

## MPA Watch Survey Data

### April 2011 - December 2011

**Cumulative surveys end of year: 944**

**Total surveys for this year: 944**

**Contributing volunteers: 52**

MPA Watch is a citizen science initiative to monitor human use of coastal natural resources by training and supporting volunteers in the collection of relevant, scientifically rigorous, and broadly accessible data. Data are meant to inform the management, enforcement, and science of California's marine protected areas (MPAs) and allow us to see how human uses are changing as a result of MPA implementation.

Volunteers record consumptive activities such as commercial fishing, shore fishing, and clamming, and non-consumptive activities such as swimming, SCUBA diving, and tide pooling. Potential users of MPA Watch data span academia, natural resource management agencies, and local communities. Data collection and this report will support MPA assessments and adaptive management; inform enforcement, compliance, and education efforts; and build social capital.

Below show totals of all surveys done in the year of 2011, broken down into regions & specific sites.

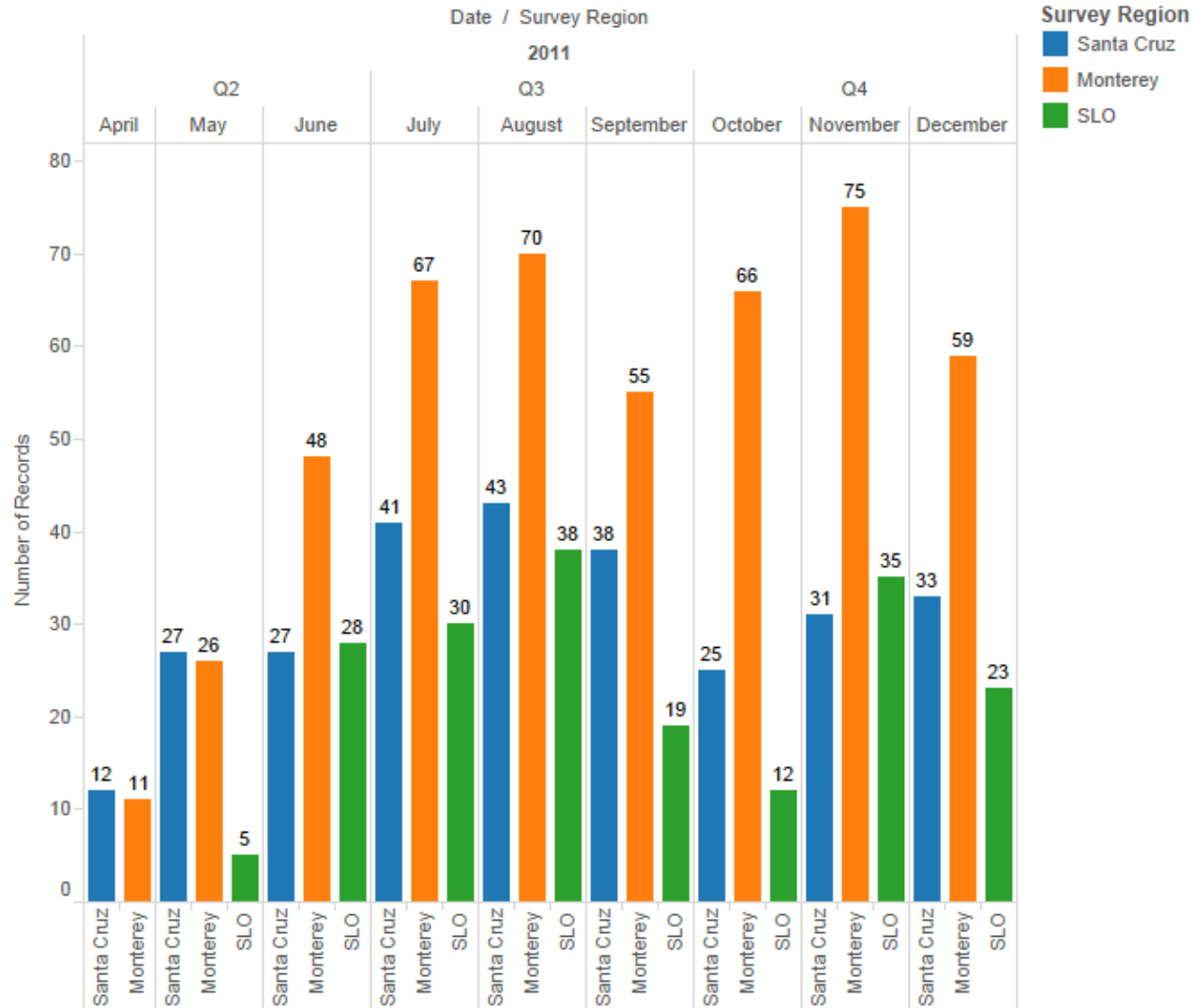
<b>Santa Cruz cumulative total: 277</b> <b>Santa Cruz total this year: 277</b>  Bean Hollow: 43 Ano Nuevo: 26 Coastal Bluffs: 56 Natural Bridges: 152	<b>Monterey cumulative total: 477</b> <b>Monterey total this year: 477</b>  Lover's Point: 97 Asilomar: 118 17 Mile Drive: 95 Pt. Lobos: 115 Malpaso: 52	<b>San Luis Obispo cumulative total: 190</b> <b>San Luis Obispo total this year: 190</b>  Cambria: 57 Montana de Oro: 115 Pt. Buchon: 18
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## All Survey Sites

### Year to date surveys

This is the exact number of surveys per site.

### Regional Surveys by Month



## **All Survey Sites**

### **Number of Consumptive Activities, Consumptive vs. Non-Consumptive, Total Activities Recorded**

**April 2011 – December 2011**

The next three graphs show several different aspects that when placed next to each other show some important results.

The pie graph shows the total activities recorded for the corresponding region & is separated into categories of where the activity took place: on the beach, on the intertidal rocks, offshore (in water), as boats, or as boats who were actively fishing.

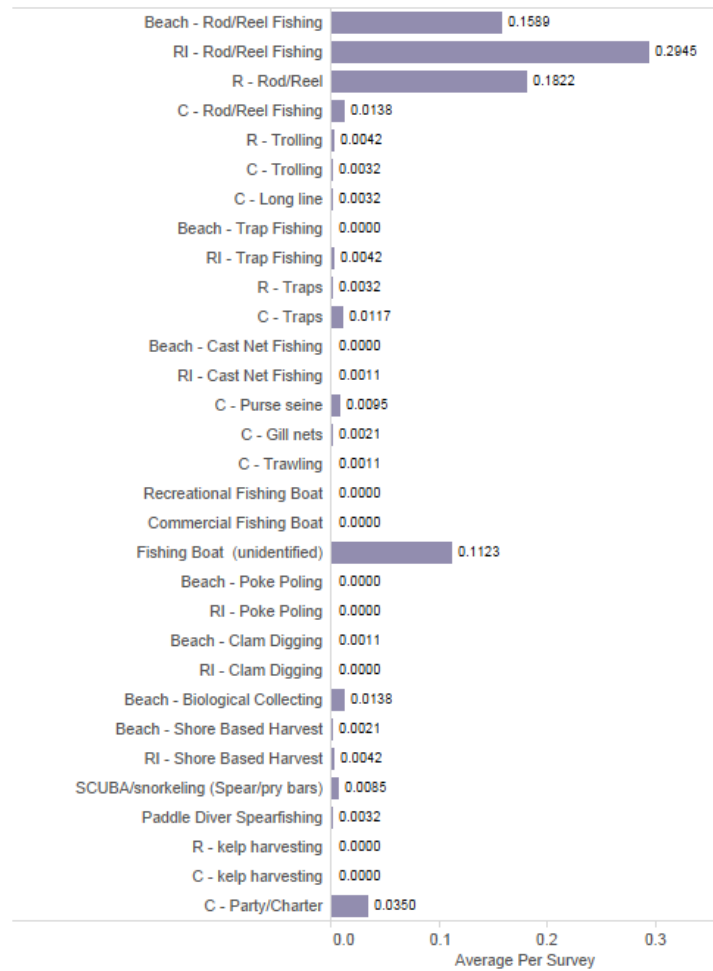
The first bar graph shows the actual number of consumptive activities volunteers had recorded. There are 31 possible consumptive activities.

A third graph shows average amount of consumptive activities recorded juxtaposed with average number of non-consumptive activities recorded. For example, at Lovers Point, the average number of consumptive activities isn't even 1 (.20), and the average number of non-consumptive activities is about 32 (31.74).

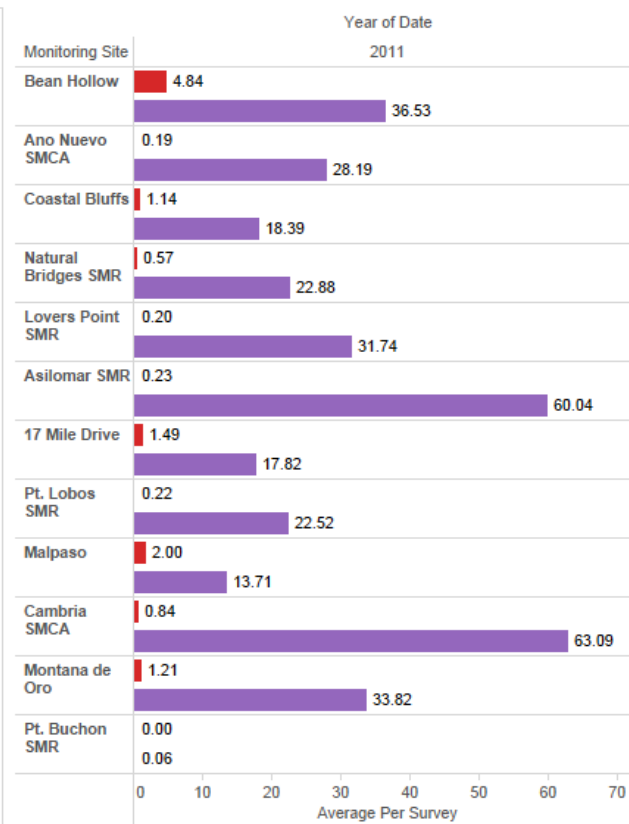
# All Survey Sites

April 2011 – December 2011

Number Occurrence Consumptive

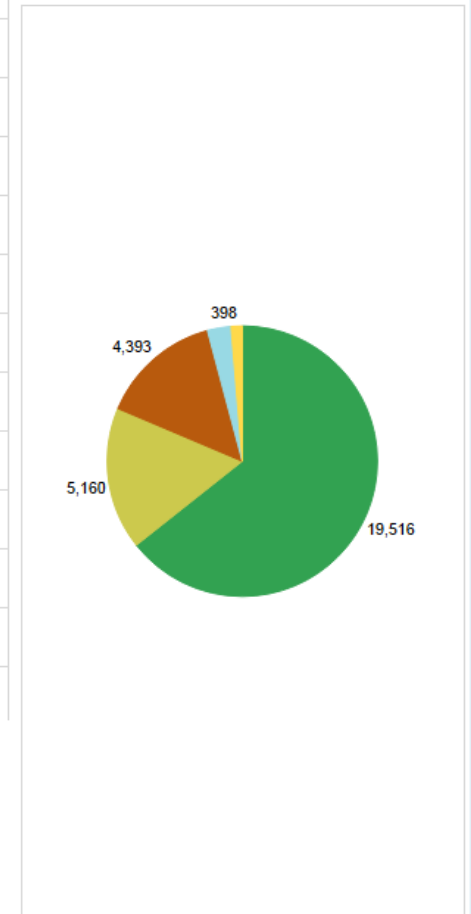


Consumptive ■ Non-Consumptive ■



Total Activities

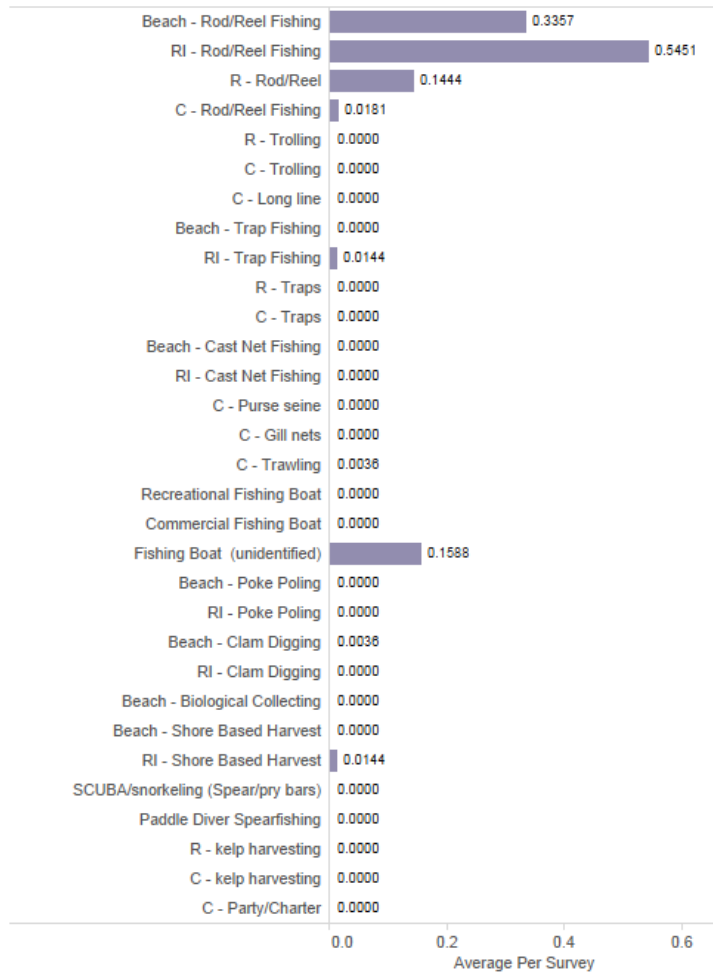
- Beach
- Rocky Intertidal
- Offshore
- Boats
- Fishing Boats



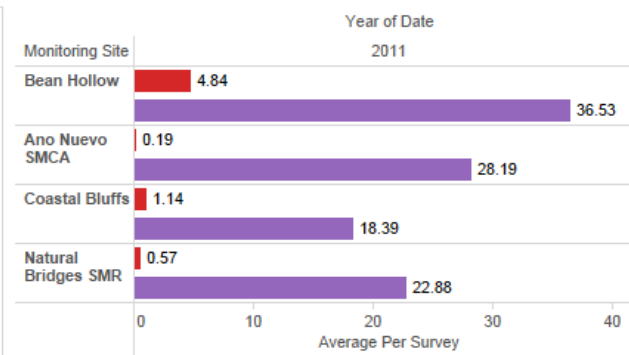
# All Santa Cruz Sites

## April 2011 – December 2011

Number Occurrence Consumptive

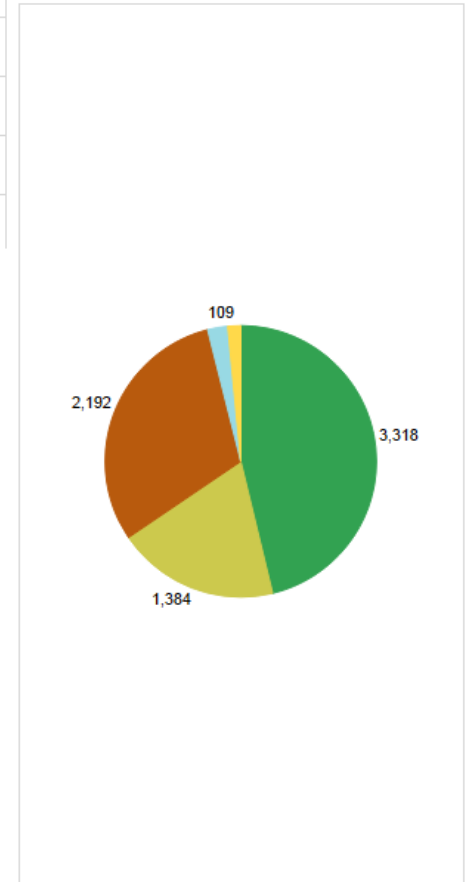


Consumptive ■ Non-Consumptive ■



Beach Boats  
Rocky Intertidal Fishing Boats  
Offshore

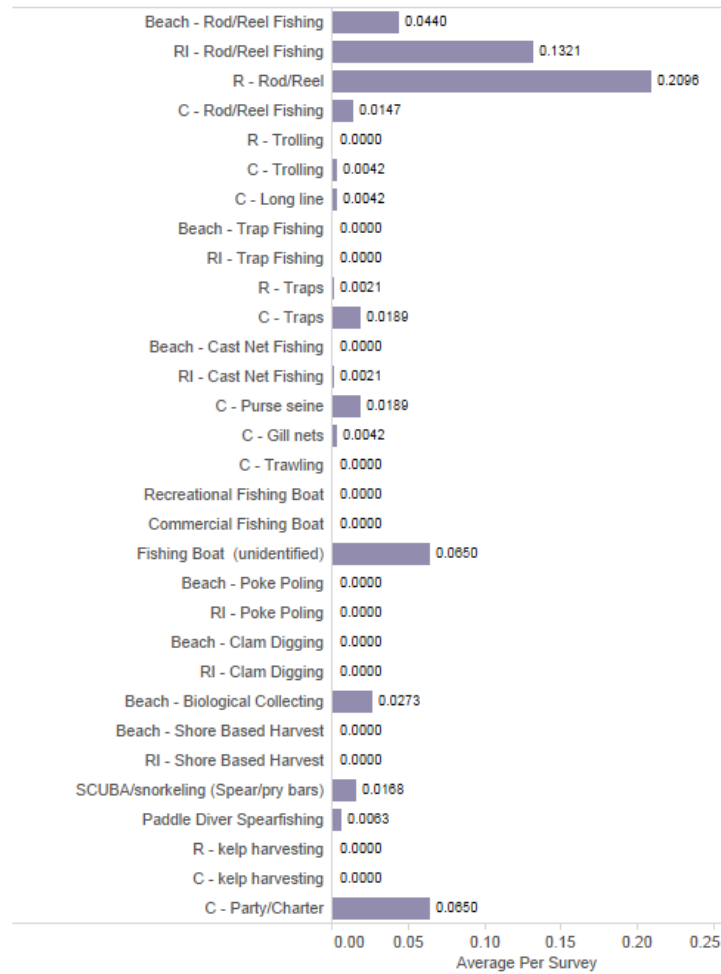
Total Activities



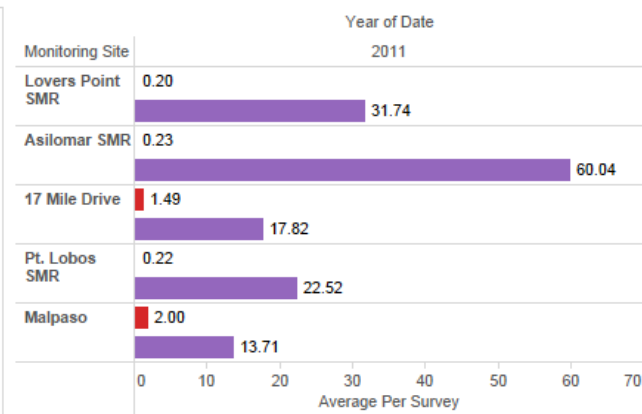
# All Monterey Sites

## April 2011 – December 2011

Number Occurrence Consumptive

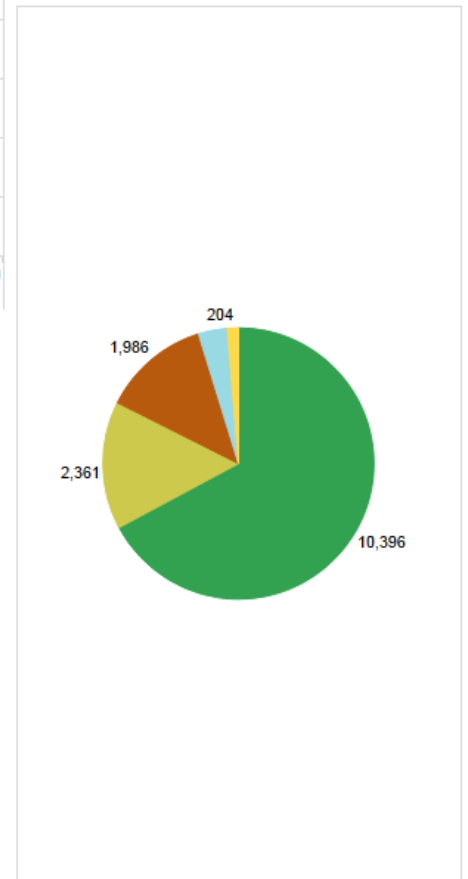


Consumptive ■ Non-Consumptive ■



Total Activities

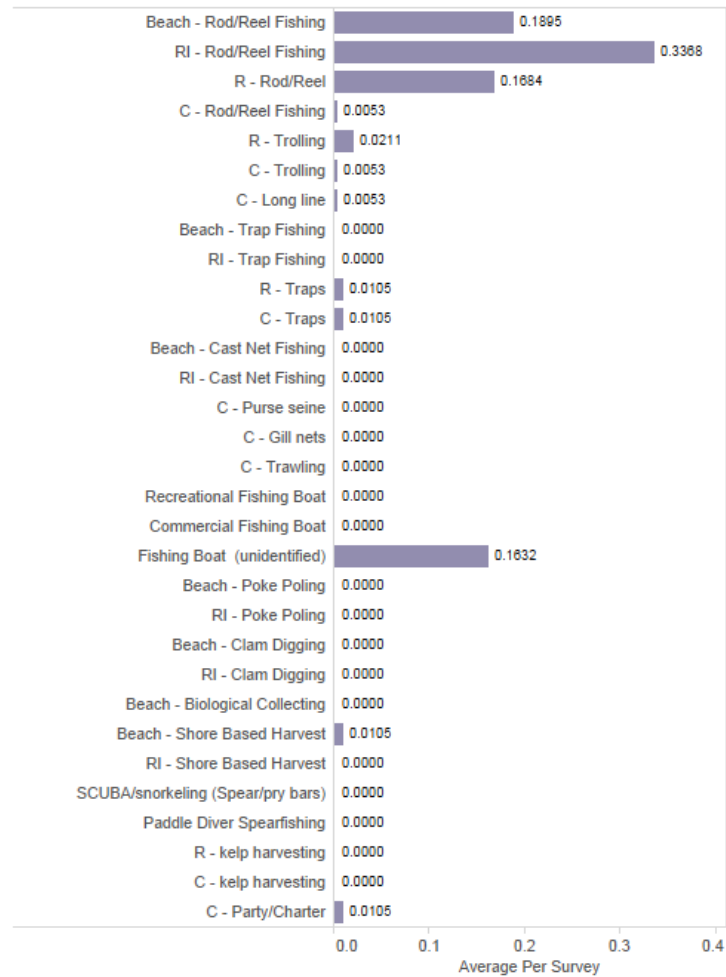
■ Beach  
■ Rocky Intertidal  
■ Offshore  
■ Boats  
■ Fishing Boats



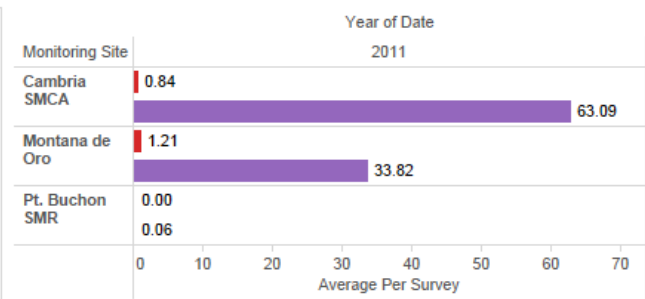
# All San Luis Obispo Sites

## April 2011 – December 2011

Number Occurrence Consumptive

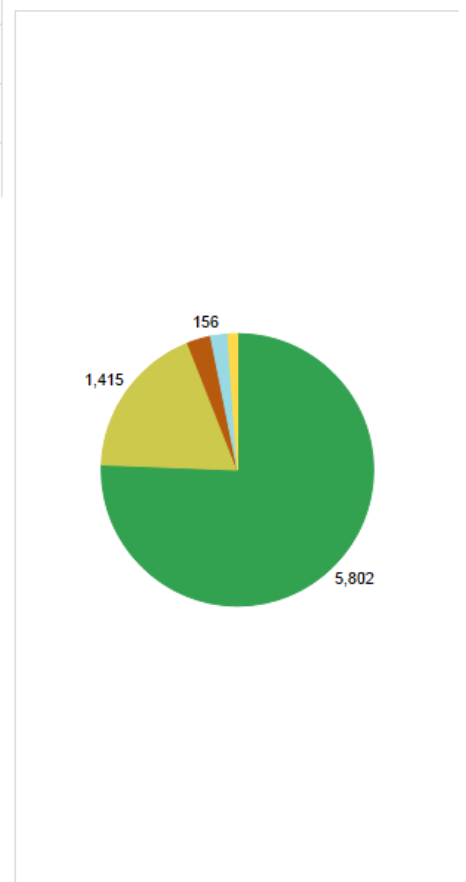


Consumptive ■ Non-Consumptive ■



■ Beach      ■ Boats  
■ Rocky Intertidal      ■ Fishing Boats  
■ Offshore

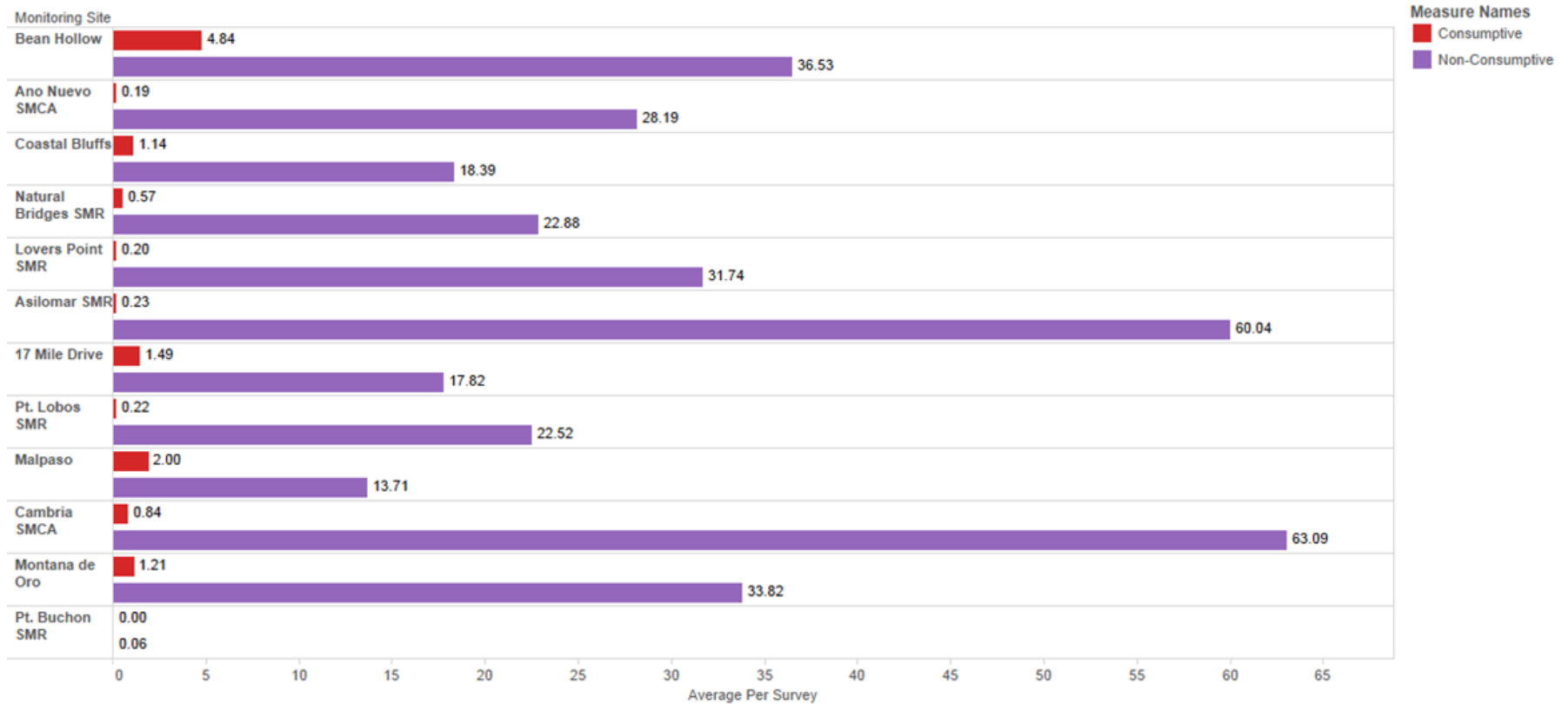
Total Activities



# Consumptive vs. Non-consumptive

## All survey sites

### April 2011 – December 2011

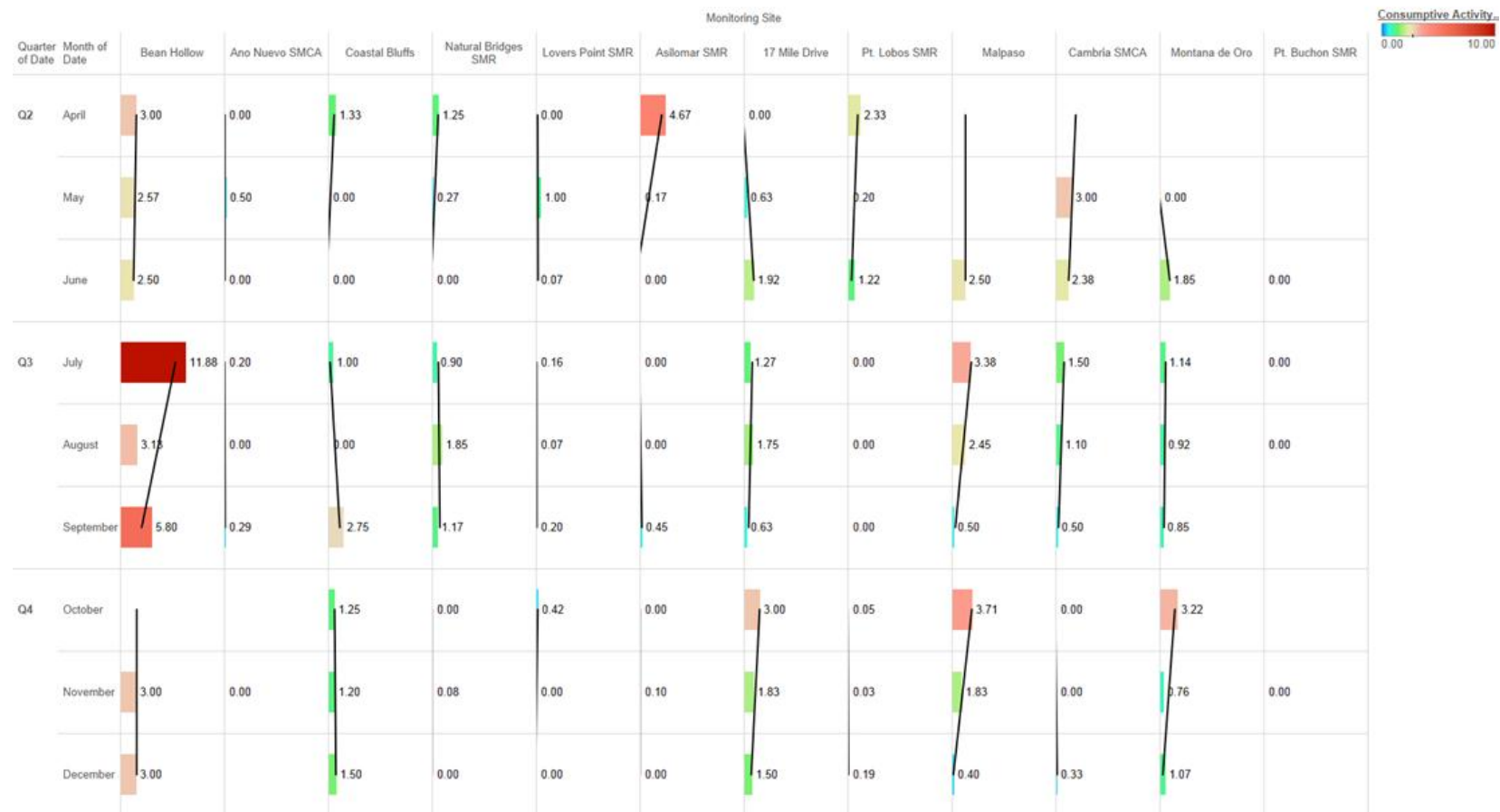




## Consumptive Trends

### April 2011 – December 2011

The x-axis shows our 12 different monitoring sites and their average amount of consumptive activities from April 2011 (when the MPA Watch program began) until December 2011. The y-axis is labeled with each month and quarter of the year. Sites with higher consumptive activities are shown with larger, red-colored bars, and sites with lower consumptive activities are colored in blue. The black lines (trend lines) crossing over each quarter, for each site, help us to see the trend of consumptive activities and whether it increased during the quarter, or decreased.



\*Reference sites: Bean Hollow, Coastal Bluffs, 17 Mile Drive, Malpaso, Montana de Oro

## Consumptive Trends by Quarter

### All Survey Sites

April 2011 – December 2011

Similar to the previous graph, this graph shows consumptive rates, with our trend lines helping to show increases or decreases throughout the entire year.

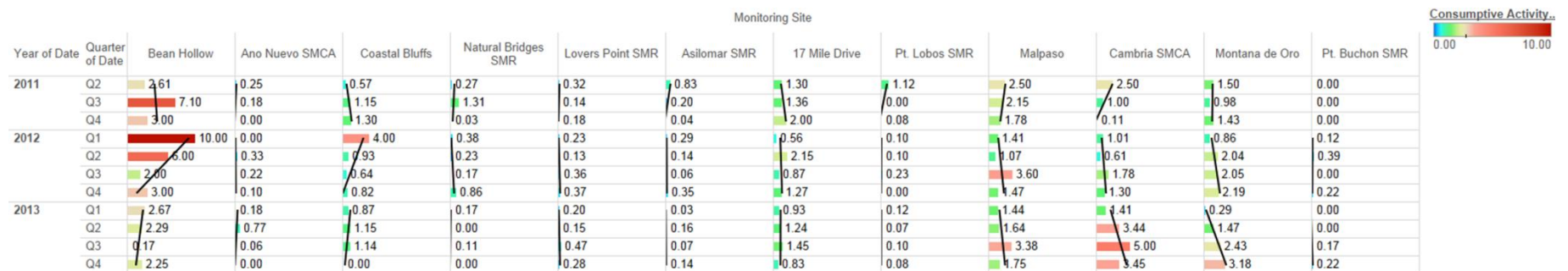


## Consumptive Trends by Year

### All Survey Sites

April 2011 – December 2013

This graph shows consumptive trends for the entirety of the MPA Watch program for The Otter Project.



## **Average Consumptive Activities**

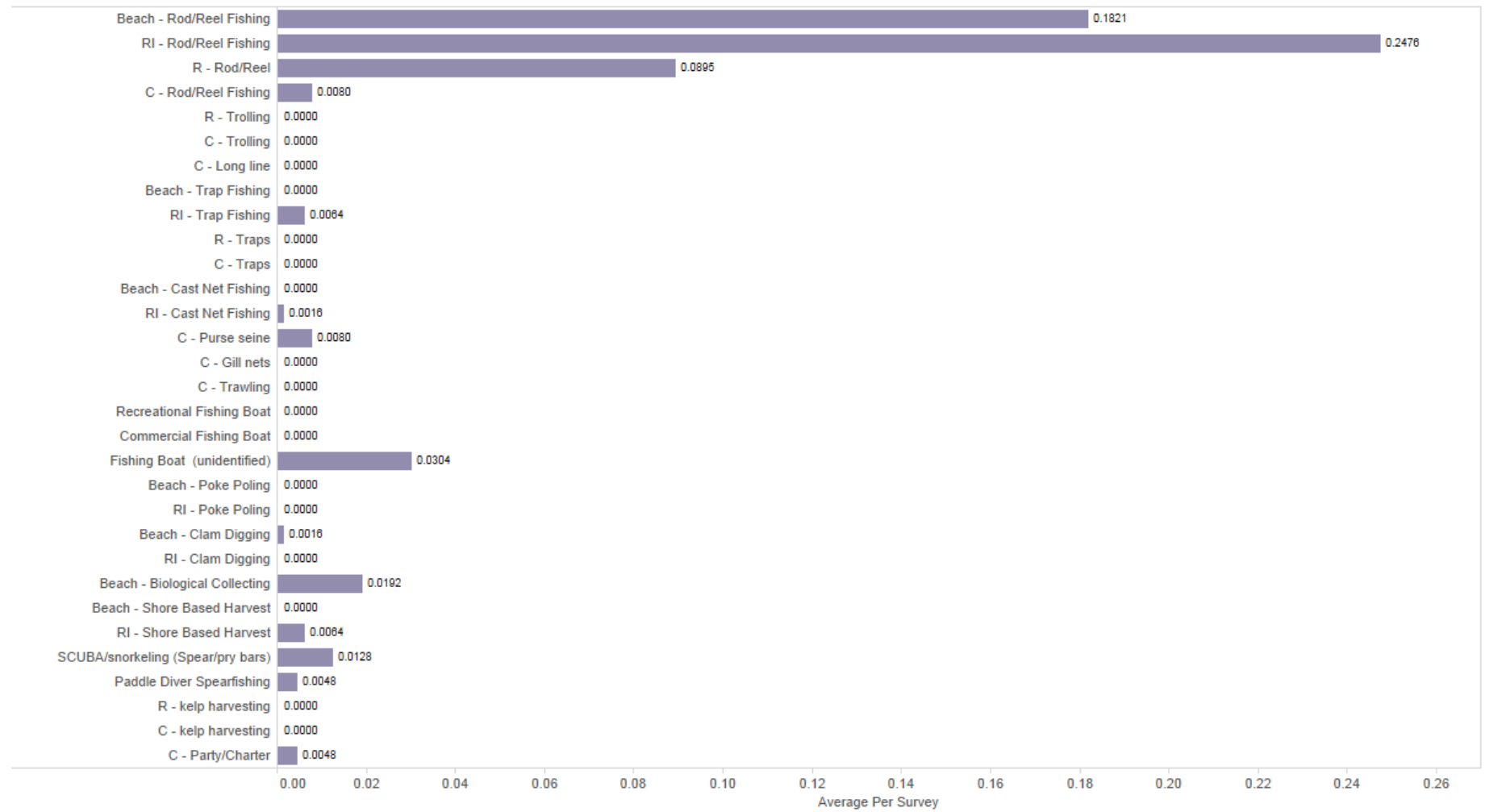
### **All Survey Sites**

**April 2011 – December 2011**

Below shows the average amounts of consumptive activities found in actual MPA survey sites. We can infer the biggest problems with non-compliance is rod/reel fishing, whether onshore or offshore. This graph helps to show that consumptive activities are being performed in both control and MPA sites and that these sites have a similar pattern of activities.

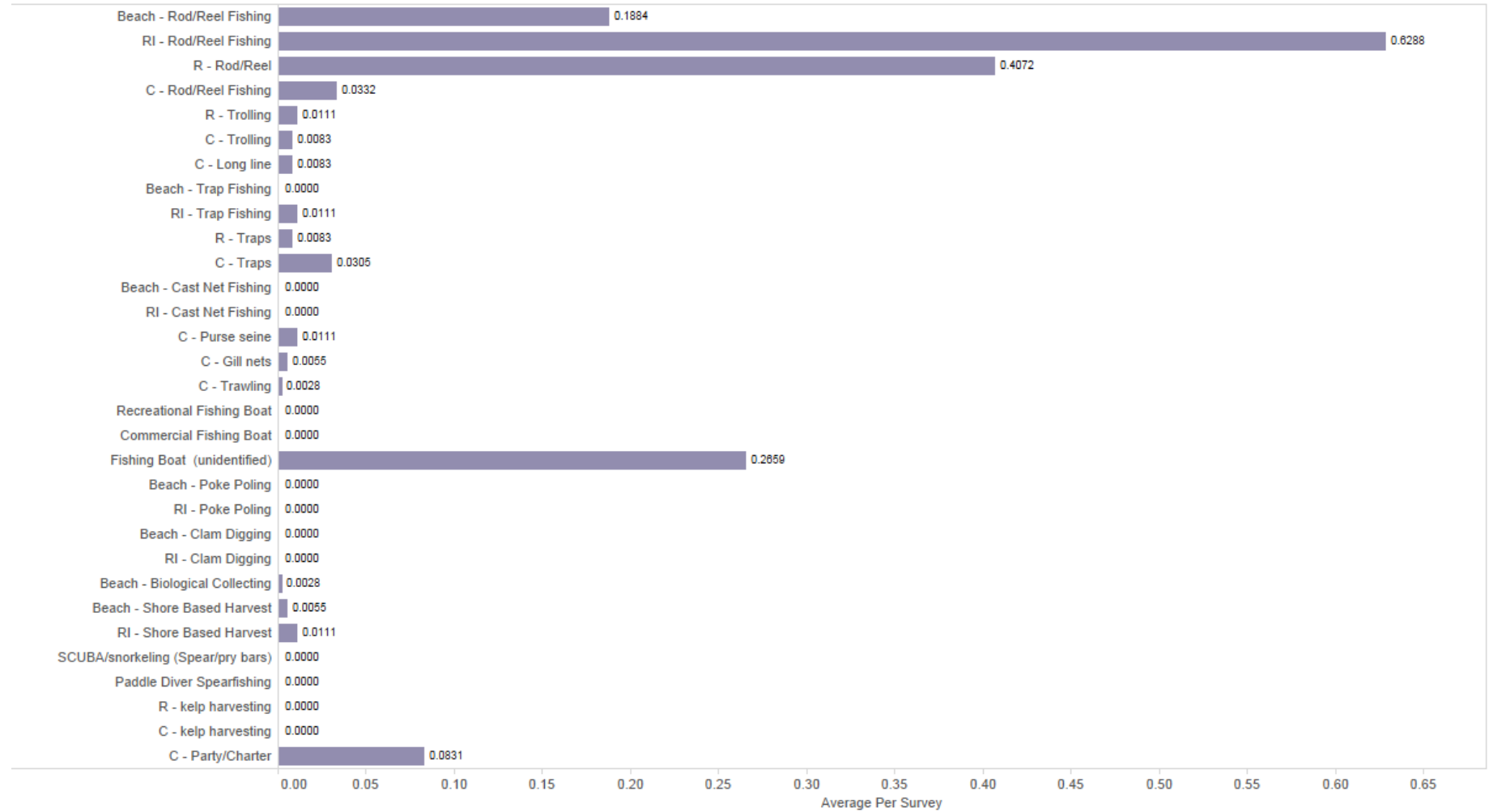
# Consumptive Activities in MPAs

## Number Occurrence Consumptive



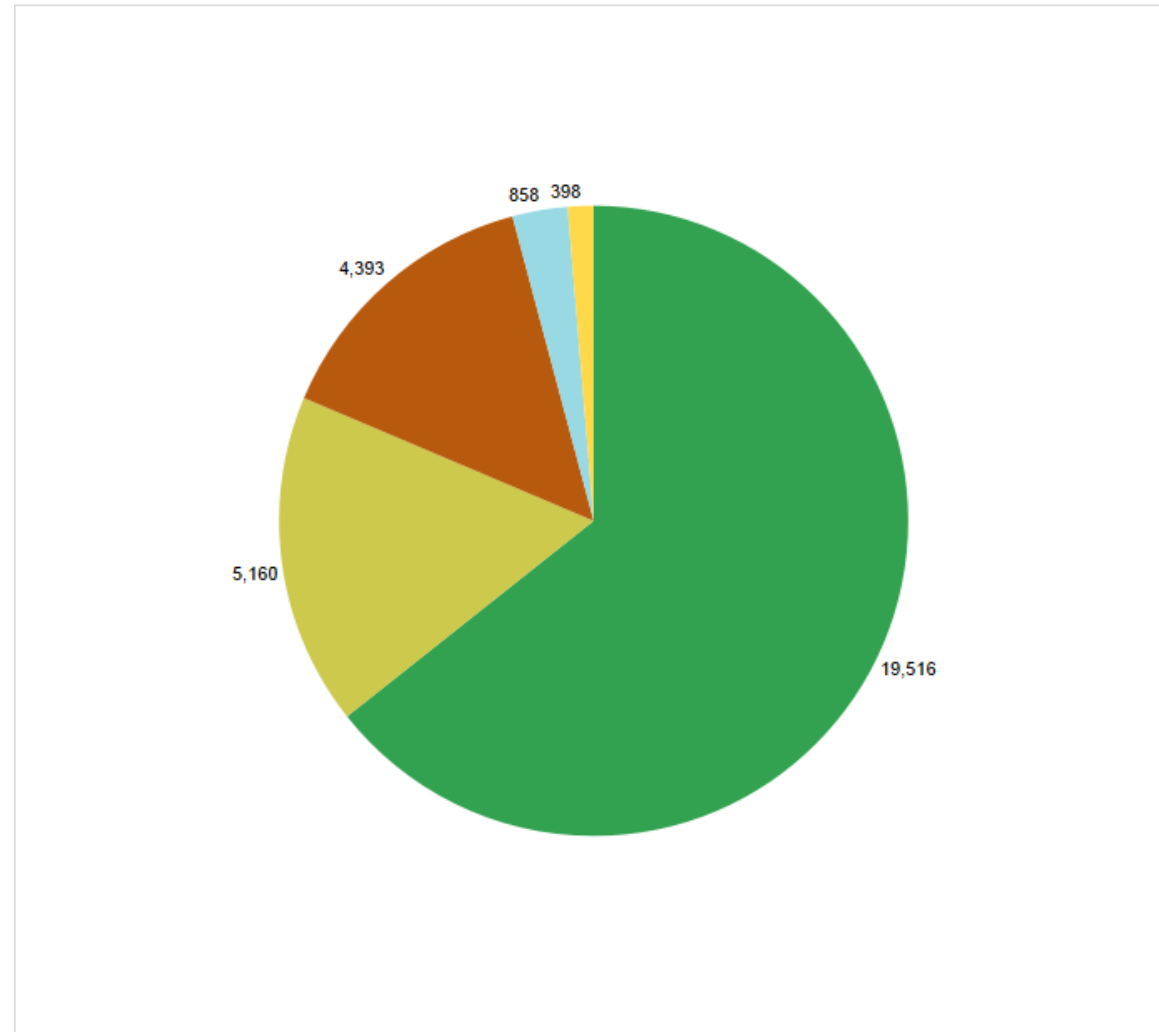
## Consumptive Activities in Control Sites

Number Occurrence Consumptive



**Total Number of Activities  
All Survey Sites  
April 2011 – December 2011**

**Total Activities**



**Measure Values**



- Beach
- Rocky Intertidal
- Offshore
- Boats
- Fishing Boats

# Use of the Coastline – Average Number of all Activities

## All Survey Sites

April 2011 – December 2011

Average Occurrence

