

Cabrillo National Monument Pinniped Monitoring SOP

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Introduction

Cabrillo National Monument (CABR) is a unit of the National Park System located at the tip of Point Loma in San Diego, CA. Despite its small footprint (160 terrestrial acres), CABR attracts nearly one million visitors each year, 380,000 of which visited the coastal area of the park in 2020. Further, the c. 2.5 km stretch of shoreline along the Coastal Trail and rocky intertidal areas of the park are visited by both humans and pinnipeds (seals and sea lions), leading to potential conflict. Over 13 observation days between February and April of 2021, an average of 25 adult seals and 8 pups were observed in the Sea Cove area (Pauline Geisler, *pers. observation*). In the same period, a mother and pup were observed on two days in the intertidal area of Zone 1. A malnourished sea lion pup and carcass were also discovered in Zone 1 in February 2021. Due to its value as both a habitat refuge and public resource, it is critical to monitor use patterns by pinnipeds and visitors at Cabrillo National Monument.

Objectives

Monitoring of pinnipeds will provide estimates of pinniped use and activities at three sites at Cabrillo National Monument. Data collected on pinniped and human abundance will be used to inform management decisions. This program was inspired by the San Francisco Area Network Pinniped Monitoring Protocol (Adams *et al.* 2009). Specific monitoring objectives of the CABR pinniped monitoring program are to:

1. Estimate juvenile and adult pinniped abundance
2. Document pinniped activities
3. Determine haul-out site and use preferences of pinnipeds
4. Evaluate human use of potential haul-out sites

Sampling Design

Study Species

California sea lions (*Zalophus californianus*) and harbor seals (*Phoca vitulina*) are the focal species of this sampling due to their high abundances and frequent haul-out behavior along southern California shores (Antonelis & Fiscus 1980). California sea lions are much larger than harbor seals, have loud barks, and can be identified by the following physical characteristics: brown color, external pinnae or “ears”, and “walking” behavior on land with front flippers rotated forward (Seal and Sea Lion Identification – Redwood NP - NPS). Alternately, harbor seals can have multi-color or solid color coats ranging from silver/gray to brown and black. They lack external pinnae and move on land in worm-like wiggling motions. California sea lions exhibit strong annual shifts in geographic habitat – breeding in the gulf of California from May to July and shifting northward shortly thereafter (Antonelis & Fiscus 1980). While harbor seals exhibit no such pattern, both species tend to return to preferred pupping sites each year (LeBouef *et al.* 1976). Other possibly present, but rare species, such as the Northern sea lion (*Eumetopias jubatus*), Northern and Guadalupe fur seals (*Callorhinus ursinus* and *Arctocephalus townsendi*, respectively) are not considered, as they represent very few findings (Antonelis & Fiscus 1980). An identification guide is included in Appendix 1.

Study Sites

The study area encompasses three sites along the coastal area at Cabrillo National Monument: Zone 1 Vista, Spur Trail Vista, and Sea Cove Vista. Habitat present in these areas include steep sandstone cliffs above short benches which transition to cobble interspersed with large boulders closer to the sea. The Zone 1 Vista site is accessible from the Tidepool Parking Lot (Lot 1) and encompasses the area of Zone 1 visible to the south from the large boulder atop the cliff at the split between the Coastal Trail and entrance to the intertidal zone. This area immediately borders the single entrance to the tidepool area and, consequently, is subject to high visitation and disturbance. The Spur Trail Vista site

encompasses the area visible from the north-west end of the area where the Spur Trail and Coastal Trail meet. The area visible from this point receives less visitation than the Zone 1 Vista. The Sea Cove vista site encompasses the area visible from Lot 3. This area has been closed to public visitation, and thus encounters little human disturbance. These three sites were chosen because they represent similar habitat areas and represent a gradient of visitation and human disturbance. They are also easily accessible along the Coastal Trail and have distinct landmarks for identification. A guide to the location and boundaries of study sites is included in Appendix 2.

Methodology

This study is designed to document the abundance and behaviors of California sea lions and harbor seals across three sites, which differ in visitation pressure, at Cabrillo National Monument. To allow for comparisons between visitation zones, equal and standardized sampling efforts are allocated to all sites.

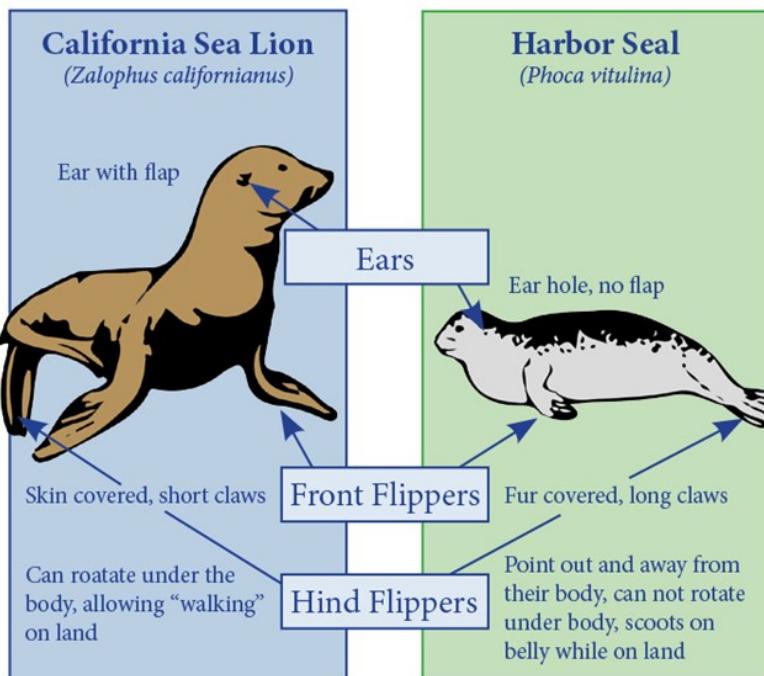
All materials for this SOP (designated binoculars, clipboards, pencils, data sheets, tally counters, and laminated site and pinniped guides) are located in the TPERP trailer in a labeled Pinniped Monitoring bin. TPERP volunteers will be trained in conducting surveys through a Continuing Education Lesson run by Marine Biologist Lauren Pandori and TPERP Coordinator Pauline Geisler.

To estimate the abundance and activities of Harbor Seals and Sea Lions, along with visitation at each site, surveyors will conduct 15-minute assessments at each site. During the first 10 minutes, surveyors document the number of adult and pup pinnipeds observed, separated into two activity categories: hauled out (in the intertidal) and swimming. Following pinniped observations, surveyors will conduct a 5-minute count of all people, including visitors, VIPs, or staff, in the intertidal area. Visitation counts *exclude* parking lot and trail areas and *include* rocky intertidal and bench areas below each site, measuring potential conflict between human and pinniped use at each site.

Data Entry and Archiving

Data sheets and materials are stored in a Pinniped Monitoring bin in the TPERP trailer. Data sheets are collected monthly by the Marine Biologist, and data are entered into an Excel Spreadsheet in the Pinniped Monitoring folder on the Natural Resources Drive (PHOTOS/MARINE/Pinniped Monitoring). Copies of sheets are scanned and stored in the aforementioned folder. Originals of data sheets are stored in the Resources Office in the Pinniped Monitoring binder.

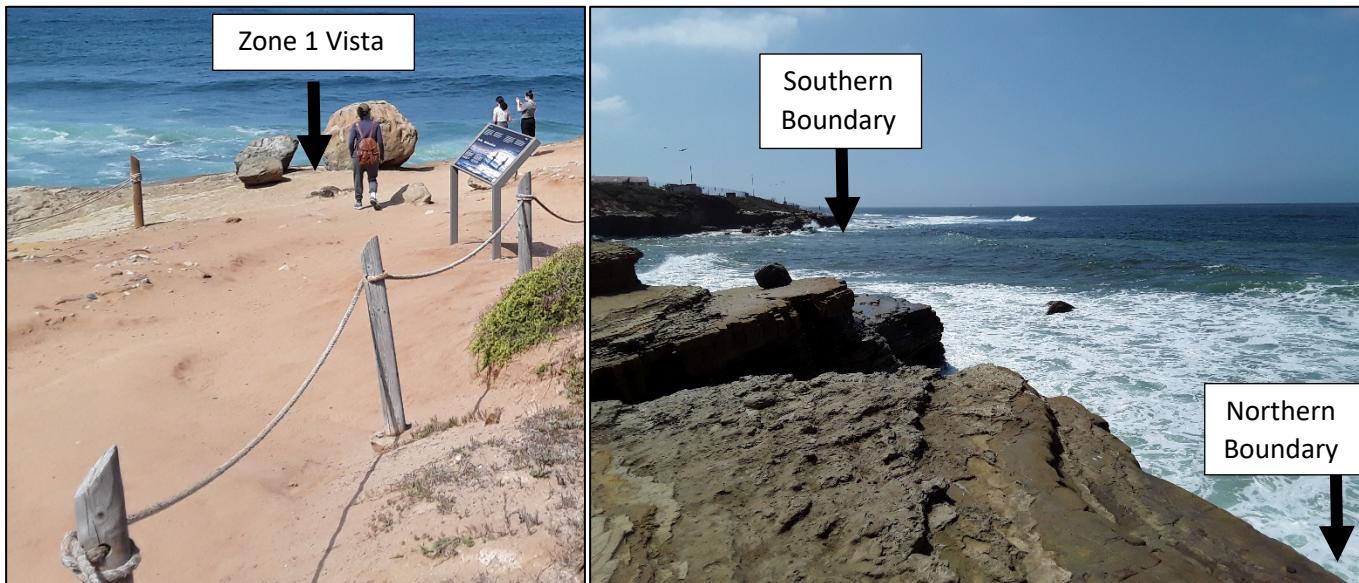
Appendix 1 – Seals vs Sea Lions



Source: Seal and Sea Lion Identification – Redwood NP – NPS

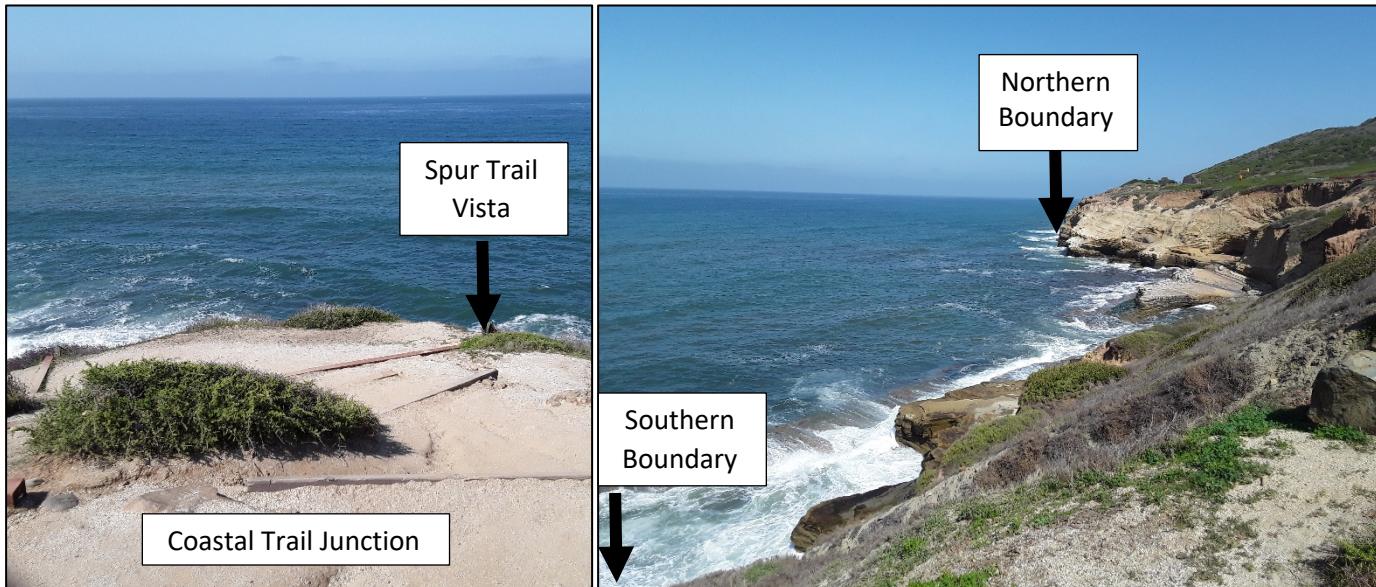
Appendix 2 – Vista Locations and Associated Sampling Sites

Zone 1 Vista



The Zone 1 Vista is located along the Coastal Trail, just north of Lot 1, near the interpretive signs and intertidal zone entry. When surveying from the Zone 1 Vista, stand amongst the south-most group of rocks. The largest rock is the northern boundary of the survey area. The stacks near Zone 2 are the southern boundary of the survey area. The boundary photo was taken facing south.

Spur Trail Vista



The Spur Trail Vista is located along the Coastal Trail, just south of Lot 2, just west of the Spur and Coastal Trail junction. When surveying from the Spur Trail Vista, stand at the north end of the first wide set of steps for a good view of the intertidal areas immediately below (accessible to the public on the Spur Trail) and to the north of the Vista. The northern boundary of the survey area is the point past the Sea Cave (you will not be able to see around this point from the Vista), and the southern boundary is the first large bench of intertidal visible from the Vista. This site has some overlap with the Sea Cove vista.

Sea Cove Vista



The Sea Cove Vista is located at Lot 3. Walk to this site from Lot 2, being careful of water treatment plant traffic. The Vista point is located one post north of the post with a "Stay Back" sign on it. The northern boundary of this survey area is the water directly west of the Vista. The southern boundary is the large rock bench accessible to the public at the end of the Spur Trail. This site has some overlap with the Spur Trail Vista.

Appendix 3 – Data Sheet

Lauren Pandori – last updated April 2021

Thank you for collecting data for the CABR pinniped monitoring program! Please take an orange vest, clipboard with a pen/pencil, data sheet, map & ID guide, a tally counter, and binoculars for this survey. Fill out all fields to the best of your knowledge, making sure to make notes where estimated numbers are included. Upon completion, please return all materials to the Pinniped Monitoring bin in the TPERP trailer. 😊

Date: _____

Observer(s): _____

Estimate Percent Cloud Cover: _____ Estimate Wind (0-3): _____

Please refer to the laminated map and pinniped ID guide for vista locations. Hauled out individuals are those on the shore, while swimming and bottling individuals are in the water. Since swimming individuals are difficult to identify, all will be scored as “adults”. For each site, make a 10-minute observation of seals and sea lions along with a 5-minute observation of the number of people in the intertidal area. A tally counter may help with keeping track of counts.

Zone 1 Vista:

Pinniped Survey Time Start: _____ Time End: _____

| Species and Life Stage | In the Intertidal | Swimming |
|------------------------|-------------------|----------|
| Seal – Adult | | |
| Seal – Pup | | |
| Sea Lion – Adult | | |
| Sea Lion – Pup | | |

Human Survey Time Start: _____ Time End: _____

Number of Humans Recorded: _____

Notable observations:

Spur Trail Vista:

Pinniped Survey Time Start: _____

Time End: _____

| Species and Life Stage | In the Intertidal | Swimming |
|------------------------|-------------------|----------|
| Seal – Adult | | |
| Seal – Pup | | |
| Sea Lion – Adult | | |
| Sea Lion – Pup | | |

Human Survey Time Start: _____

Time End: _____

Number of Humans Recorded: _____

Notable observations:

Sea Cove (Lot 3) Vista:

Pinniped Survey Time Start: _____

Time End: _____

| Species and Life Stage | In the Intertidal | Swimming |
|------------------------|-------------------|----------|
| Seal – Adult | | |
| Seal – Pup | | |
| Sea Lion – Adult | | |
| Sea Lion – Pup | | |

Human Survey Time Start: _____

Time End: _____

Number of Humans Recorded: _____

Notable observations:

Citations

Adams, D., D. Press, M. Hester, H. Nevins, D. Roberts, B. Becker, H. Jensen, E. Flynn, M. Koenen, and S. Allen. 2009. San Francisco Bay Area Network pinniped monitoring protocol. Natural Resource Report NPS/SFAN/NRR—2009/170. National Park Service, Fort Collins, Colorado.

Antonelis, G.A. and Fiscus, C.H., 1980. The pinnipeds of the California Current. CalCOFI Report, 21, pp.68-78.

Le Boeuf, B.J., Bonnell, M.L., PIERSON, M., Dettman, D.H. and Farrens, G.D., 1976. Pinnipedia: Numbers, distribution and movements in the Southern California Bight. Final report to the Bureau of Land Management. Marine Mammal and Seabird Survey of the Southern California Bight Area, 3.