



Marine Protected Area (MPA) Watch Regional Report

Marin County
January 1, 2024 – December 31, 2024

Map of Region’s MPAs



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, 2024. During this period, this program had fewer volunteers and surveys than last year. 315 surveys were conducted (50% of 2023) by 34 volunteers (plus 15 high school students who were trained and will survey in 2025), which is fewer than last year (55 volunteers in 2023). In 2024, volunteers observed 4,959 activities over 570 survey miles (compared to 7,091 activities and 1,100 survey miles in 2023).



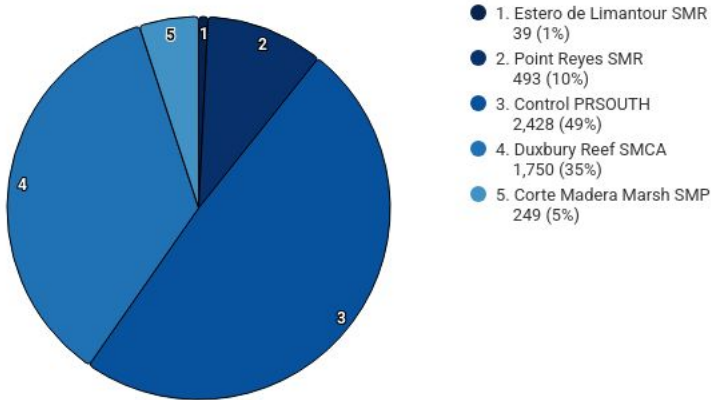
- Point Reyes State Marine Reserve (Point Reyes SMR), Estero de Limantour State Marine Reserve (Estero de Limantour SMR), and Limantour Beach Control (Control PRSouth) are accessed through the Point Reyes National Seashore.
- Duxbury Reef State Marine Conservation Area (Duxbury SMCA) is accessed through 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 - December 31, 2024)

OVERVIEW

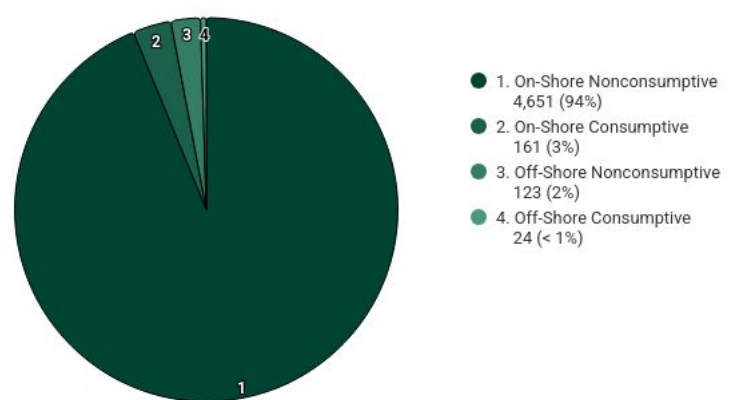
Top 5 MPAs by All Activity

January 1, 2024 - December 31, 2024
4,959 total activity events



All MPAs Combined

January 1, 2024 - December 31, 2024
4,959 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.

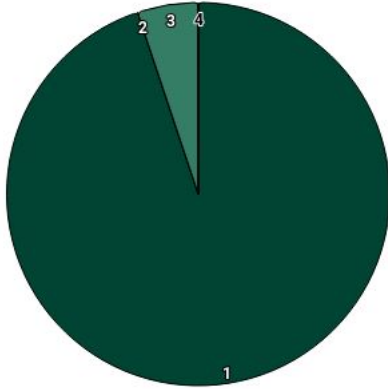
Consumptive - An activity in which a natural resource (i.e. fish, kelp, shells) is being collected.

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

ACTIVITY BY MPA

Estero de Limantour SMR

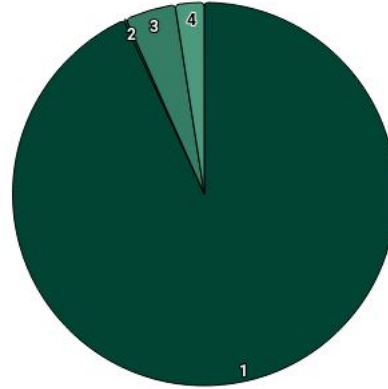
January 1, 2024 - December 31, 2024
39 activity events



- 1. On-Shore Nonconsumptive
37 (95%)
- 2. On-Shore Consumptive
0 (< 1%)
- 3. Off-Shore Nonconsumptive
2 (5%)
- 4. Off-Shore Consumptive
0 (< 1%)

Point Reyes SMR

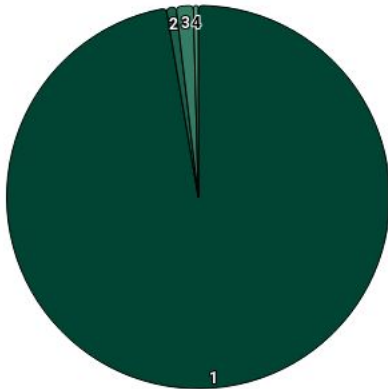
January 1, 2024 - December 31, 2024
493 activity events



- 1. On-Shore Nonconsumptive
459 (93%)
- 2. On-Shore Consumptive
1 (< 1%)
- 3. Off-Shore Nonconsumptive
21 (4%)
- 4. Off-Shore Consumptive
12 (2%)

Control PRSOUTH

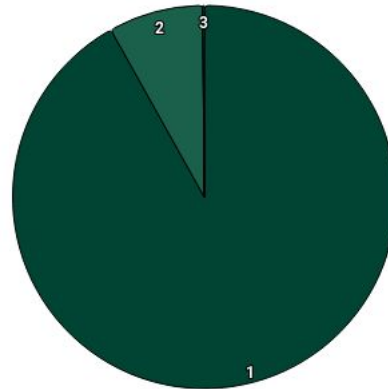
January 1, 2024 - December 31, 2024
2,428 activity events



- 1. On-Shore Nonconsumptive
2,363 (97%)
- 2. On-Shore Consumptive
20 (1%)
- 3. Off-Shore Nonconsumptive
35 (1%)
- 4. Off-Shore Consumptive
10 (< 1%)

Duxbury Reef SMCA

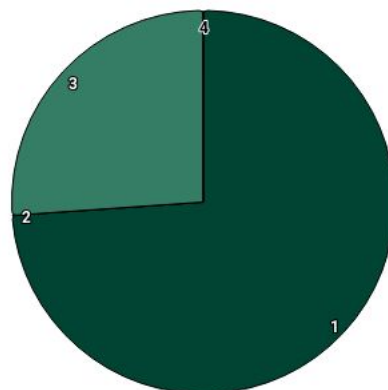
January 1, 2024 - December 31, 2024
1,750 activity events



- 1. On-Shore Nonconsumptive
1,608 (92%)
- 2. On-Shore Consumptive
140 (8%)
- 3. Off-Shore Nonconsumptive
0 (< 1%)
- 4. Off-Shore Consumptive
2 (< 1%)

Corte Madera Marsh SMP

January 1, 2024 - December 31, 2024
249 activity events

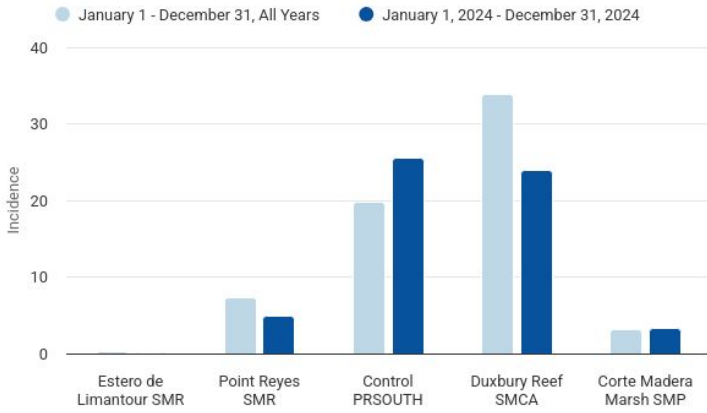


- 1. On-Shore Nonconsumptive
184 (74%)
- 2. On-Shore Consumptive
0 (< 1%)
- 3. Off-Shore Nonconsumptive
65 (26%)
- 4. Off-Shore Consumptive
0 (< 1%)

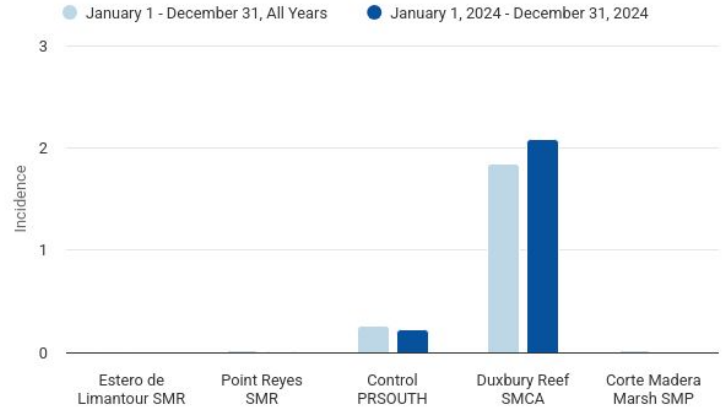
ACTIVITY INCIDENCE BY MPA

Incidence Bar Charts

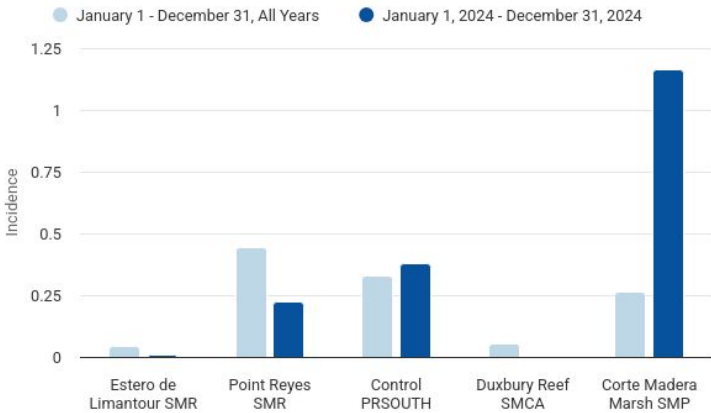
On-Shore, Non-Consumptive



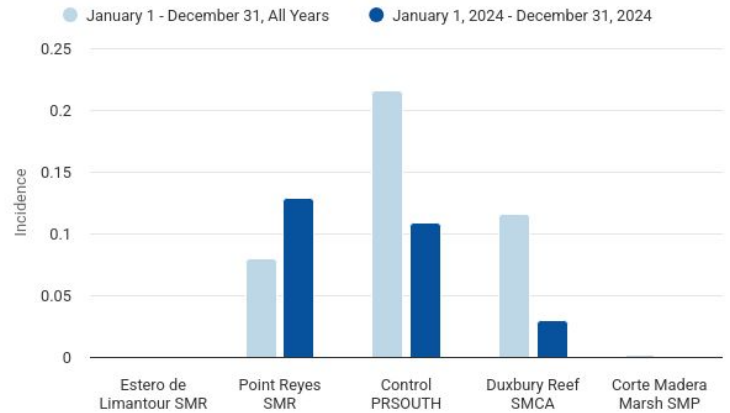
On-Shore, Consumptive



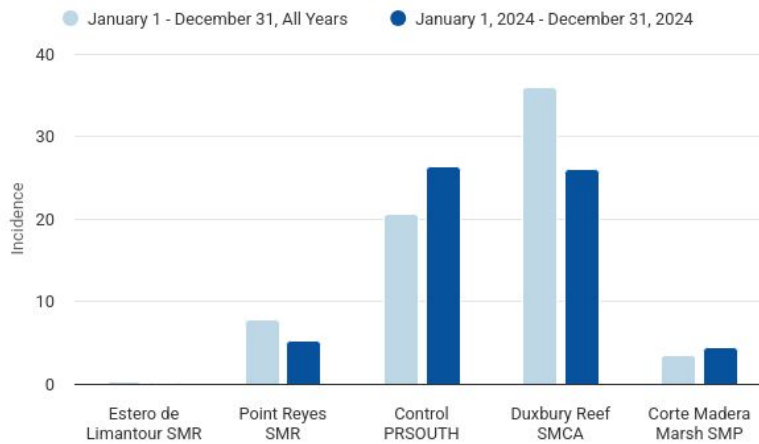
Off-Shore, Non-Consumptive



Off-Shore, Consumptive



All Activity





MARINE PROTECTED AREA (MPA) WATCH REGIONAL REPORT

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, 2024 through December 31, 2024 | January 1 December 31 All Years | January 1, 2024 through December 31, 2024 |
| | | | | |
| Estero de Limantour SMR | 0.3 | 0.1 | 0.0 | 0.0 |
| Point Reyes SMR | 7.2 | 4.9 | 0.0 | 0.0 |
| Control PRSOUTH | 19.8 | 25.6 | 0.3 | 0.2 |
| Duxbury Reef SMCA | 33.8 | 23.9 | 1.8 | 2.1 |
| Corte Madera Marsh SMP | 3.2 | 3.3 | 0.0 | 0.0 |
| All MPAs Combined | 8.3 | 8.2 | 0.2 | 0.3 |

| MPA | Off-Shore | | | |
|-------------------------|---------------------------------------|---|---------------------------------------|---|
| | Non-Consumptive | | Consumptive | |
| | January 1 December 31 All Years | January 1, 2024 through December 31, 2024 | January 1 December 31 All Years | January 1, 2024 through December 31, 2024 |
| | | | | |
| Estero de Limantour SMR | 0.0 | 0.0 | 0.0 | 0.0 |
| Point Reyes SMR | 0.4 | 0.2 | 0.1 | 0.1 |
| Control PRSOUTH | 0.3 | 0.4 | 0.2 | 0.1 |
| Duxbury Reef SMCA | 0.1 | 0.0 | 0.1 | 0.0 |
| Corte Madera Marsh SMP | 0.3 | 1.2 | 0.0 | 0.0 |
| All MPAs Combined | 0.2 | 0.2 | 0.1 | 0.0 |

| MPA | Total Combined | |
|-------------------------|---------------------------------------|---|
| | January 1 December 31 All Years | January 1, 2024 through December 31, 2024 |
| | | |
| Estero de Limantour SMR | 0.3 | 0.1 |
| Point Reyes SMR | 7.8 | 5.3 |
| Control PRSOUTH | 20.6 | 26.3 |
| Duxbury Reef SMCA | 35.8 | 26.0 |
| Corte Madera Marsh SMP | 3.5 | 4.5 |
| All MPAs Combined | 8.8 | 8.7 |

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 was 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, 2024. 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 2024 was limited due beach closure and access restrictions at Drakes Beach, where we surveyed Point Reyes SMR and part of Estero de Limantour. In 2024, Drakes Beach was closed because of elephant seal pupping from January 22 to March 31.

- a. **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 66 surveys in this MPA and recorded an incidence (use rate) of 0.1 activity per mile. This is less than the All Years incidence and 2023 and 2022 (all 0.3).

Similar to previous years, 100% of the observations were non-consumptive. 95% of the activities were on-shore which is an increase from 2022 and 2023 when 67% and 90% of activities were on-shore, respectively. Non-consumptive observations in this MPA included sandy beach recreation (33) and animals on-leash (3 horses, in one survey), shore enforcement (one ranger on patrol) and offshore surfing and paddleboarding (1 each).

Dogs are restricted from this MPA as it is critical habitat for the Western Snowy Plover and the seasonal presence of marine mammals. There were no potential violations recorded.

- b. **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 for MPA Watch surveys at Drakes Beach was closed from January 22 to March 31 due to elephant seal pupping. This MPA does not allow any on-shore or offshore consumptive uses.

In 2024, volunteers conducted 87 surveys of this MPA (compared to 209 and 120 surveys in 2023 and 2022, respectively). Surveys at this MPA recorded an incidence of 5.3 activities per mile surveyed (compared to 7.8 All Years; 5.1 in 2023 and 5.6 in 2022).

93% of the observations were on-shore, non-consumptive including sandy beach recreation (81%) and wildlife viewing (10%). Off-shore non-consumptive uses included surfing (1% of observations). Offshore uses included active boat fishing, (2%), and inactive (1%), and one unclaimed crab trap (seemed to be washed in by storms and reported by more than one volunteer).

Dogs are restricted from beach access at Drakes Beach 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 4 observations of animals off-leash. In total, there were 10 reported observations of potential violations (fishing from shore and boat fishing) in 2024.

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). Beach cleanups occur occasionally at Drakes Beach.

c. Limantour Beach (Control PRSOUTH)

This area 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 42 surveys in this MPA control site (38 in 2023) with an incidence of 26.3 activities per mile surveyed (26.7 in 2023). This shows an increase in surveys a slight decrease in use rate compared to 2023, but higher use rate compared to 2022 (15.8), and (14.7 in 2021). In 2024, 97% of the observations in Control PRSouth were on-shore, non-consumptive uses (90% sandy beach recreation), and the remaining top non-consumptive activities include animals on-(3%) and off-leash (2%) and wildlife viewing (1%). 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 132 animal observations (78 on-leash -59%- and 54 off-leash). This is close to 2023 when 139 (68% on-leash) were observed, and greater than 83 animals in 2022. No potential violations were recorded in this control area, except dogs off-leash which are not in compliance with NPS regulations.

d. Duxbury Reef State Marine Conservation Area (Duxbury SMCA)

This MPA is observed from Marin County Parks and Open Space and Point Reyes



MARINE PROTECTED AREA (MPA) WATCH REGIONAL REPORT

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. Currently, the abalone fishery is closed in this area.

In 2024, 61 surveys were conducted (compared to 129 in 2023, and 138 surveys conducted in 2022). This was in large part because there was attrition in the Duxbury Docent and MPA Watch programs and only one training offered for new volunteers in 2024. The Duxbury Docent program at Duxbury Reef was created in January 2022, through which docents conduct MPA Watch surveys during their shifts. Volunteers recorded 2,428 activities (similar to 2023 with 2,552 and 2,593 activities in 2022) with a use rate of 26.0 activities per mile (vs. 22.3 in 2023 and 23.4 in 2022). 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]. Prior to 2023, Duxbury Reef / Agate Beach has experienced the highest use rate of all the MPAs monitored by Marin MPA Watch. However, PR Control South's use rate in 2024 was slightly higher at 26.3, and in 2023 was also higher at 26.7 vs 22.3 at Duxbury).

In 2024, 92% of observations were onshore, non-consumptive uses, equal to 2023. Non-consumptive tidepooling represented 59% (1,036) of observations, compared to 2023 data, 54% (1,386) of observations and 48% in 2022. Sandy beach recreation represented 22% (388) of observations and rocky beach recreation was 5% (91).

Onshore consumptive activities during 2024 have increased to 8%, 140 observations (compared with 6% in 2023, 2% in 2022, and 7% in 2021). Onshore consumptive activities included 4%, or 65 observations of hand collection of biota (160 in 2023, and only 16 hand collection observations in 2022) and 72 observations of hook fishing (compared to 25 in 2023 and 32 observations of hook fishing in 2022).

The number of potential violations counted by volunteers was 130 (compared to 259 in 2023 and 151 in 2022) and 1 potential violation was reported to CDFW. Duxbury Reef sustains a much greater number of violations than any other Marin MPA survey site, and still very high, considering the number of surveys in 2024 was less than half of 2023. With 61 surveys conducted in 2024, there was an average of over 2 violations per survey.

Leashed dogs are allowed on Agate Beach and Duxbury Reef. Volunteers recorded 89 dog observations (185 in 2023 and 252 in 2022). There were 29 on-leash dogs and 60 off-leash dogs, twice as many off-leash as there were on-leash. For the previous two years, the ratio of on- and off-leash were nearly equal.

Duxbury Reef SMCA continues to have a high use compared to other MPAs

surveyed by Marin MPA Watch, accounting for 35% 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 on the habitat and species. The Duxbury Docent program was launched in January 2022 in response to MPA Watch data showing high use and potential violations. There were approximately 17 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 replaced the organisms.

e. 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 is allowable within the appropriate season and licenses.

Volunteers conducted 59 surveys (down from 133 in 2023 and 111 surveys in 2022) and recorded a use rate of 4.5 (down from 2023's 4.9 activities per mile and 5.2 in 2022). 74% of the activities were on-shore, non-consumptive (91 % in 2023 and 95% in 2022), mostly including recreation (58%), driving (bicycling and PGE) 7%, animals on-leash (5%) and animals off-leash (3%). On-shore consumptive uses (2%) consisted of hook fishing, which is allowed at this site. Offshore, other boating accounted for 20% of activities (Golden Gate Commuter Ferry Boat and rowing). Windsurfing and kayaking comprised 5% and 1% activities, respectively.

Leashed dogs are allowed on the walking paths, but not in the wetland or marsh. Of the 59 surveys conducted, volunteers recorded 21 dog observations, significantly less than in 2023 (113 of the 133 surveys). There were 13 on-leash and 8 off-leash. 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 at 185 observations (3.7% of 4,959 total activities). In 2023, the rate was under 4% of total; in 2022 – 2%; in 2021 and 2020 - 6% & 7%; and in 2019 and prior it was 2-4%.

The vast majority of consumptive activities come from Duxbury Reef including on-shore hook and line fishing, and especially, hand collection of biota which would be a violation of SMCA

regulations. Of 140 potential violation observations in 2024 Marin MPA Watch data (2.8% of 4,959 observed activity events), 130 of them were at Duxbury Reef SMCA. The other 10 potential violations were observed at Point Reyes SMR.

Recurring issues with the illegal take and disturbance of tidepool organisms in the Duxbury Reef SMCA is an ongoing problem during low tides; in 2024 there were 60 survey observations of hand collection. Evidence suggests consumptive activity rates are higher than reflected in the MPA Watch data (which is a snapshot estimate). Data from Duxbury Docent shift reports, which cover both an MPA Watch survey, plus the entire docent shift of 2-4 hours show additional violations that are not captured within the 10-minute binocular snapshot MPA Watch survey. 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. Additionally, a number of education organizations practice and model holding and touching of organisms for observation in their educational programming on Duxbury Reef to help people learn about and connect more deeply with marine life on the reef, yet cumulative impacts on sensitive species and regulation compliance associated with this practice are considerations.

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 the fascinating marine life, MPA regulations, and 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 January 2025, EAC's Duxbury Docent program has begun piloting temporary signs (graphically designed) 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 protection and 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 2024, Marin MPA Watch trained fewer volunteers than prior years and some normal attrition occurred which resulted in the collection of 50% fewer surveys than in 2023. In part, this was because fewer volunteers were recruited and trained during our training season and a smaller active team of Duxbury Docents were available for shifts and to conduct MPA Watch surveys. In addition, our partnering high school students were trained late in 2024 for participation in 2025 at Corte Madera Marsh. We were not able to train a new cohort of Duxbury Docents in 2024, but are doing so in 2025 which will bring more MPA Watch volunteers to the team.



Public access to Drakes Beach was limited for a short time during the winter/spring of 2024 and will likely occur each year as elephant seals continue to use Drakes Beach for pupping. This reduces survey capacity and in addition, Drakes Beach is a very remote site which is difficult to recruit volunteers for. We have 2-3 volunteers for Drakes beach, one of which is very active when access allows and we will continue to recruit more volunteers for all the sites in 2025.

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 hope 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 provide information to help with management and enforcement of MPAs. Additionally, Marin MPA Watch participates in the Intercept Survey Working Group, and we hope to pilot the intercept survey this coming summer to gain more demographic information on visitors in MPAs.

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

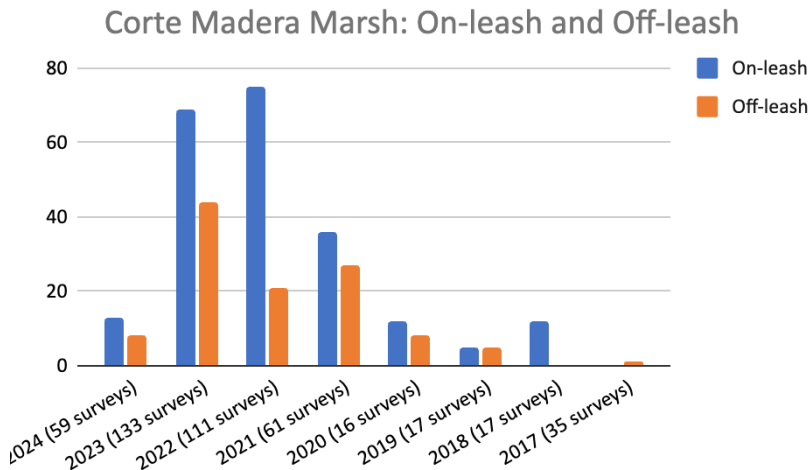
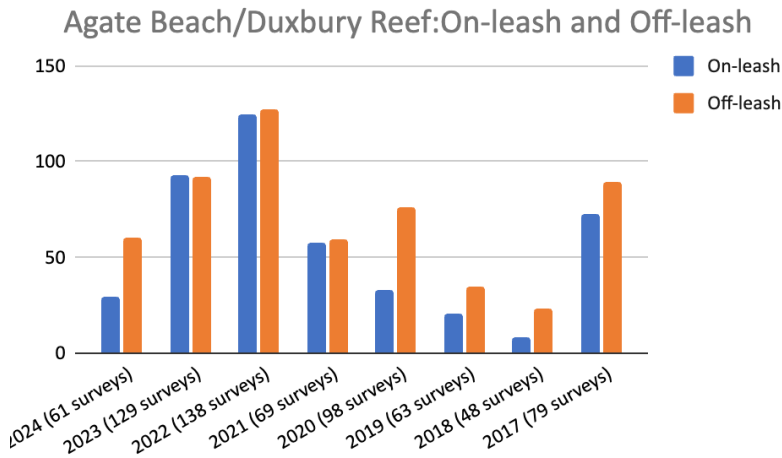
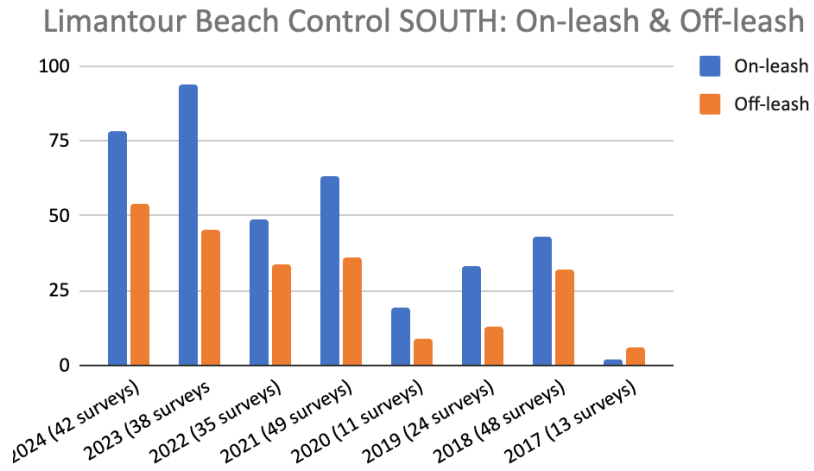
For additional information on MPA Watch, including survey sites, participating organizations, protocols and datasheets, media kit, and how to get involved, please visit mpawatch.org. Connect with MPA Watch on social media @MPAWatchOrg.

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.

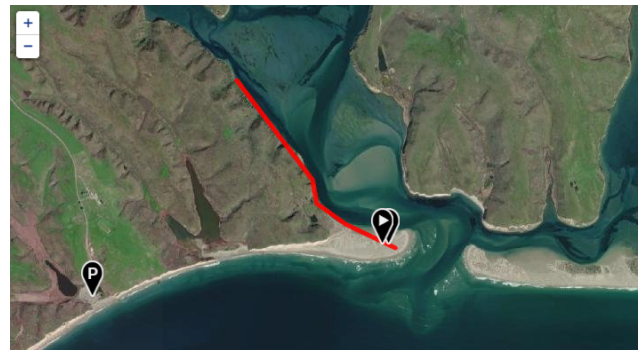
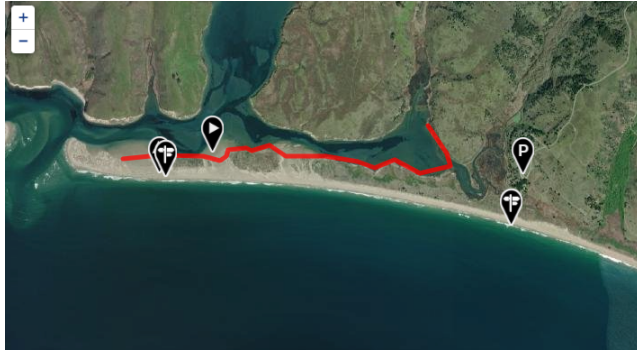
GRAPHS of animal trends (mostly dogs) at Limantour Beach, Corte Madera Marsh, and Agate Beach/Duxbury Reef



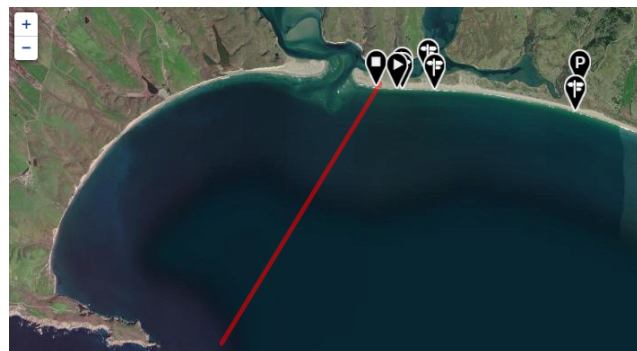
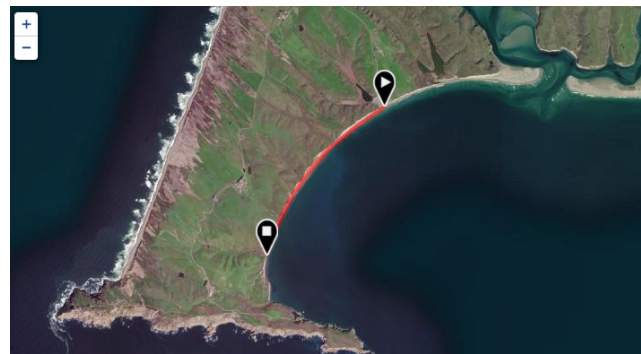
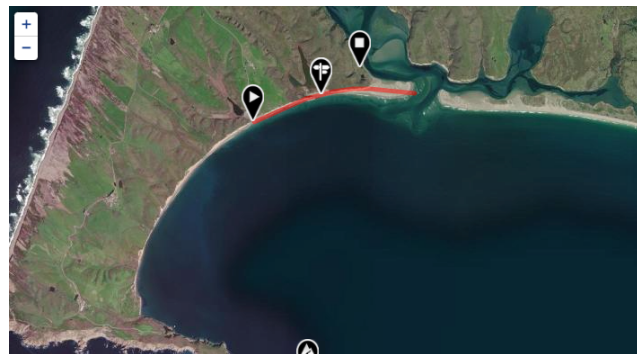
MAPS

*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.

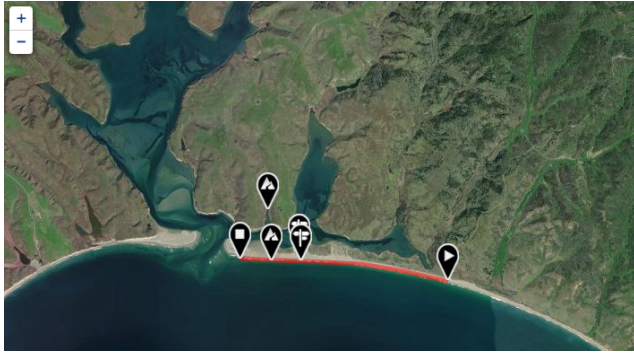
Estero de Limantour State Marine Reserve (Estero de Limantour SMR):



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)

