ORANGE COUNTY COASTKEEPER®

Orange County MPA Watch

2016 Annual Report

2016 Year-End Report

WHAT IS AN MPA?

Marine Protected Areas (MPAs) are discrete geographic marine or estuarine areas designed to protect or conserve marine life and habitat. The MLPA (Marine Life Protection Act) was passed in 1999, and the statewide network of MPAs created under it was completed in 2012. The MLPA is different from traditional fishery regulations in that it seeks to protect entire marine ecosystems rather than individual species. All MPAs have measurable goals and objectives, and function as a network. Also, scientific data on the MPAs must be collected to evaluate their performance and facilitate adaptive management. This data is reviewed and adaptive management decisions are made every five years by the California Fish and Wildlife Commission.

WHY DO WE HAVE MPA'S?

MPA's preserve California's stunning marine ecosystems so that future generations can observe and enjoy. Direct benefits include:

- Increased spawning stock
- Improved habitats
- Spillover effect enhances catch close to protected areas
- Enhanced biodiversity and species protection

WHAT IS THE OC MPA WATCH PROGRAM?

The Orange County Marine Protected Area (OC MPA) Watch Program enlists volunteers, community groups, and local government to monitor human activity in and around the seven Orange County MPAs. The program is organized and run by Orange County Coastkeeper (OCCK). OCMPA Watch is part of a larger state wide program with surveys sites from Klamath to San Diego being done by a variety of groups. All of the groups use the same monitoring procedures and data collection sheet and enter data into a central database. The program has a Technical Advisory Committee made up of well-known scientists as well as a statewide coordinator that assists local programs and committees that develop training materials and manage Quality Control issues. The website for the statewide program is www.mpawatch.org. The goal for the statewide program is to develop information on human activities that will be used by the Department of Fish and Wildlife, other state and local agencies, and the public in managing our MPAs to insure their success.

Orange County Marine Protected Areas:

1. Bolsa Bay State Marine Conservation Area (SMCA)
2. Bolsa Chica Basin SMCA
3. Crystal Cove SMCA
4. Laguna Beach State Marine Reserve (SMR)
5. Laguna Beach SMCA
6. Dana Point SMCA
7. Upper Newport Bay SMCA

Orange County MPA Regulations:

All activities that do not harm marine life including swimming, boating, diving, surfing, tidepooling, walking and other beach recreational activities are allowed with no restrictions. The only activities restricted in MPAs are those that may potentially inpact marine resources. The regulations for each MPA are as follows:

1. The Bolsa Bay SMCA allows fishing from shore by hook and line only. Due to additional restrictions from the ecological reserve overlay, fishing is only allowed at one site in the very north end of the SMCA near the Bolsa Chica Interpretative Center.
2. The Bolsa Basin SMCA allows no take of any kind.
3. The Crystal Cove SMCA allows the *recreational* take of lobster, sea urchin, and finfish by hook-and-line or spearfishing, and the *commercial* take of lobster, urchins, and coastal pelagic species such as sardine, anchovy and squid by round haul net. The take of all living marine resources from tidepools is prohibited. The SMCA is bounded by the southern Newport Harbor jetty in the north to Abalone Point in the south.
4. The Laguna Beach Marine Reserve does not allow take of any marine resources in the 4.7 mile stretch from Abalone Point in the north to Goff Island in the south.
5. The Laguna Beach SMCA does not allow take of any marine resources in the 1.2 mile stretch from in Geoff Island the north to Table Rock Point in the south.
6. The Dana Point SMCA allows the *recreational* take of lobster, sea urchin, and finfish by hook-and-line or spearfishing, and the *commercial* take of lobster, urchins, and coastal pelagic species such as sardine, anchovy, and squid by round haul net. The take of all living marine resources from inside tidepools is prohibited. The SCMA is bounded by Table Rock Point in the north and the bend in the Dana Point Harbor jetty in the south.
7. The Upper Newport Bay SMCA allows fishing from shore using hook and line only. Due to the ecological reserve overlay, fishing is only allowed at four designated sites: Castaways Beach, North Star Beach, Rocky Point, and the Jamboree Bridge. This SMCA includes all of Newport Bay north of the Pacific Coast Highway Bridge.

HOW & WHY MONITOR HUMAN ACTIVITIES IN AN MPA?

To assure the effectiveness of Marine Protected Areas (MPAs) and to determine the impacts on marine resources, we need to identify the types of human activities that occur in or near MPAs. Because gathering this data is time-consuming, partnerships with key community groups and engaged citizens are a cost-effective and resource-efficient means to evaluate human uses. Trained volunteers can produce accurate and reliable information that can be used to better understand how individuals use MPAs. **MPA Watch data provides the human use context needed to assist with the interpretation of biological data in the Orange County region through monitoring of human uses inside MPAs.**

Activities Observed:

- *What human activities occur in and around MPAs?*
- *What resources are needed to support the MPAs?*
- *Are regulations being followed?*
- *Have consumptive and non-consumptive uses changed since the MPAs were implemented?*

Partners:

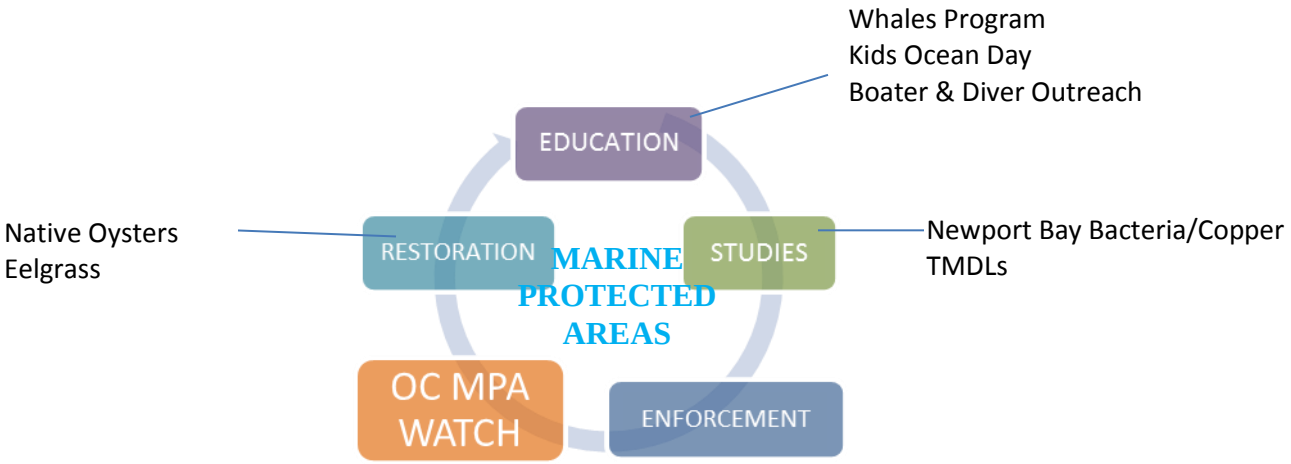
- City of Newport Beach
- City of Laguna Beach
- City of Dana Point
- Eco Adventure Center, Ritz Carlton Laguna Niguel
- Members of the public

DATA:

With sound practices, data from effective volunteer monitoring programs can be used **to inform resource managers and provide information to enhance the management and performance of Marine Protected Areas.**

The data collected by MPA Watch volunteers is analyzed **to identify human use patterns** in MPAs. OCCK then uses the collected information to prepare four quarterly reports and one annual report that summarize the survey data for use by resource managers, partner groups, and the public. **This data will allow resource managers and community groups working in the MPAs to make decisions on where to invest their resources to maximize benefits to the MPAs and the community.**

The MPA Watch program has been designed as a standardized survey, not necessarily a scientific study. The MPA Watch Program is one part of the umbrella of the larger Orange County and statewide MPA program. OCCK is also involved in other parts of the MPA process.



Activities Observed:

We defined a large number of activities that our volunteers would most likely to observe during their surveys, such as beach recreation, wildlife viewing, snorkeling, paddle boarding, and of course, fishing. Each activity falls under one of four categories:

- *On-shore vs. Off-shore Distinction:* On-shore includes any activities that are within the MPA boundaries of the mean high tide line, which, for the purposes of this project, includes sandy beaches and rock areas up to the nearest bluff or man-made structure. Off-shore includes the area within the offshore MPA boundaries as defined in the Fish and Game code and all activities that occur in this area.
- *Consumptive vs. Non-consumptive:* Consumptive activities include recreational and commercial take of marine species both on and offshore. Non-consumptive activities include kayaking, surfing, scuba-diving, wildlife viewing, and beach-visiting.

Survey Results:

January 1st, 2012 was the implementation date for the South Coast MPAs from Point Conception to the Mexican border. **From January 1 – December 31, 2016, we completed 473 surveys and observed 26,583 activities**, consumptive and non-consumptive, onshore and offshore. Both numbers of visits and activities are almost identical to 2015. Compared to 2014, the number of surveys increased by 33 surveys and the number of activities increased by 786 observations. We found that the frequency of non-consumptive activities greatly outnumbered consumptive activities, with 99% of the **26,538** activities observed being non-consumptive. Of these activities, beach recreation was the most popular non-consumptive activity. Of the consumptive activities, spear fishing was the most popular recreational activity, followed by hand collect biota and hook fishing.

Survey Sites and Activities:

1. The Upper Newport Bay SMCA allows fishing from shore using hook and line only. Due to the ecological reserve overlay, fishing is only allowed at four designated sites: Castaways Beach, North Star Beach, Rocky Point, and the Jamboree Bridge. Each of these is also a survey site. The most popular activities observed were beach recreation and kayaking**.**
2. The Crystal Cove SMCA consists of two jurisdictions:
    - The **City of Newport Beach** survey sites are Corona Del Mar Beach, Little Corona Del Mar Beach, and Morning Canyon Beach.
    - The **Crystal Cove State Park** surveys are Pelican Point, Los Trancos, and Reef Point.
3. The Laguna Beach Marine Reserve and SMCA does not allow take of any marine resources in the 4.7 mile stretch from Abalone Point in the north to Goff Point in the south. The Reserve contains twelve survey sites covering almost every accessible beach. Beach recreation, walking, running, and wildlife viewing (including tidepooling) were the

most popular onshore activities, while board sports, diving, snorkeling, and boating were the most popular offshore activities.

4. The Laguna Beach SMCA does not allow take of any marine resources in the 1.2 mile stretch from Goff Island to Table Rock Point (except for public works maintenance activities). The SMCA contains three survey sites covering almost every accessible beach. Beach recreation, walking, running, and wildlife viewing (including tidepooling) were the most popular onshore activities, while surfing, diving, snorkeling, and boating were the most popular offshore activities.
5. The Dana Point SMCA allows the *recreational* take of lobster and sea urchin, and of finfish by hook-and-line or spearfishing, and the *commercial* take of lobster, urchins, and coastal pelagic species such as sardine, anchovy, and squid by round haul net. The take of all living marine resources from inside the tidepools in these MPAs is prohibited. The Survey sites are Totuava Beach, Thousand Steps Beach, Three Arch Bay, Salt Creek, Dana Strands, and Dana Point. The most popular activities observed were beach recreation, walking, and tidepooling. The most common non-consumptive offshore activity was surfing, primarily at Salt Creek Beach. This area was also the most popular MPA for fishing from private boats and lobster pots.

Please note the following: OC Coastkeeper discontinued monitoring of the Bolsa Chica MPA during the 2nd Quarter of 2013. Therefore, the data from 2012 and 2013 presented in this report do not include the data from the Bolsa Chica monitoring.

Frequency of MPA Watch Visits per Quarter

No. of Visits per Quarter

MPA	Quarter 1	Quarter 2	Quarter 3	Quarter 4	TOTAL
Upper Newport	29	38	17	19	**103**
Crystal Cove	27	34	10	26	**97**
Laguna	53	56	78	48	**235**
Dana Point	13	10	9	6	**38**
TOTAL	122	138	114	99	**473**

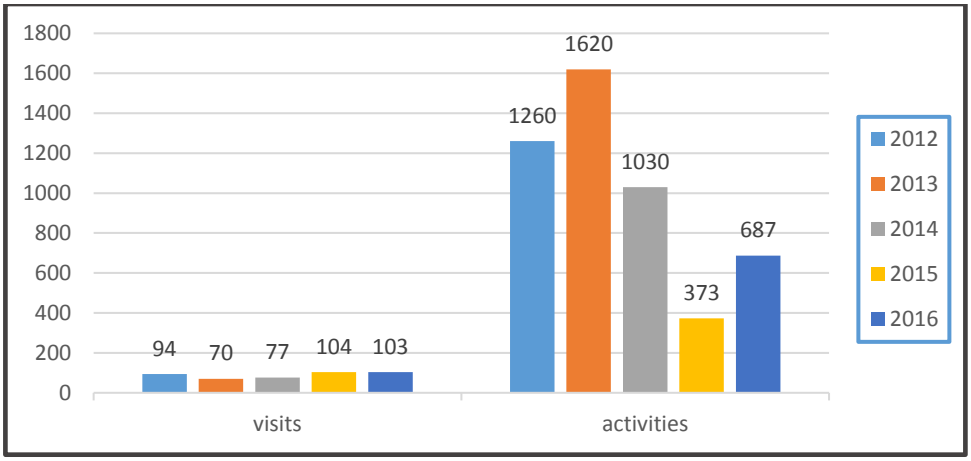
The frequency of MPA Watch Visits in the Orange County Marine Protected Areas
January 1, 2016 through December 31, 2016

Observed Activities during MPA Watch Visits					
MPA	Onshore, Non-Consumptive Activities	Onshore, Consumptive Activities	Offshore, Non-consumptive Activities	Offshore, Consumptive Activities	**TOTALS**
Upper Newport Bay	198	42	446	1	**687**
Crystal Cove	9938	63	1280	55	**11336**
Laguna	10242	218	2210	0	**12670**
Dana Point	1252	3	586	4	**1845**
TOTALS	**21630**	**326**	**4522**	**60**	**26538**

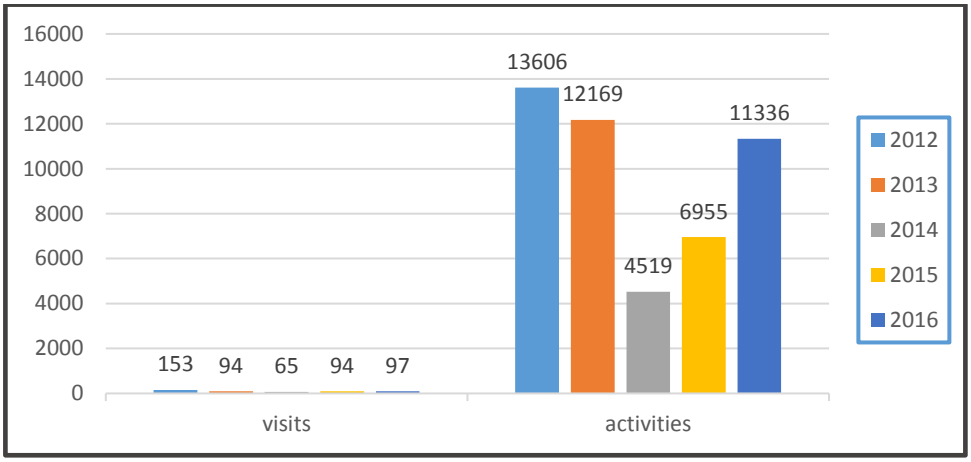
The frequency of consumptive versus non-consumptive activities in the Orange County Marine Protected Areas
January 1, 2016 through December 31, 2016

By the Numbers: 2012 vs 2013 vs 2014 vs 2015 vs 2016

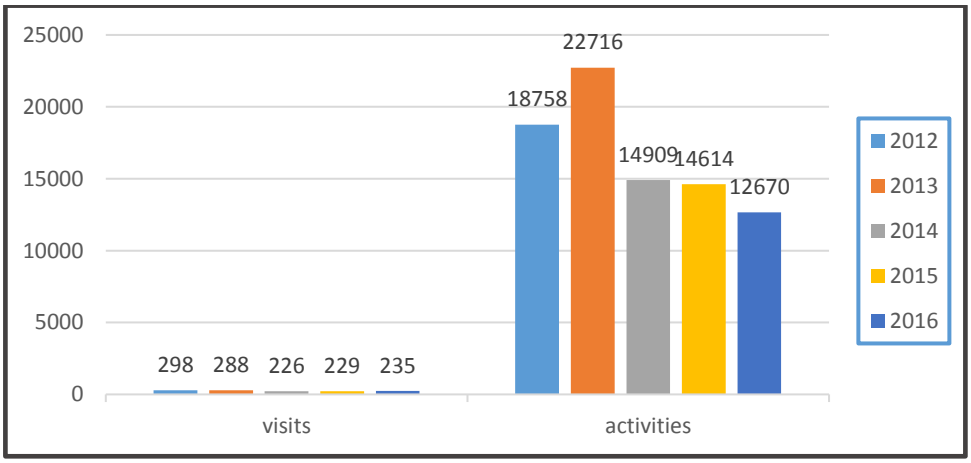
- **Upper Newport Bay**



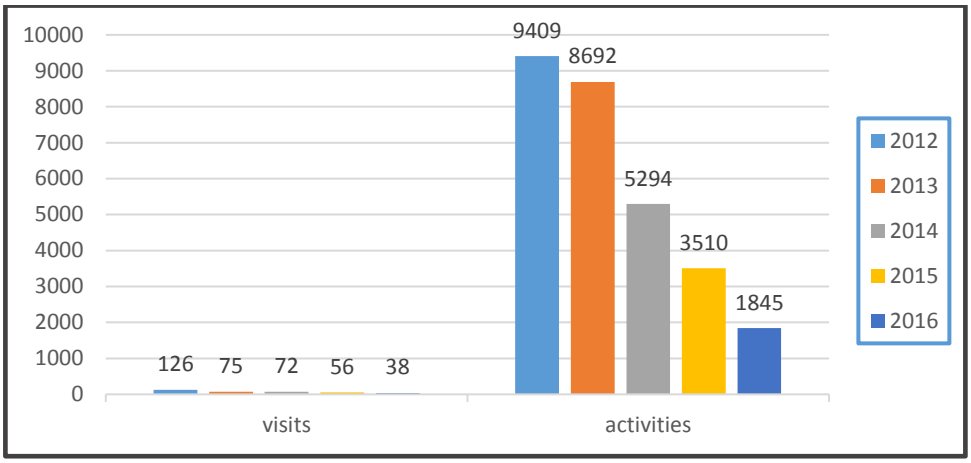
- **Crystal Cove**



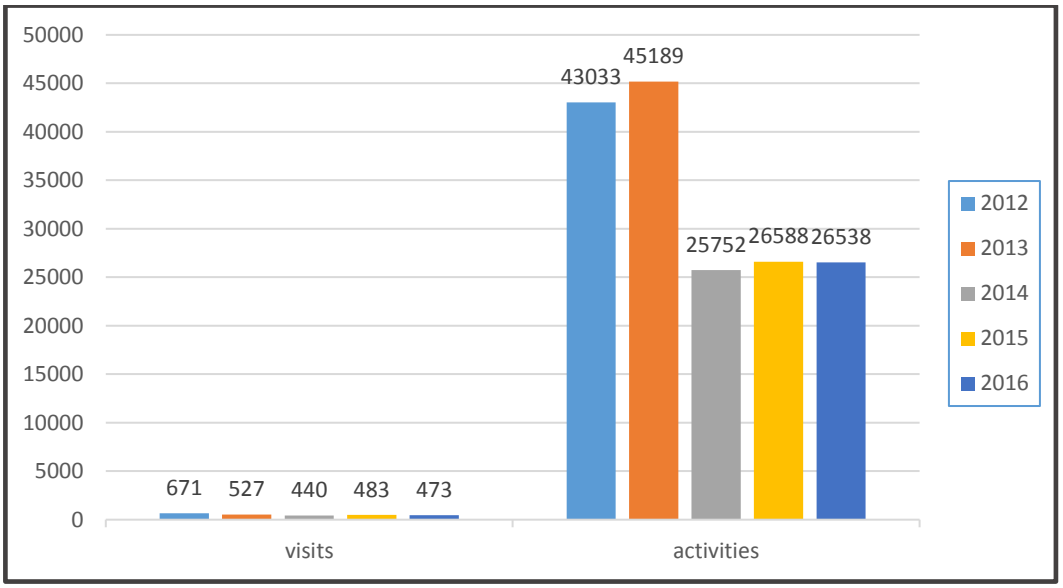
- **Laguna**



- **Dana Point**



- **Total**



Based on the charts above, the following observations can be made:

- While there was some slight variation in the number of MPA visits, the amount of activities observed experienced a noticeable decline between the years 2013 – 2014. This coincided with a change in our monitoring methods that began in 2014. The same methods were used in 2014 to the present and will continue in the future.
- There did not seem to be any noticeable pattern in comparing the number of visits to the number of activities. For example, in Upper Newport, while the number of MPA watch visits from 2014 and 2015 increased significantly from 77 to 104, the number of activities observed declined sharply from 1030 to 501. Also, the number of MPA visits in Crystal Cove declined by almost half between 2012 and 2013, yet the number of activities observed

declined only slightly. And during the same period in Laguna, the number of visits declined slightly, but the number of activities observed actually increased.

- In upper Newport bay we notice that although the number of visits in 2015 and 2016 were the same, there is a sharp increase in number of activities between 2015 and 2016. The same is true for Crystal Cove.
- For Laguna, the number of visits varied slightly between2015 and 2016, yet there is a considerable decrease in number of activities between 2015 and 2016.
- For all the areas (total) chart, we can observe that the number of visits remained almost the same between 2015 and 2016, and surprisingly, the number of activities between 2015 and 2016 remained almost the same.
- What can be deduced from these observations is the extreme variation in MPA activities depending upon the time and day the observations were made, which can greatly impact the results. For example, frequent visits in early morning or late afternoon on weekdays may potentially yield fewer activities observed than a few visits during peak hours or on weekends.

Overall Comparison of 2012, 2013, 2014, 2015, and 2016:

	2012	2013	2014	2015	2016
Total Number of Sites Monitored	35	35	25	25	28
Total Number of Surveys Conducted	671	527	440	483	473
Total Number of Observed Activities	43,033	45,189	25,752	26,588	26538
Total Onshore, Consumptive Activities	619	611	596	153	326
Total Number of Onshore, Non-Consumptive Activities	32,298	33,587	20,313	21,362	21630
Total Number of Offshore, Consumptive Activities	1,413	1,620	208	44	60
Total Number of Offshore, Non-Consumptive Activities	8,703	9,371	4,635	5,029	4522
Total Number of Violations	69	139	7	0	1

By comparing the past four years statistically, we can see that each year, the percentage breakdown of uses is almost identical regardless of the number of surveys and sites monitored. In all of the years surveyed, the bulk of observed activities were onshore, non-consumptive. In 2012, 2013, 2014, and 2015 onshore, non-consumptive activities comprised 75%, 74%,79%, and 80% of the total observed activities, respectively. In 2016, the percentage of onshore, non-consumptive activities only increased marginally (81.5% of the total observed activities). The percentage of total activities that were observed as offshore, non-consumptive also remained fairly constant: 20% in 2012, 21% in 2013, 18% in 2014, %19% in 2015, and 17% in 2016.

The only noticeable trend, as far as breakdown of activities, was that the total percentage of consumptive activities continued to decline further throughout 2015 but started to increase throughout 2016. The percentages of activities observed as being onshore, consumptive activities for 2012, 2013, 2014 ,2015, and 2016 were 1.5%, 1.4%, 2.2% , 0.6%, and 1.2% respectively. And offshore, consumptive activities comprised 3.5%, 3.6%, 0.8%, 0.17%, and 0.23% of the total observed activities for 2012, 2013, 2014, 2015, and 2016, respectively. Thus while the total percentage of consumptive activities (offshore and onshore) comprised only a slim minority for the years 2012 and 2013 (5% for both years), the total percentage of consumptive activities declined to only 3% of the total activities for 2014 and dropped to less than 1% of the total activities for 2015 then slightly increased to 1.5% for 2016.

The most significant variation observed was in the number of potential MPA regulation violations observed. While the total number of potential violations was 0.15% and 0.29% for 2012 and 2013, the percentage of violations was a mere 0.03% of the total for 2014 and 0% for 2015 as there were no potential violations reported for that year, in 2016 only 1 potentialviolation was observed. While this may seem like a large variation, the percentages are so small that the observed variation is not statistically significant. The biggest change in potential violations was the decrease from 2013 to 2014, which could have been the result of increased public awareness about MPAs, improved quality of enforcement, and/or increased warning signs around selected beaches.

Orange County Survey Sites