%)

Control PRSOUTH

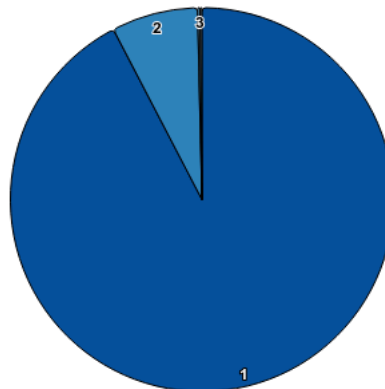
January 1, 2023 - December 31, 2023
2,229 activity events



- 1. On-Shore Nonconsumptive
2,195 (98%)
- 2. On-Shore Consumptive
11 (< 1%)
- 3. Off-Shore Nonconsumptive
18 (1%)
- 4. Off-Shore Consumptive
5 (< 1%)

Duxbury Reef SMCA

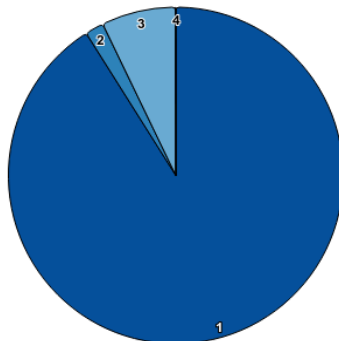
January 1, 2023 - December 31, 2023
2,552 activity events



- 1. On-Shore Nonconsumptive
2,357 (92%)
- 2. On-Shore Consumptive
186 (7%)
- 3. Off-Shore Nonconsumptive
5 (< 1%)
- 4. Off-Shore Consumptive
4 (< 1%)

Corte Madera Marsh SMP

January 1, 2023 - December 31, 2023
612 activity events

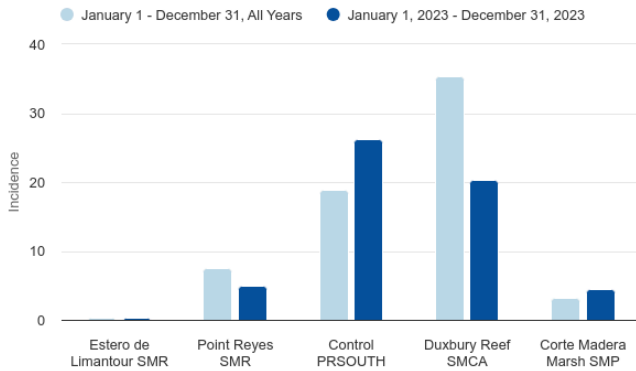


- 1. On-Shore Nonconsumptive
557 (91%)
- 2. On-Shore Consumptive
11 (2%)
- 3. Off-Shore Nonconsumptive
44 (7%)
- 4. Off-Shore Consumptive
0 (< 1%)

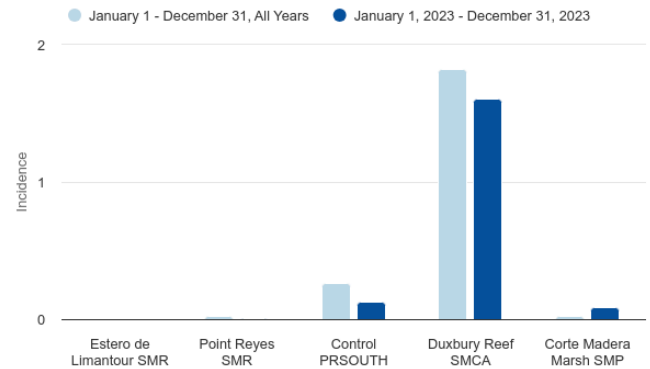
ACTIVITY INCIDENCE BY MPA

INCIDENCE BAR CHARTS

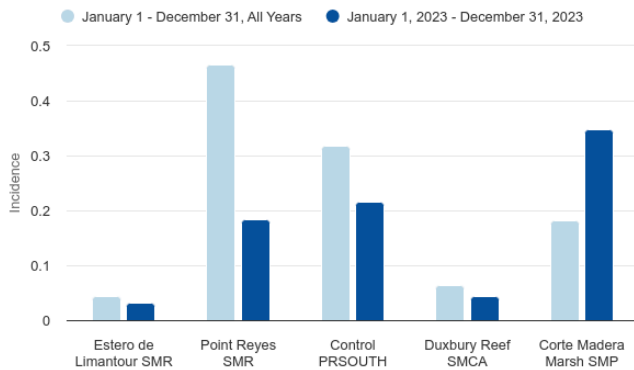
On-Shore, Non-Consumptive



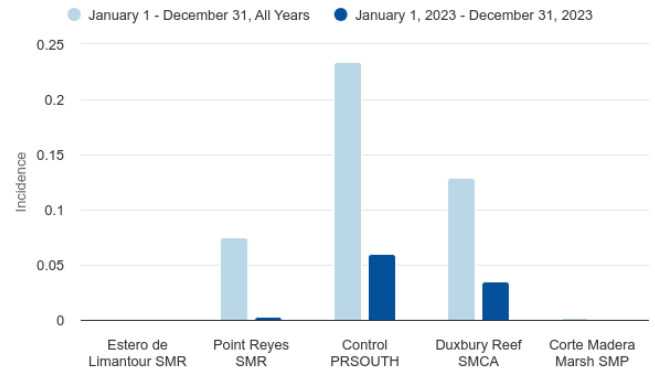
On-Shore, Consumptive



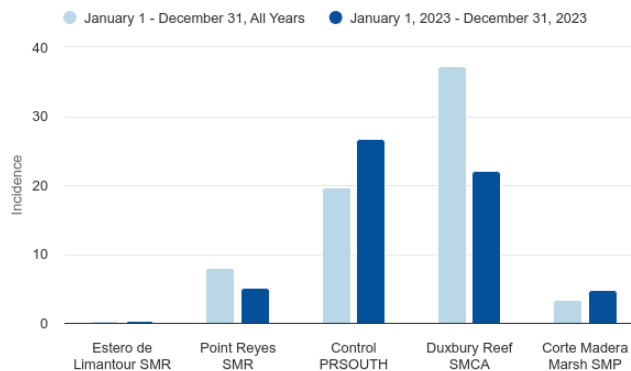
Off-Shore, Non-Consumptive



Off-Shore, Consumptive



All Activity



The above charts show incidence values for each MPA monitored by MPA Watch in Marin County.
Incidence is calculated as number of activities recorded divided by total survey-miles.

INCIDENCE TABLES

MPA	On-Shore			
	Non-Consumptive		Consumptive	
	January 1 December 31 All Years	January 1, 2023 through December 31, 2023	January 1 December 31 All Years	January 1, 2023 through December 31, 2023
Estero de Limantour SMR	0.3	0.3	0.0	0.0
Point Reyes SMR	7.5	4.9	0.0	0.0
Control PRSOUTH	18.9	26.3	0.3	0.1
Duxbury Reef SMCA	35.3	20.4	1.8	1.6
Corte Madera Marsh SMP	3.2	4.4	0.0	0.1
All MPAs Combined	8.4	6.1	0.2	0.2

MPA	Off-Shore			
	Non-Consumptive		Consumptive	
	January 1 December 31 All Years	January 1, 2023 through December 31, 2023	January 1 December 31 All Years	January 1, 2023 through December 31, 2023
Estero de Limantour SMR	0.0	0.0	0.0	0.0
Point Reyes SMR	0.5	0.2	0.1	0.0
Control PRSOUTH	0.3	0.2	0.2	0.1
Duxbury Reef SMCA	0.1	0.0	0.1	0.0
Corte Madera Marsh SMP	0.2	0.3	0.0	0.0
All MPAs Combined	0.2	0.1	0.1	0.0

MPA	Total	
	Combined	
	January 1 December 31 All Years	January 1, 2023 through December 31, 2023
Estero de Limantour SMR	0.3	0.3
Point Reyes SMR	8.0	5.1
Control PRSOUTH	19.7	26.7
Duxbury Reef SMCA	37.3	22.0
Corte Madera Marsh SMP	3.4	4.9
All MPAs Combined	8.8	6.4

NOTES ON CALCULATING INCIDENCE

The baseline rate for the reporting period was calculated by summing the total use count for each category during the same period from each previous year and dividing this value by the transect miles surveyed at each site. The miles surveyed were calculated by first identifying the length of each transect for all the MPAs in question and multiplying the length of the transect by the number of surveys that had been taken along that transect during the same time period. For MPAs with multiple transects, the total distance traveled for each transect within the MPA were summed together to get the total miles surveyed within that MPA.

BREAKDOWN BY MPA

This report includes MPA Watch data from January 1 – December 31, 2023. The data is collected by trained on-shore observers and is organized into categories that highlight on-shore and off-shore consumptive and non-consumptive uses at MPAs located in Marin County.

Data collection for Point Reyes SMR in the first half of 2023 was limited due beach closure and access restrictions at Drakes Beach, where we surveyed Point Reyes SMR and part of Estero de Limantour. In 2023, Drakes Beach was closed because of elephant seal pupping January 23 to April 8, and partly closed until June 12th.

Estero de Limantour State Marine Reserve (Estero de Limantour SMR): This MPA is observed from two survey transects within Point Reyes National Seashore and accessed from either 1) Limantour Beach and walking north-west, or 2) Drakes Beach and walking east. This MPA does not allow any on-shore or offshore consumptive uses.

Volunteers conducted 122 surveys in this MPA and recorded a use rate of 0.3 activities per mile. This is the same as 2022.

Similar to previous years, 100% of the observations were non-consumptive. 90% of the activities were on-shore which is an increase from 2022 when 67% of activities were on-shore. Non-consumptive observations in this MPA included sandy beach recreation and wildlife viewing, and offshore surfing and windsurfing.

Dogs are restricted from this MPA as it is critical habitat for the Western Snowy Plover and the seasonal presence of marine mammals. Volunteers observed zero (0) animals on- or off-leash. There was one potential violation, driving on beach with a bicycle recorded in 2023.

Point Reyes State Marine Reserve (Point Reyes SMR)

This MPA is observed from two survey transects within the Point Reyes National Seashore and accessed from either 1) Limantour Beach and walking north-west, or 2) Drakes Beach. Access at Drakes Beach was closed from January 23 to April 8, due to elephant seal pupping and partially until June 12th for remaining seal pups and molting. This MPA does not allow any on-shore or offshore consumptive uses.

In 2023, volunteers conducted 209 surveys of this MPA (compared to 120 surveys in 2022). Surveys at this MPA recorded a use rate of 5.1 activities per mile surveyed. This was a slight decrease compared to the 5.6 activities per mile in 2022 (and 6.6 activities in 2021). 96% of the observations were on-shore, non-consumptive: sandy beach recreation (80%), wildlife viewing (14%), and tidepooling on the rocky outcrops (1%) and animals off-leash (1%). Off-shore recreation, sailing and other boating each consisted of 1% of observations. There were 3 observations of offshore, but inactive boat fishing.

Dogs are restricted from beach access at Drakes Beach (sandy beach access to this MPA) and at the north-west portion of Limantour Beach as it is critical habitat for the Western Snowy Plover and the seasonal presence of marine mammals. There were 13 observations of animals off-leash. In total, there were 3 reported observations of potential violations (fishing from shore) in 2023.

Volunteers accessing this MPA from Drakes Beach typically find significant quantities of plastic marine debris that is a mix of small plastic particles, nurdles, fishing gear, single-use foodware and plastic packaging, ropes, tires, shotgun shells, and occasionally, hazardous medical waste (i.e. needles).

Limantour Beach (Control PRSOUTH)

This MPA is observed within the Point Reyes National Seashore and accessed at Limantour Beach. This area borders an MPA, therefore consumptive uses, like fishing from shore and off-shore is allowable within the appropriate season and with licenses.

Volunteers conducted 38 surveys in this MPA control site, and recorded a use rate of 26.7 activities per mile surveyed. This is an increase compared to last year of 35 surveys and a use rate of 15.8 in 2022, which was similar to 2021's activity rate of 14.7 per mile. In 2022, 98% of the observations in Control PRSouth were on-shore, non-consumptive uses (91% sandy beach recreation), and the remaining top non-consumptive activities include animals on (4%) and off leash (2%) and wildlife viewing (1%). Less than 1% of observations were consumptive, consisting of hook fishing from shore.

Leashed dogs are allowed to access the southern portion of Limantour Beach. Dogs are restricted from the north-west portion of the beach as it is critical habitat for the Western Snowy Plover and the seasonal presence of marine mammals. Volunteers recorded 139 animal observations (94 on-leash, 45 off-leash). This is a significant increase from 2022, when 83 animals on and off leash were observed.

Duxbury Reef State Marine Conservation Area (Duxbury SMCA)

This MPA is observed from Marin County Parks and Open Space and Point Reyes National Seashore and accessed at Agate Beach, managed by Marin County Parks and Open Space. This MPA allows hook and line fishing from shore and abalone harvest with appropriate open season and licenses.

In 2023, 129 surveys were conducted. This is less than the number of surveys conducted in 2022 (138 surveys) but still much greater than 2021 (69 surveys), before the creation of the Duxbury Docent program in January 2022, through which docents conduct MPA Watch surveys during their shifts. Volunteers recorded 2,552 activities (similar to the previous year of 2,593 activities) with a use rate of 22.0 activities per mile surveyed, which is less than 2022's use rate of 23.4. The use rate was very high during 2021 (49.7 activities per mile) and 2020 (52.8 activities per mile) during the pandemic. Prior to 2020, the use rate was similar or lower: 2019

[29.4], 2018 [15.5]. However, Duxbury Reef and Agate Beach usually experience the highest use rate of all the MPAs monitored by Marin MPA Watch, except this year, when PR Control South's use rate was 26.7.

92% of observations in 2023 were onshore, non-consumptive uses. Non-consumptive tidepooling represented 54% (1,386) of observations (up from 48% in 2022), and sandy beach recreation represented 22% (571) of observations and rocky beach recreation was 6% (161).

Onshore consumptive activities during 2023 have increased to 6% (compared with 2% in 2022, 7% in 2021 and 11% in 2020). Onshore consumptive activities included 160 observations of hand collection of biota (only 16 hand collection observations in 2022) and 25 observations of hook fishing (compared to 32 observations of hook fishing in 2022). There were 4 observations of fishing documented.

The number of potential violations counted by volunteers was 259 in 2023 (greater than 151 in 2022) and 2 potential violations were reported. This is a much greater number of violations than any other Marin MPA survey site.

Leashed dogs are allowed on Agate Beach and Duxbury Reef. Volunteers recorded 185 dog observations (in 2022 it was 252). There were 93 on-leash dogs and 92 off-leash dogs. The ratio of on- to off-leash is roughly the same as the previous year.

Duxbury Reef SMCA continues to have a high use compared to other MPAs surveyed by Marin MPA Watch, accounting for 36% of all activities in Marin MPA Watch locations in one of the smallest survey areas. Duxbury Reef is a sensitive intertidal habitat where human impacts (trampling and collecting) have long-term negative impacts to habitat and species. The Duxbury Docent program was launched in January 2022 in response to the MPA Watch data showing high use and potential violations. There are approximately 18 active volunteers who were trained by local experts to educate visitors on rocky intertidal marine ecology, MPAs and tidepool stewardship practices.

Volunteer docents note that when they engaged with individuals who were collecting biota, they observed that most collecting was for observation and not for consumption, and most people appreciated learning about the impact and replacing the organisms.

Corte Madera Marsh State Marine Park (Corte Madera Marsh SMP)

This MPA is observed within the city limits of Corte Madera and accessed by the network of public trails at Corte Madera Ecological Reserve. This area is a State Marine Park and consumptive uses, like recreational hook and line fishing, are allowable within the appropriate season and licenses.

Volunteers conducted 133 surveys (up from 111 surveys last year) and recorded a use rate of 4.9 activities per mile surveyed (down from last year's 5.2 activities per mile). 91% of the

activities were on-shore, non-consumptive (95% in 2022), mostly including recreation (62%), animals on-leash (11% or 69) and off-leash (7% or 44), and biking (6% or 36). On-shore consumptive uses (2%) consisted of hook fishing, which is allowed at this site. Offshore, other boating accounted for 4% of activities (Golden Gate Commuter Ferry Boat and rowing).

Leashed dogs are allowed on the walking paths, but not in the wetland or marsh. Of the 133 surveys conducted, volunteers recorded 113 dog observations. No observations of dogs in the wetland were reported.

POTENTIAL VIOLATIONS

The rate of consumptive activities observed in all Marin MPA Watch sites remains relatively low (221 observations, less than 4% of total). In 2022, the rate was 2% of all activities; 2021, the rate of consumptive activities was 6%; in 2020 it was 7%; 2019 it was 2%; and 2018 it was 4%. The vast majority of consumptive activities come from Duxbury Reef (on-shore hook and line fishing, and especially, hand collection of biota).

Recurring issues with the illegal take and disturbance of tidepool organisms in Duxbury Reef SMCA is an ongoing problem during low tides; in 2023 there were 160 observations of hand collection. Evidence suggests consumptive activity rates are higher than reflected in the MPA Watch data (a snapshot estimate). Data from docent shift reports, which cover a longer shift time as opposed to a short MPA Watch survey time show additional violations. The numerous consumptive activities reported are mostly of collection for observation yet that has a significant detrimental impact on biota, even if the visitor returns the organisms to the reef. Docents' engagement with visitors who collect or pick up organisms for the most part is successful; with knowledge of the regulations and sensitivity of marine life, visitors cease handling and return the marine life to the tidepool.

With continuing outreach to educate the community through social media, other online platforms and direct docent engagement as well as tabling at the trailhead, we are working to inform visitors about tidepool stewardship practices before and during their visit. The ongoing high incidence of hand collection at Duxbury Reef indicates the need for additional educational approaches, including improved signage. In 2024, we will be piloting temporary signs to be placed by docents along the trail, to be removed at the end of each shift until permanent signs can be upgraded. We continue to communicate with Marin County Parks and Open Space, Point Reyes National Seashore, California Department of Fish and Wildlife, and the California Fish and Game Commission to inform these agencies about poaching activities and the need for increased enforcement presence.

NEXT STEPS

Marin MPA Watch continues to collect data in MPAs that are accessed from Marin County with a goal of two surveys per month, per MPA. In 2023, Marin MPA Watch trained more volunteers than prior years which resulted in the collection of additional surveys. In part, this was due to the larger team of Duxbury Docents conducting MPA Watch surveys during their shifts and the participation of a high school class at Corte Madera. We were not able to train a new cohort of Duxbury Docents this winter, but will do so in 2025, which MPA Watch volunteers to the team.

Public access to Drakes Beach was limited for a short time during the winter/spring of this year and will likely occur each year as elephant seals continue to use Drakes Beach for pupping. We have one dedicated and very active volunteer at Drakes Beach who contributes many surveys, and we will continue outreach to recruit more volunteers at Drakes Beach and Limantour Beach in 2024.

In 2021, an EAC intern piloted a Spanish language MPA Watch training, including translation of all printed materials. We have not yet recruited bilingual staff but we aim to contract Spanish speaking staff to re-initiate outreach and training in Spanish this coming summer.

Marin MPA Watch intends to collaborate with the California Department of Fish and Wildlife to distribute MPA Watch reports to regional managers in order to improve the management and enforcement of MPAs. Additionally, Marin MPA Watch participates in the Intercept Survey Working Group, which aims to pilot an additional survey this coming year, to gain more demographic information on visitors in MPAs. MPA Watch is also looking to expand its network of partner organizations to enhance the scale and scope of MPA monitoring across California.

Each year, MPA Watch makes our human use data available on their website to make it accessible to partners, resource agencies, municipalities, and other interested parties. One of the hopes of MPA Watch is that volunteers and community members help spread knowledge and awareness of MPAs to the communities that surround them, inspiring marine stewardship in our communities.

ADDITIONAL INFORMATION

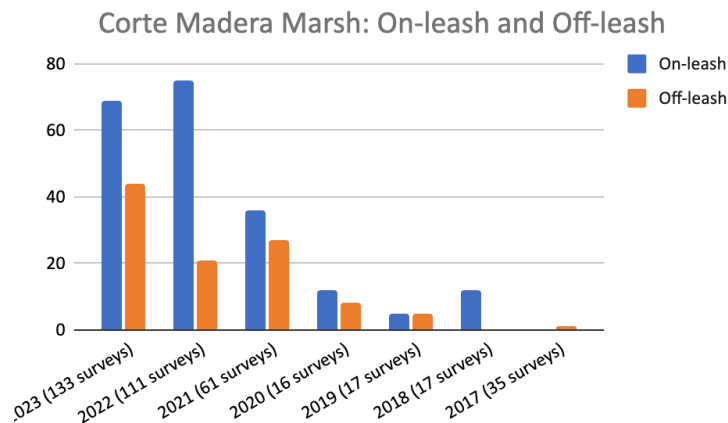
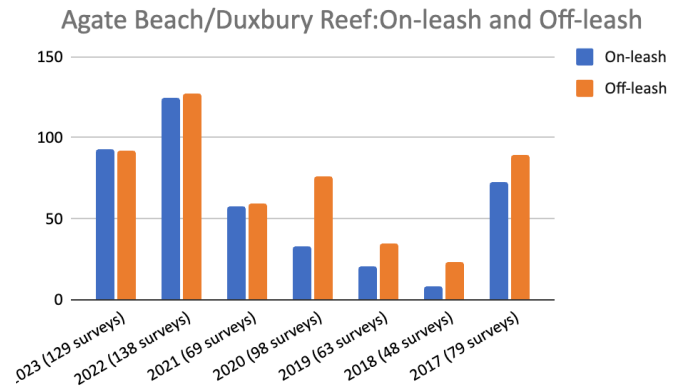
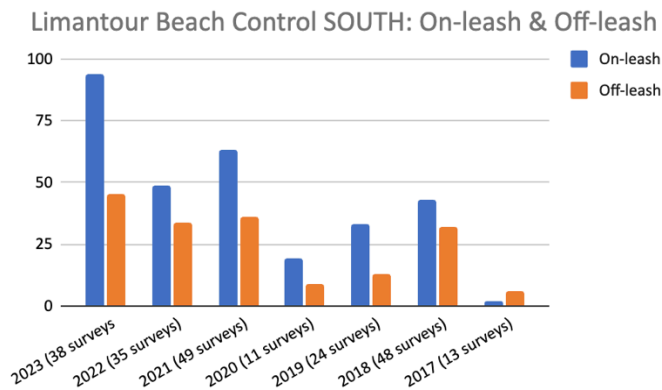
For additional information on MPA Watch, including survey sites, participating organizations, protocols and datasheets, media kit, and how to get involved, please visit mpawatch.org. Connect with MPA Watch on social media @MPAWatchOrg.

For additional information regarding MPAs and regulations specific to the various classifications of MPAs please visit wildlife.ca.gov/MPAs. If you see an activity that violates MPA regulations, please call CalTip to report the violation at (888) 334-2258.

Insert information on your organization

Add any additional information your organization would like to include here. e.g. pictures, funder acknowledgement, etc.

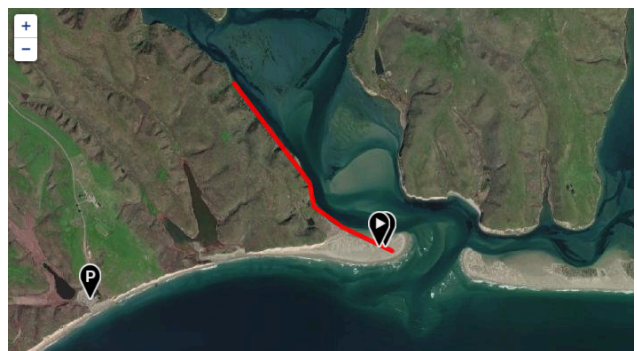
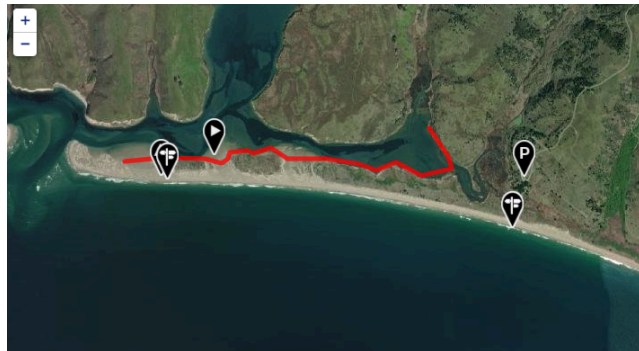
3. GRAPHS of dog use trends at Limantour Beach, Corte Madera Marsh, and Agate Beach/Duxbury Reef



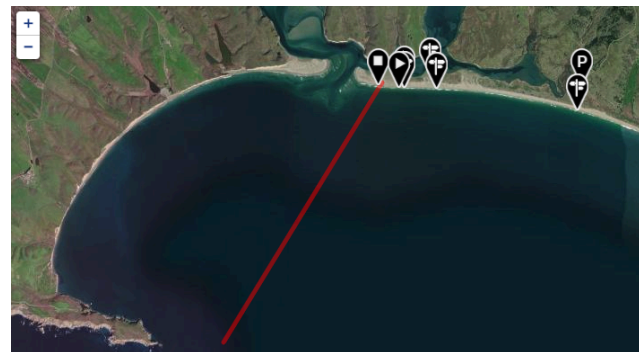
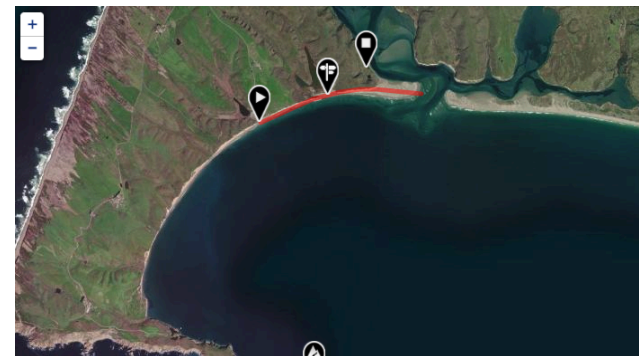
4. MAPS

*Note: Red lines imply the observation edges (Estero de Limantour, Point Reyes SMR and Corte Madera Marsh) and for others, walking pathways for the transects (Point Reyes SMR, Limantour Beach, Duxbury Reef) and Corte Madera Marsh.

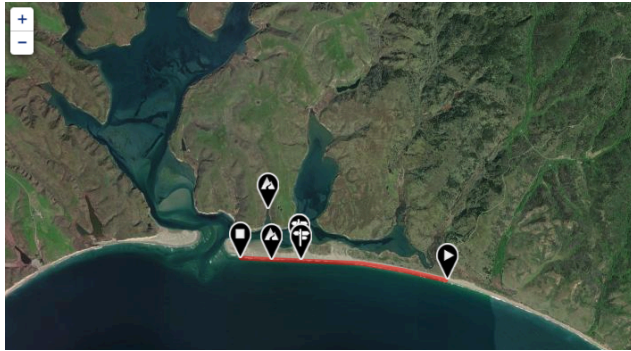
Estero de Limantour State Marine Reserve (Estero de Limantour SMR):



Point Reyes State Marine Reserve (Point Reyes SMR)



Limantour Beach (Control PRSOUTH)



Duxbury Reef State Marine Conservation Area (Duxbury SMCA)



Corte Madera Marsh State Marine Park (Corte Madera Marsh SMP)

