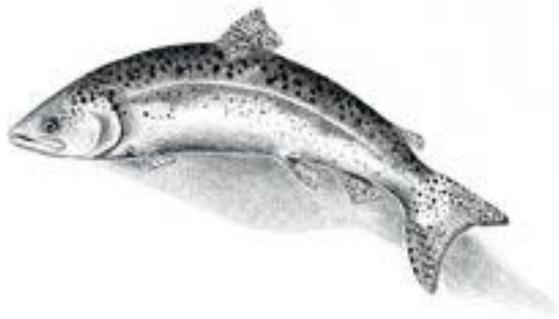




# **Point Reyes National Seashore**

## **Site Handbook**

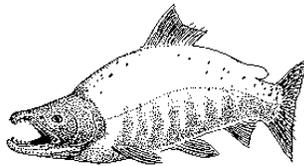






### **Watershed Stewards Project Mission**

The mission of the AmeriCorps Watershed Stewards Project is to conserve, restore, and enhance anadromous watersheds for future generations by linking education with high quality scientific practices.



*Sockeye Salmon*



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## Introduction

### Site Description

#### Location

##### General Description:

Point Reyes National Seashore is located in northern California within the San Francisco Bay Area. Point Reyes is located 30 miles north of San Francisco along highway 1 in west Marin County.

##### Detailed Placement Site Description:

The Point Reyes National Seashore placement site is located within the Bear Valley Administration buildings. These buildings are located just before members get to the Bear Valley Visitor Center. To get to the office members will follow the signs as if members were going to the visitor center. However, when members make the left hand turn off of Bear Valley Rd members will then make an immediate right towards a group of white buildings with a parking lot. Follow the road across a small bridge (Bear Valley Creek) and make a right hand turn and go past a white building with a porch in the front, a set of garages and another white building. The members' office will be in building 533A which is a two story building that is set back near Bear Valley Creek. If members get to the fire station or a gate members went too far.

Below is a link for a map of the Bear Valley Area to help members navigate to the office.

[http://www.nps.gov/pore/planyourvisit/upload/map\\_bearvalleyarea.pdf](http://www.nps.gov/pore/planyourvisit/upload/map_bearvalleyarea.pdf)

#### Agency/Affiliation

Point Reyes National Seashore is part of the National Park Service.

#### Brief Ecological Description

As wildland habitat is lost elsewhere in California, the relevance of the Point Reyes Peninsula increases as a protected area with a notable rich biological diversity. Over 45% of North American avian species and nearly 18% of California's plant species are found in the park due to the variety of habitat and uniqueness of the geology. Thirty-eight threatened and endangered species exist within Point Reyes National Seashore.

During the service year members may also catch a glimpse of some of the animals that make their home here. Wildlife abounds throughout the Seashore. Along the coast members may find marine mammals such as whales, seals, and sea lions. A closer look reveals an abundance of bird life feeding near the tideline. Back in the forest, members may glimpse a bobcat, coyote, raccoon, or skunk scurrying off. We also have plenty of deer and elk to be seen. In our streams we have federally endangered coho salmon, threatened steelhead trout, sculpin, stickleback, lamprey and roach.



For more information on the ecology and research in the area please visit the following website: [www.sfnp.org](http://www.sfnp.org)

### **Mentor Bio**

Michael Reichmuth currently works for the National Park Service and manages the Coho and Steelhead long term monitoring program based at Point Reyes National Seashore. During his time with the National Park Service, Michael has collected over eight years of data on juvenile, smolt and adult coho and steelhead within Olema, Redwood, Pine Gulch, and Cheda Creeks. Michael also assisted in both restoration and monitoring activities for the Giacomini restoration project on Lagunitas Creek and the lower Redwood Creek restoration project. Both of these projects have increased habitat for juvenile salmonids as they migrate from the creek to the ocean. Prior to his arrival to Point Reyes, Michael worked as a fishery biologist for the U.S. Fish and Wildlife service coordinating and assisting in salmonid monitoring activities on the Trinity River. Michael first started in the field of fisheries as a high school student as a member of the United Anglers of Casa Grande High School. He graduated with a B.S. in Freshwater Fisheries from Humboldt State University during which time he worked for the California Conservation Corps Salmon Restoration Project.

Sarah Carlisle currently works for the Point Reyes National Seashore Association and is the field crew leader for the Coho and Steelhead long term monitoring program based at Point Reyes National Seashore. Sarah graduated from Princeton University with a B.A. in Ecology and Evolutionary Biology in the spring of 2003. Sarah joined the Coho and Steelhead long term monitoring team as AmeriCorps member through the Marin Conservation Corps program in the fall of 2005. After spending a few years working on avian influenza monitoring with the US Department of Agriculture and as a biological monitor for the National Park Service, Sarah returned to the Coho and Steelhead Monitoring Team in 2008 and was promoted to fisheries crew leader in 2009.



**General Calendar of Duties at Point Reyes National Seashore**

<i>Month</i>	<i>Location</i>	<i>Site Duties</i>	<i>Work Load</i>	<i>Typical Work Hours</i>
<b>Fall</b>				
October	Field, office	Lagunitas Estuary Fish sampling, Summer data verification	moderate	M-F, 8-4:30
November	Field, office, classroom	Complete data verification, Complete first classroom education component, start first spawner survey, Start on Stream Team development	moderate	M-F, 8-4:30
<b>Winter</b>				
December	Field, office, classroom	Conduct weekly spawner surveys, conduct storm water quality monitoring, Start classroom development plan, enter water quality and spawner data, Complete first Stream Team Project	moderate	M-F, 8-4:30 or Tues-Sat, 8-4:30 during weeks with Stream Team Events
January	Field, office, classroom	Conduct weekly spawner surveys, conduct storm water quality monitoring, enter water quality and spawner data, Complete first Stream Team Project. Complete first classroom visit	Heavy	M-F, 8-4:30 or Tues-Sat, 8-4:30 during weeks with Stream Team Events
February	Field, office, classroom	Conduct weekly spawner surveys, conduct storm water quality monitoring, Complete second classroom visit, enter water quality and spawner data, complete third Stream Team Project.	Heavy	M-F, 8-4:30 or Tues-Sat, 8-4:30 during weeks with Stream Team Events
<b>Spring</b>				
March	Field, office,	Conduct smolt trapping, enter smolt data, complete monthly water quality monitoring, Complete third classroom visit.	Heavy	Tues-Sat, 8-4:30 or Sun-Thur, 8-4:30 depending on smolt trapping schedule
April	Field, office, classroom	Conduct smolt trapping, enter smolt data, complete monthly water quality monitoring, complete fourth classroom visit, Complete second classroom visit.	Heavy	Tues-Sat, 8-4:30 or Sun-Thur, 8-4:30 depending on smolt trapping schedule
May	Field, office, classroom	Conduct smolt trapping, enter smolt data, complete monthly water quality	Heavy	Tues-Sat, 8-4:30 or Sun-Thur, 8-4:30 depending on smolt



		monitoring, Complete fifth classroom visit		trapping schedule
<b>Summer</b>				
June	Field, office	Conduct Lagunitas Creek estuary fish sampling, start summer juvenile salmonid monitoring, verify smolt trapping data, complete monthly water quality monitoring, complete last classroom visit.	Moderate	M-F, 8-4:30
July	Field, office	Conduct summer juvenile salmonid monitoring, enter juvenile monitoring data, complete monthly water quality monitoring,	Moderate	M-F, 8-4:30
August	Field, office	Conduct summer juvenile salmonid monitoring, enter juvenile monitoring data, complete monthly water quality monitoring.	Moderate	M-F, 8-4:30



## **Description of Site Duties**

### **Position Overview**

The WSP Point Reyes National Seashore water resources position plays an integral part in the water quality, stream team, and coho and steelhead monitoring programs within the San Francisco Bay Area National parks (See Map Below). This position is responsible for maintaining volunteer lists and coordinating projects for Stream Team. Stream Team is an essential program that allows the community to get involved in restoration activities that are pivotal in maintaining a healthy stream ecosystem in Point Reyes. The WSP Point Reyes National Seashore position is also responsible for collecting a variety of water quality parameters at established water quality stations throughout the San Francisco Bay Area national parks. This information is utilized for both maintaining the safety of water recreational use and to guide management action in regards to land use practices. This position also supports the ongoing multiple-life stage salmonid monitoring program in the Olema Creek, Pine Gulch Creek, Redwood Creek, and Cheda Creek watersheds of coastal Marin County. These watersheds support, what have been considered the southernmost stable populations of coho, and represent two of the five genetic subgroups within the Central California Coast (CCC) Coho Evolutionarily Significant Unit (ESU).

### **Point Reyes National Seashore Fisheries and Water Quality AmeriCorps Description of Duties**

#### **Program Management and Field Duties:**

- Coordinate and schedule volunteer staff for fisheries and water resource program field work.
- Coordinate and lead Stream Team restoration activities including but not limited to; bank stabilization, riparian re-vegetation, non-native plant removal, and cattle exclusion projects.
- Assist in the implementation of the Stream Aquatic Resource Monitoring Program Protocol for coastal Marin County streams within and adjacent to NPS lands.
- Assist with spawner surveys, smolt trapping, habitat surveys, snorkel surveys, and index reach survey activities.
- Safely work long field days involving carrying equipment in rugged terrain under a variety of weather conditions.
- Independently locate and sample water quality at established water quality stations.
- Operate, maintain and calibrate water-quality equipment and probes.
- Collect and process water-quality samples for lab analysis, maintaining chain-of-custody for samples.

#### **Reporting:**

- Assist in the compilation of Coho and Steelhead Monitoring Program reports to provide an overview of project accomplishments, surveys, analysis and conclusions.
- Assist with preparing data analysis and report-writing for annual Water-Quality Status reports.

#### **Data Management:**

- Implement data management needs as necessary including data entry, data verification, and database maintenance.



## ISPs and Outreach Events

### ISP Information

### Outreach Information

There are a variety of outreach events and opportunities within the San Francisco Bay Area national parks. In particular Point Reyes National Seashore will be celebrating 50 years as a national park and has several events surrounding this anniversary. Events include but are not limited to guided hikes, volunteer opportunities, and a 2012 Trails Challenge. In addition, coho salmon are the species of the year for 2012 at Golden Gate National Recreation Area. Events for species of the year include but are not limited to School group activities, staffing a special booth at park events, and a Welcome Back Salmon outreach events at Muir Beach.

Contacts: Doug Hee at 415-464-5154 or [doug\\_hee@nps.gov](mailto:doug_hee@nps.gov)  
Michelle O'Herron at 415-561-3526 or [moherron@parksconservancy.org](mailto:moherron@parksconservancy.org)

### Calendar of Outreach Events for Site / Community (Optional)

Science Symposium held during the Spring 2013  
Muir Beach Welcome Back Salmon Event held during the Fall of 2013 at Muir Beach.  
Muir Wood Earth Day held during the Spring of 2013 at Muir Woods.



## **Education**

### **Education Notes**

Point Reyes National Seashore has a strong interpretation division providing educational programs for local school groups.

### **Site / Region Specific Education Resources**

Contacts: Doug Hee at 415-464-5154 or [doug\\_hee@nps.gov](mailto:doug_hee@nps.gov)  
Leslie Alder-Ivenbrook at [lesliea@ptreyes.org](mailto:lesliea@ptreyes.org)



## Local Ecology

### Descriptions of Local Ecology

#### Terrestrial Ecology

San Francisco Bay Area national parks lie within an area widely recognized for its unique Mediterranean climate and amazing ecological diversity. The region's spectacular array of land-based habitats ranges from shady forests and lush, tree-lined riparian zones to arid, fire-hardy chaparral and coastal scrub and coastal prairie—the most diverse type of prairie. It also includes a broad array of fresh and salt water wetlands and coastal habitats like dunes and beaches.

#### Coastal Dunes

Although it may be hard to imagine, much of San Francisco city and county was once covered in undulating sand dunes and thriving dune scrub habitat. Dune plants commonly have small, waxy, hairy, and/or succulent leaves, and deep root systems that allow them to survive in dry, nutrient-poor sand while being battered by wind and salt spray. Common native species include beach burr (*Ambrosia chamissonis*), yellow sand verbena (*Abronia latifolia*), dune strawberry (*Fragaria chiloensis*), sagewort (*Artemisia pycnocephala*), tansy (*Tanacetum camphoratum*), mock heather (*Ericameria ericoides*), chamisso bush lupine (*Lupinus chamissonis*), deerweed (*Lotus scoparius*), and cobweb thistle (*Cirsium occidentale*).

Unfortunately, many coastal dunes in the San Francisco Bay Area national parks have been overrun by European beachgrass (*Ammophila arenaria*) and iceplant (*Carpobrotus edulis*). These invaders were introduced in the late 1800s and early 1900s to control erosion and to stabilize the numerous sand dunes in the area. These species have since become so pervasive that they are outcompeting native dune plants and preventing the natural movement of sand that is an essential characteristic of this ever-changing habitat. The parks have undertaken a number of projects to try to remove these invasive species and restore native dune vegetation.

#### Coastal Scrub and chaparral

Coastal scrub and chaparral are the two most common shrublands found in coastal California. Shrub species that make up coastal scrub typically have bendable stems and soft leaves that generally shrivel up or fall off in the dry summer months. The leaves of many species also contain aromatic compounds that smell like kitchen herbs (e.g. sage or rosemary). In Golden Gate and Point Reyes, the coastal scrub is composed of species that are adapted to relatively wet and cool conditions.

Chaparral shrublands are made up of somewhat taller shrubs that have stiff, woody branches and thick leathery leaves that generally do not fall off or shrivel up during the dry summer months like those of coastal scrub plants. In the San Francisco Bay Area, chaparral can be found in very cool, moist conditions near the coast (e.g. maritime chaparral), on relatively dry



and harsh serpentine soils (e.g. serpentine chaparral), and also on ridges or in dry interior canyons associated with a variety of soil types.

Fire is important to many of the vegetation types found throughout California, including coastal scrub and chaparral. Both habitats include species that are clearly adapted to wildfire and will resprout following fire or require fire to germinate from seed. All types of coastal scrub and chaparral are adapted to a particular fire regime, which is based on the fire return interval, intensity, seasonality, and other factors. In many cases, humans have altered fire regimes by making the fire return interval too short (frequent burning) or long (fire suppression). When fires are too frequent, shrublands can convert to other vegetation types, like grassland. In the case of the relatively cool, moist shrublands typical of Golden Gate and Point Reyes, the time between fires has been long enough that tree species like coast live oak (*Quercus agrifolia*) and Douglas-fir (*Pseudotsuga menziesii*) have colonized and shaded-out shrub species.

### Forests

Forests in the Bay Area range from massive old growth redwood forests to open, grassy oak woodlands. These forests are home to a wide diversity of plant and wildlife species. Ancient, cavernous redwood groves shade an understory of tanoak and California bay laurel, hazelnut, thimbleberry, western azalea wood rose, wild ginger, trillium, redwood sorrel, sweet coltsfoot, elk clover, and sword ferns. Northern spotted owls, coho salmon, banana slugs, and many other wildlife species make their home in the redwood forests. Oak woodlands made up of live oaks or valley oaks interspersed with grasslands provide an abundance of food for animals in the form of acorns and insects. Pine forests are also found in the parks in areas where soil conditions are right. Fire-dependent bishop pines intermingle with an understory of coffeeberry, huckleberry, salal, manzanita, and ceanothus. Douglas-fir forests include California bay, big leaf maple, California coffeeberry, California hazel, red elderberry, ceanothus, and poison oak.

### Grasslands

While they might not look like it, grasses are actually flowering plants. Some grass species are annuals while others are long-lived perennials that have deep, extensive underground root systems that allow them to survive year after year of summer droughts. In the Bay Area, perennial grasses like purple needle grass (*Nassella pulchra*), red fescue (*Festuca rubra*), and California oatgrass (*Danthonia californica*), along with a multitude of other plant species, make up an ecosystem called northern coastal prairie—the most diverse grassland type in North America. This type of grassland once covered large swaths of the California coast, but now just less than one percent remains as a result of farming, land development, and invasive species. Small pockets of coastal prairie can be found in the Golden Gate National Recreation Area and relatively large prairie ecosystems still exist at Point Reyes National Seashore.

Unfortunately, historic and on-going habitat disturbance from over-grazing, frequent fires, brush clearing, and agriculture have made exotic annual grasslands the most common type in the San Francisco Bay Area national parks and surrounding areas. In these areas invasive



species like wild oats (*Avena barbata* and *A. fatua*), Italian wild rye (*Lolium multiflorum*) brome grasses (*Bromus diandrus*, *B. hordeaceus*, and *B. madritensis*), and annual fescues (*Vulpia myuros* and *V. bromoides*) cover areas that were once wildflower fields, perennial grasslands, shrublands, or even woodlands.

### Aquatic Ecology

Water is key to life in the relatively arid Mediterranean environments of Bay Area national parks. Freshwater areas like rivers, streams, and ponds offer a place for numerous creatures to live, find shelter, feed, or reproduce. Brackish and saltwater marshes are havens for migrating birds and juvenile aquatic species, and capture sediment and pollutants from upstream. Along the coast, tidepools and rocky intertidal areas are populated with an array of hardy marine algae and invertebrates (animals without backbones). The boundaries of Golden Gate and Point Reyes also extend a quarter mile offshore. These protected marine areas—in combination with the adjacent Cordell Bank, Gulf of the Farallones and Monterey Bay Marine Sanctuaries—are some of the richest areas of marine life found anywhere in the world.

### Intertidal

In the narrow band between land and sea, plants and animals must endure being pounded by icy waves at some times while being parched by hot, dry air at others. Despite these extreme conditions, wave-swept rocky shores are full of life because they also have plenty of light, nutrients, and oxygen.

Bounded by high and low tides, the intertidal zone is rich in algae and invertebrates, but the particular mix of species varies with proximity to shore. The high intertidal zone, which is inundated only during high tides, has species including rockweed, acorn barnacles, turban snails, and lined shore crabs. The middle intertidal zone, which is exposed to the air at least once a day, is home to creatures such as sea lettuce, aggregating anemones, chitons, gooseneck barnacles, mussels, and ochre stars. The low intertidal zone, which is exposed only during very low tides, is inhabited by coralline algae, giant green anemones, purple sea urchins, and bat stars. While resilient to the normal extremes of their environment, intertidal species are also sensitive to fluctuations in salinity and temperature, and so serve as indicators of environmental change.

### Marine

The central California coast is the only eastern boundary upwelling zone in North America, and one of only four eastern boundary upwelling zones in the entire world. Upwelling occurs when nutrient rich cold water rises from the ocean's depths to replace the relatively warm surface waters. While this phenomenon is responsible for the summer fog along the coast, it also creates levels of marine productivity matched by very few other places on Earth. The marine habitats within and around the San Francisco Bay Area Network of national parks are thus home to some of the richest and most diverse collections of marine life on the planet.



Even areas with high levels of biodiversity and productivity often lack the resilience to persist under threat of human activities. The National Park Service and its partner organizations are working ardently to preserve these areas. For example, it is important to establish a vast collaborative network of marine sanctuaries because of the migratory nature of many marine species. While the National Park Service boundary only extends a quarter mile off the shoreline, the productive waters that lie beyond are protected by the National Oceanic and Atmospheric Administration's (NOAA's) Gulf of the Farallones, Cordell Bank, and Monterey Bay national marine sanctuaries. NOAA and NPS work in close contact to ensure adequate protection for the marine life and the unique habitats on which they depend.

### Streams

In an arid, Mediterranean climate like that of the San Francisco Bay Area, rivers and streams provide corridors of precious water that can sustain dense stands of trees and wetland plants, and that provide habitat for birds, fish, amphibians, insects, and aquatic invertebrates. Streams found within the San Francisco Bay Area national parks are heavily influenced by local microclimates. Streams rapidly rise in during winter storms allowing coho salmon and steelhead trout to access spawning grounds. During the summer months streams small streams will quickly become dry while the larger watersheds will continue to flow, providing rearing habitat for juvenile salmonids. Both Lagunitas Creek and Redwood Creek found in Point Reyes National Seashore and Golden Gate National Recreation Area represent the most southern stable populations of coho salmon along the eastern Pacific coast.

### Wetland and Estuaries

Where freshwater streams meet saltwater they form estuaries—one of the most fertile habitats on earth. These rich habitats provide spawning grounds for crabs and numerous fish species, and are a vital stopping point for migratory ducks and shorebirds as they fly thousands of miles up and down the Pacific Flyway.

The shores of an estuary are often fringed with wetlands—a generic term used to describe a variety of habitats where the land is at least sometimes covered with water. Salt marshes are a particular kind of wetland that occurs in saline environments like near estuaries or bays, while common freshwater wetlands can include marshes and swamps typical of the upper Sacramento – San Joaquin River Delta. In both kinds of wetlands, submerged and partially submerged vegetation provide food and refuge for a myriad of species and capture sediment and pollutants. Development has claimed much of the wetland habitat in the Bay Area, but a number of restoration projects, including those spearheaded by the National Park Service and its partners at Crissy Field, Drakes Estero, Muir Beach, and the Giacomini and Banducci farms are attempting to reverse that trend.



## **Housing and Local Resources**

### **Housing Contact List**

Temporary Park Service Housing: Contact Anne Clemons at 415-464-5209 or [anne\\_clemons@nps.gov](mailto:anne_clemons@nps.gov).

### **Local Resource Contacts**

<http://sfbay.craigslist.org/>



# Community Information

## Map of Area



Figure 1. San Francisco Bay Area Inventory and Monitoring Network.



## **Community Demographics**

Point Reyes National Seashore has a diverse surrounding community. From small communities with populations less than 1,000 immediately adjacent to the park to larger communities with over 10,000 residents just a 20 minute drive away. Point Reyes Station is the closest town to park headquarters and is known as a local tourist destination. The community is made up of businesses catering to tourist, retirees, and ranchers.

For more demographic facts on Marin please visit the website listed below

[http://www.healthymarin.org/javascript/htmleditor/uploads/2010\\_Demographics\\_\\_\\_Final\\_\\_\\_8.10.pdf](http://www.healthymarin.org/javascript/htmleditor/uploads/2010_Demographics___Final___8.10.pdf)

## **Community Services**



## **Entertainment and Community Events**

### **Resources for Affordable Entertainment Options**

There are a variety of low cost events available in the San Francisco Bay Area including both local events within Point Reyes Station and within the surrounding community. With the city of San Francisco only 30 miles to the south of Point Reyes, AmeriCorps members have a variety of events and entertainment at their fingertips. A few of the more popular free events are listed below.

### **Recurring Event List**

- Far West Festival – Point Reyes Station (July)
- Hardly Strictly Blue Grass Festival – San Francisco (October)
- Drakes Beach Sand Sculpture Competition – Point Reyes National Seashore (July)
- Chinese New Year Parade – San Francisco (February)
- Bay to Breakers – San Francisco (May)
- Power to the Peace Festival – San Francisco (September)



## **Helpful Hints**

**Title**

## **Attachments**

**Contact Lists**

**Ed Logs & Information**

**ISP Logs & Information**

**Outreach Summaries & Information**

**Site Protocols & Information**

**Site Forms**