Point Reyes National Seashore

National Park Service
U.S. Department of the Interior

Winter Wildlife Docent Handbook 2023-2024


Photo: Anela Kopshever


Photo: NPS


Photo: Anela Kopshever


Photo: Joey Meuleman

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Welcome to the Winter Wildlife Docent Program!

This handbook is intended to supplement the in-person training that you will receive. We are trying a new format this year. Each section begins with FAQs on the subjects of that section. In addition to focusing on the elephant seals and whales which form the heart of the WWDP program, we hope that this handbook will help you answer other questions that visitors often have.

We welcome feedback on this format and content.

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BACKGROUND

What does it mean to be a docent?

As a docent, you will represent the National Park Service and its mission. It is your job to help the National Park Service preserve and protect its resources. Remember that you are representing the Seashore and the agency when you are working as a docent. Please wear volunteer identification at all times and put your best foot forward when talking to the public.

More specifically, your purpose as a docent in the Winter Wildlife Docent Program is to educate visitors about the elephant seals, whales, and Point Reyes, as well as the rules and regulations designed to protect them. ·By inspiring visitors, we are helping preserve parks and their resources. "Knowledge leads to understanding. Understanding leads to love. Love leads to protection." Try to engage visitors by offering them information about the behaviors they may be seeing, inviting them to use the spotting scope or binoculars, or see and touch the exhibits you may have. Envision what you would want to hear and learn if you were a visitor.

Read and re-read your docent manual a few times during the season so you can be knowledgeable and answer as many questions as possible. If you do not know the answer, ask a nearby docent or ranger. It is perfectly fine to say that you do not know the answer.

Please arrive on time on the days you have committed to work. If you are unable to be present on a day you have agreed to work, contact the Winter Wildlife docent program and its Lead Docents. The contact information will be given to you separately. If you need an accommodation, please speak with the lead docent or the supervising ranger. We will not inquire about the nature of the disability but rather will simply discuss the accommodation that will be needed.

It is important to dress for the weather both for your comfort and safety. Point Reyes can be colder, wetter, and windier than other places as little as ten miles away. The advice from a past docent is to bring layers, layers, and layers.

Bring food if you plan on eating lunch on your docent days. There is a refrigerator and microwave available at Drakes Beach, but not likely available at other locations.

In addition to safety of the animals, safety of the docents is a top priority. If you are not feeling well, or the weather seems too dangerous to drive in or to be here for your shift, just let us know.

Difficult visitors are rare but do occur. Don't try to deal with a difficult visitor. If the visitor is endangering themselves or other visitors or is disturbing the elephant seal colony or any other animal or person, call Dispatch on the radio and/or notify whoever is the Lead Docent that day. You will receive separate instructions on how to use the radios.

While there are rules and guidelines applicable to you as a docent, we want you to remember to HAVE FUN while carrying out your duties.

THANK YOU FOR BEING A DOCENT!

What is Interpretation?

> *"Interpretation is an attempt to create **understandings**."* (Alderson & Low, 1976)
>
> *Interpretation is "a catalyst in creating an opportunity for the audience to form their own intellectual and emotional **connections** with the meanings and significance inherent in the resource* (NPS, 2001)
>
> *Interpretation is "a communication process that forges emotional and intellectual **connections** between the interests of the audience and the meanings inherent in the resource."* (NAI, 2002)

The main purpose of any kind of interpretation is to communicate with visitors. Interpretation can relate new information, stimulate the senses, and challenge the imagination, as well as incite new perspectives. Interpretation enhances the public's understanding and enjoyment of the natural, cultural, and recreational resources by encouraging appreciation. Interpretation not only enables visitors to better understand their relationship to the environment, but it also helps to promote the preservation and sustainable use of resources.

The NPS Organic Act of 1916 sets out the agency's overarching mission: ". . . to conserve the scenery, and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." Interpretation helps do this by introducing visitors to meanings and ideas, while allowing them to retain and express their own values.

The formal standards for interpretation were established by Freeman Tilden in 1957 and remain relevant today. His approach to communicating with the public stressed six interpretive principles:

1. Any interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile.
2. Information, as such, is not interpretation. Interpretation is revelation based upon information. But they are entirely different things. However, all interpretation includes information.

3. Interpretation is an art, which combines many arts, whether the materials presented are scientific, historical, or architectural. Any art is in some degree teachable.
4. The chief aim of interpretation is not instruction, but provocation.
5. Interpretation should aim to present a whole rather than a part and must address itself to the whole [person] rather than any phase.
6. Interpretation addressed to children (say, up to the age of twelve) should not be a dilution of the presentation to adults but should follow a fundamentally different approach. To be at its best, it will require a separate program.

As Tilden suggests, some of what the site has to say can be understood by the visitor, but there may be additional meanings that the visitor may not yet have discovered. Interpretation can build upon these opportunities to expand the visitor's experience and understanding of the resources. The larger significance of the site resources provides the reason they have been preserved and protected. Providing visitors with opportunities to form their own intellectual and emotional connections with the significance of a site should help them care about the site. Interpretation, as the voice for the site, can be a critical tool in the preservation of the resources at the site.

> *"In the end, we conserve only what we love. We will love only what we understand. We will understand only what we are taught."*
>
> - Baba Dioum, Senegalese poet

Visitors who discover personal relevance and meaning will be more inclined to participate in conserving a site's resources so that future generations can enjoy them. This may then translate into larger, overarching support for resource protection and preservation on a national level. Through the preservation of NPS units that encompass places, ideas, meanings, events and habitats, we preserve the base-line components of a healthy, evolving society and environment. The NPS cannot preserve these national treasures forever without the public taking an active role in their preservation.

So what skills are needed to facilitate valuable, enjoyable experiences while translating the meanings of the resource?

Combining solid knowledge of the resource (KR), knowledge of the audience (KA) and appropriate interpretive techniques (AT) is essential to providing interpretive opportunities(IO). The interpretive equation describes the relationship as a mathematical formula where the proper combination of the elements results in an interpretive opportunity.

$$(KR + KA)\ AT = IO$$

An interpreter's knowledge of the resource, combined with their knowledge of the audience, can be shared through an appropriate technique to provide an interpretive opportunity. The better the interpreter's knowledge of resource and audience, and the more appropriate their techniques for presenting their knowledge to that audience, the more likely an opportunity will offer the visitors an opportunity to form their own personal connections with the resource. While clearly it is impossible to fully represent an interpretive product with a simple mathematical formula, the interpretive equation is a useful tool to help remember the key ingredients of good interpretation and how they relate to one another.

Who/what is the National Park Service?

The National Park Service cares for special places saved by the American people so that all may experience our heritage. On August 25, 1916, President Woodrow Wilson signed the act creating the National Park Service, a new federal bureau in the Department of the Interior responsible for protecting the 40 national parks and monuments then in existence and those yet to be established.

This "Organic Act" of 1916 states that "the Service thus established shall promote and regulate the use of Federal areas known as national parks, monuments and reservations . . . by such means and measures as conform to the fundamental purpose of the said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

The National Park Service still strives to meet these original goals, while filling many other roles as well: guardian of our diverse cultural and recreational resources; environmental advocate; world leader in the parks and preservation community; and pioneer in the drive to protect America's open space.

As of November 2023, the National Park System of the United States comprises 425 areas covering more than 83 million acres in 50 states, the District of Columbia, American Samoa, Guam, Puerto Rico, Saipan, and the Virgin Islands.

Although not all parks are as well-known as the Grand Canyon and Yellowstone, all are areas of such national significance that they have been included in the National Park Service—ancient ruins, battlefields, birthplaces, memorials, recreation areas, and countless other wonders. Point Reyes National Seashore is one of ten national seashores.

The future of the National Park System lies in understanding and protecting its meanings, values, and resources. Each part of the system represents the United States and a part of our heritage. Preservation of individual sites and the entire system will ensure the essence of quality remains in our lives and the lives of all future generations.

What is Point Reyes National Seashore?[1]

Point Reyes National Seashore was established to preserve and protect the natural and cultural features and natural ecosystems along the diminishing undeveloped coastline of the western United States. Located just an hour's drive from a densely populated metropolitan area, the Seashore is a sanctuary for countless plant and animal species. With close to half of Point Reyes National Seashore designated as wilderness, it provides a sanctuary for the human spirit—for discovery, inspiration, solitude, and recreation—and a reminder of the human connection to the land.

Point Reyes National Seashore comprises over 71,000 acres, including 33,373 acres of wilderness area. Estuaries, windswept beaches, coastal scrub, coastal grasslands, salt marshes, and coniferous forests create a haven of 80 miles of unspoiled and undeveloped coastline located just an hour's drive from an urban area populated by over seven million people. Abundant recreational opportunities include 150 miles of hiking trails, backcountry campgrounds, and numerous beaches.

The San Andreas Fault separates the Point Reyes Peninsula from the rest of the North American continent. Granite bedrock found here and not found again until the Sierra Nevada range suggests the peninsula is geologically dynamic. According to geologists, the land that is now called Point Reyes has moved some 300 miles northwest over a period of 100 million years and is still moving.

As wildland habitat is developed elsewhere in California, the relevance of Point Reyes as a protected area with a notably rich biological diversity increases. Over 45% of North American avian species and nearly 18% of California's plant species are found here. Point Reyes also contains some examples of the world's major ecosystem types. For this reason, and because Point Reyes is dedicated to the conservation of nature and scientific research, it was recognized in 1988 by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Man and the Biosphere program and named as part of the Central California Coast Biosphere Reserve.

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[1] This section is edited from a piece written by Bruce Farnsworth (a ranger at Point Reyes in the mid-1990s) for an earlier docent handbook.

The cultural history of Point Reyes spans many lives and ways of living with the land. The Coast Miwok people are the first known residents of this peninsula. Archeologists have identified over 100 village sites in the Seashore and cultural traditions are still celebrated in the park annually both publicly as well as private ceremonies by Coast Miwok people. Overlapping the Coast Miwok were Mexican land grantees, lighthouse keepers, and lifesaving station crews. To this day, agricultural operations that were built near the turn of the twentieth century continue within the Seashore's pastoral zone.

Point Reyes is a unique place that takes a lifetime to explore.

Who are Coast Miwok Indian People?

Thousands of years before Europeans and their descendants came to this area, the Coast Miwok[2] were here. They developed a world view that made it possible for them to live in harmony with everything around them. The Coast Miwok knew and blended with this land for thousands of years. They developed a rich economy based on gathering, fishing, and hunting.

The lives of the Coast Miwok were intricately woven into the changing seasons. In the late spring, fresh new greens of Indian Lettuce, young nettle leaves, and clover were gathered. Fire hardened digging sticks were used by the women to reach deep set roots and bulbs. The ocean provided kelp in large amounts, some to be eaten fresh, the rest dried and stored for the winter. Tule was gathered for skirts and tule baskets in the summer and fall. The summer sun ripened grasses and flower seeds. These were gathered by hitting the ripened seed with a beater basket and then falling directly into a collecting basket. Fall was the season for collecting a variety of nuts: acorns, buckeye, hazel, and bay. Tule for the kotcas (houses), boats, and mats was cut and dried. Gray willow for baskets and traps was abundant. Winter and early spring were times of shortage. Stored acorns, seeds, and kelp became important food sources.

The ocean was an important food source year-round. Crab, clams, mussels, abalone, limpets, and oysters are some of the animals gathered by the women in the tidal zones. Cleaned of the meat, the shells were also fully utilized. Abalone was made into beautiful ornaments. Mussel shells were just the right size for spoons. The Washington clam was one of the most important shells. These were ground into circular, flat, disk beads with a hole drilled in the middle. These beads were a main trade item and were used extensively over Northern California.

Many different techniques were adopted by the men for fishing. Dip nets (bags of netting attached to wooden frames on a handle) were used to scoop up fish. Woven surf nets were used along the open beaches. Conical shaped traps of woven gray willow were set up in creeks and mouths of rivers. Hook and bait successfully caught halibut and rock fish year-round.

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[2] The Miwok of west Marin County have, through the years, been referred to as Marshall Indians, Marin Miwok, Tomales, Tomales Bay, and Hookooeko. The Bodega Miwok (aka, Olamentko) traditionally lived in the area of Bodega Bay. The neighboring Southern Pomo Sebastopol group lived just north and east of the Miwok. The town of Sebastopol is located about one mile midway between the north boundary of Miwok territory and the southern edge of Southern Pomo territory.

Hunting by use of traps and bow and arrow supplied the Coast Miwok with meat, fur, and tools. Traps were used to capture such game as quail, acorn woodpeckers, and rabbits which were highly valued for their fur and meat. Deer were usually hunted by bow and arrow and provided many necessary items. Antler tips were used for shaping arrowheads, Sinew was used to fasten points to arrow shafts, leg bones were made into awls (needles used in basket making) and hair pins. In this way, the Coast Miwok wasted little of the animals they hunted.

The Federated Indians of Graton Rancheria (FIGR) is a federation of Coast Miwok and Southern Pomo groups recognized as a tribe by the US Congress. The following is a timeline provided FIGR of some of the history of the Coast Miwok people beginning with the arrival of the Europeans in the 1500s.

1579

The earliest recorded account of the Coast Miwok people made by the Europeans was found in a diary kept by Chaplain Fletcher aboard Sir Francis Drake's ship, which landed in Marin County that year.

1595 - 1812

The Spanish and Russian voyagers provided additional information about encounters with the Coast Miwok and their occupancy of the area, proving these Indian peoples continued to live in this area over the ensuing centuries. Russian outposts were established at Bodega Bay and Fort Ross in 1809 and 1812, respectively.

1769 - 1834

The Mission Period. The Spanish missions and the Mexican occupancy impacted this area of California. Mission San Francisco de Asisi (Mission Dolores), Mission San Rafael Archangel and Mission San Francisco Solano used Indians, including the Coast Miwok and Southern Pomo people, as their labor source. Records from these Missions are still used to substantiate the Native culture and genealogical research.

1834 - 1850

After the Mission period ended in the 1830s, Indian people were kept in servitude by Mexican land grant owners all across the confiscated tribal territories. During Mexican occupation, a Coast Miwok, Camilo Ynitia, obtained a land grant for Olompali, the site of a large Coast Miwok village existing from prehistoric times which is still an important historic site today. After the Mexican government secularized the Church, the San Rafael Christian Indians were granted 20 leagues (80,000 acres) of mission lands at Nicasio in 1835. Approximately 500 Indians

settled there. By 1850, confiscation of land by non-Indians had quickly reduced these Indian lands to a single league (4,000 acres).

1861

The United States Congress enacts legislation which effectively extinguishes Indian title to almost all land in California, leaving most tribes, including Graton Rancheria's ancestors, entirely landless.

1880

The 36 Indian people remaining at Nicasio were persuaded to leave when funds were cut to all Indians (except those at Marshall) who were not living at the Poor Farm, a place for "indigent" peoples.

Mid 1880s

By this time, as a result of the loss of homelands, European disease, mistreatment, and enslavement, the Indian population in California, which at European contact was estimated at 30,000 – 40,000, had declined dramatically. In the late 1800s, Indian people of this area were employed as farm workers. Although the work was seasonal and itinerant, Coast Miwok and Southern Pomo preferred to work in Marin and Sonoma counties. Bodega Miwok William Smith and his relatives founded the commercial fishing industry in the Bodega area. One family continued as commercial fisherman into the 1970s, while another family maintained an oyster harvesting business.

1905 - 1936

Reports by scholars and by the Bureau of Indian Affairs demonstrate that Coast Miwok and Southern Pomo continued to live in Marin and Sonoma even though deprived of a land base by non-Indians. In 1920, the Bureau of Indian Affairs purchased a 15.45-acre tract of land in Graton, CA for the "village home" of the Marshall, Bodega, Tomales, and Sebastopol Indians. Through the purchase of this land, which was put into federal trust, the federal government consolidated these neighboring, traditionally interactive groups into one recognized entity, Graton Rancheria; thus establishing them as a federally recognized tribe of American Indians.

1924

Congress grants all Native Americans born in the United States full citizenship.

1958

Congress passes the California Rancheria Act of 1958 calling for the termination of 41 California Rancherias, including the Graton Rancheria. Under the Act, Graton Rancheria was removed from federal trust and the land was distributed to three residents (now deceased) as private property. This action terminated federal recognition of a tribe of American Indians. The termination was done in the absence of, and without the consent of, the tribal members.

1960 - Early 1990s

Despite the federal government's termination of federal recognition of the Graton Tribe, Tribal members continued to protect the cultural identity of their people by preserving tribal and other archeologically important sites throughout their aboriginal territory.

1990 - 1992

In a continuing effort to protect their aboriginal territory and their cultural and political identity, tribal members, led by Chairman Greg Sarris, raised money to travel to Washington to fight for restoration of their federal status. The Tribe at this time (numbering 152) was established and operating as the Federated Coast Miwok, later renamed the Federated Indians of Graton Rancheria (FIGR).

1997

A Congressionally mandated study recommended the immediate restoration of three California tribes, including the Federated Indians of Graton Rancheria.

2000

On December 27, 2000, President Clinton signed into law legislation restoring federal recognition to the Federated Indians of Graton Rancheria. The legislation also provided for the restoration of land to this now landless tribe. Since the land of the original Graton Rancheria was transferred to three distributees, now deceased, the only land still belonging to the tribe was a one-acre parcel held in private ownership by one Coast Miwok family.

2002

The Bureau of Indian Affairs ratifies the tribe's base roll and tribal constitution. The tribe then begins to establish a land base for its people.

2003 - 2004

In October 2003, the Tribe enters into an enforceable and binding agreement with the City of Rohnert Park to mitigate the potential impacts of the operation of its proposed Gaming Facility on the City and to establish mechanisms for sustained charitable giving designed to benefit the City and the Tribe. In November 2004, the Tribe enters into a similar enforceable and binding agreement with the County.

2004

The Tribe forms a Language Group of Tribal Citizens who are dedicated to learning the Coast Miwok Language. And as part of their efforts, the Tribe applied for and received their first ANA Language Grant and published a Coast Miwok Dictionary for the Tribe, based on recordings from Sarah Smith-Ballard, one of the last fluent Coast Miwok speakers. The Language Group continues to meet monthly.

2005

The Tribe purchases approximately 254 acres of land for its reservation just outside of Rohnert Park, of which a portion of the land is to be used for a proposed gaming facility. The Tribe also agrees to wait until the environmental review of the proposed gaming facility is complete before exercising its right under the Graton Rancheria Restoration Act to put the land into trust.

2008

In 2008, after six years of applying, the Tribe receives grant funding from the U.S. Department of Health and Human Services through the Administration of Children and Families to launch its own Tribal TANF program for low-income Native American families in Sonoma and Marin counties, including programs and services to strengthen families such as employment assistance, job training, and child care assistance.

2009

The Notice of Availability of a Final Environmental Impact Statement is published in the Federal Register on February 19, 2009

2010

In October 2010, the NIGC issues its Record of Decision for the Tribe's project, concluding that the land is eligible for gaming under IGRA. Also in October 2010, the Bureau of Indian Affairs of the U.S. Department of the Interior accepts the 254 Acre Parcel into trust on behalf of the Tribe.

2012

On July 12, 2012 the Tribe holds a Special Election to amend the Tribe's Constitution to prohibit disenrollment, which was later ratified by the Secretary of the Interior on January 14, 2013.

2013

In November 2013, the Tribe opens the Graton Resort and Casino, and in doing so, is able to provide programs and services to Tribal Citizens to realize their dreams of self-sufficiency.

What is the history of the Winter Wildlife Docent Program?

The Winter Wildlife Docent Program started in 1995 as the Elephant Seal Docent Program created by Heidi Niehaus Strickfaden, a park ranger. Through the interim years, numerous rangers and volunteers maintained the program. The scope of the program has changed over the many years, expanding to include the annual northern and southern migrations of the gray whales in addition to providing information about the elephant seals.

POINT REYES NATIONAL SEASHORE
GENERAL INFORMATION

Where are the visitor centers at Point Reyes?

Bear Valley Visitor Center

This is the park's primary visitor center. It provides an orientation of the park's roads, trails, and human and natural history. The interior exhibit space provides a glimpse of the diverse ecosystems and cultural heritage of the park. Audio-visual programs, shown in the auditorium, are available upon request. Natural history books, cards, and posters are for sale in the bookstore. Beach fire permits may be obtained here. It is open from 9:30 AM to 5 PM seven days a week. It is closed on December 25th and has shortened hours on Thanksgiving and Christmas eves.

Point Reyes Lighthouse Visitor Center

The Lighthouse Visitor Center (LHVC) offers exhibits on the Point Reyes Lighthouse, marine life, & maritime history, as well as a small bookstore. The visitor center is generally open Friday through Sunday from 10-4.

Kenneth C. Patrick Visitor Center

Located at Drakes Beach, the Kenneth C. Patrick Visitor Center (KPVC) contains exhibits that focus on maritime exploration in the 1500s, marine fossils, and marine environments. A minke whale skeleton is suspended from the ceiling. KPVC is currently only open on weekends from 10-4:30.

Adjacent to KVC is the Point Reyes National Seashore Association (PRNSA)[3] bookstore. It contains park- and ocean-themed books, guides, postcards, and maps, along with coffee and packaged snacks. It is open only on the weekends and some holidays between the end of December and March.

[3] PRNSA: This is an association that partners with the National Park Service to create opportunities for all people to experience, enhance, and preserve Point Reyes National Seashore for present and future generations.

Can you camp at Point Reyes?

There are multiple places to camp in Point Reyes National Seashore, however, they are either backcountry hike-in or boat-in camping. All require permits from the park.

The campgrounds are:

Coast Campground: Hike-in, bike-in, or horse-ride-in only
Sky Campground: Hike-in, bike-in, or horse-ride-in only
Wildcat Campground: Hike-in, bike-in, or horse-ride-in only
Glen Campground: Hike-in or bike-in only
Tomales Bay Beach Camping: Boat-in only

Reservations are made through https://www.recreation.gov/camping/campgrounds/233359

There are several places to camp outside the park. Visitors should contact the Bear Valley Visitor Center or check out https://www.nps.gov/pore/planyourvisit/nearbycampgrounds.htm for further information.

What are some of the laws, regulations, and rules relevant to docents, visitors, and animals?

Regulations Specific to Point Reyes National Seashore
Many, but not all the rules that govern the park can be found in the Superintendent's Compendium applicable to Point Reyes. We have pulled out some that it may be helpful to know. Please remember, as a volunteer, you are not responsible for the enforcement of the regulations governing the park.

What are the rules about dogs at Point Reyes?

Pets are allowed in parking lots, along public roads, and along with the trails and beaches described below. All other trails, beaches, and off-trail lands within Point Reyes National Seashore and the Northern District of Golden Gate National Recreation Area are closed to the possession of pets. Always keep your pets on a leash. Pets are permitted on:

- Kehoe Beach - north of the Kehoe Beach trail
- Limantour Beach - southeast of the parking lot to the beach adjacent to Coast Camp
- Point Reyes/Great Beach - from the North Beach parking lot south to the historic Navy installation/lifeboat station located approximately 1 mile (1.6 km) south of the South Beach parking lot.
- Kehoe Beach Trail.
- the paths and roads within the Niman Ranch/Commonweal area south of the Commonweal entrance road and west of Mesa road. This does not include RCA Beach.

All other trails and beaches within Point Reyes National Seashore are closed to pets.

Can drones be flown at Point Reyes?
No. The launching, landing, or operating a remote-controlled aircraft from or on lands and waters administered by the National Park Service within the boundaries of Point Reyes National Seashore is prohibited.

Does Point Reyes National Seashore ever close?
All parking areas and roadways in the park are closed to camping and overnight parking from 12 midnight to 6 am, with the exception that visitors holding hike-in

backcountry camping permits may park at trailheads and visitors staying overnight at the Clem Miller Environmental Education Center, the Point Reyes Hostel, the Point Blue Conservation Science Palomarin Field Station, UC Berkeley field station, Point Reyes Horse Camp, and the Lifeboat Station may park at those locations.

Can visitors smoke on Point Reyes?

The following portions of the park, or all or portions of buildings, structures or facilities are closed to smoking as noted:

All public buildings, including park offices and restrooms, and public areas of concession buildings.

Within 25 feet of building entrances normally used by the public, or within 25 feet of entrances not normally used by the public if smoke gets in the building.

Where posted.

The lighthouse area to include the visitor center, observation deck, pathway, stairs and lighthouse.

Can a visitor collect objects from Point Reyes?

No. It is illegal to collect anything in the park. This includes dried sand dollars, seashells, etc. Point Reyes National Seashore and is part of a Marine Protected Area, so with the exception of trash pick-ups and driftwood (with a valid fire permit) everything should remain on the beach. Researchers who obtain a permit are allowed to collect specimens.

Marine Mammal Protection Act (MMPA)

Marine mammals are mammals that rely on the ocean to survive. They include whales, dolphins, porpoises, seals, sea lions, walruses, polar bears, sea otters, manatees, and dugongs. Some are fully aquatic, such as whales and dolphins. Others, such as seals and sea lions, spend most of their time in water but return to land or ice for activities such as resting or giving birth. Marine mammals are vital to the balance of marine ecosystems and are key indicators of the overall health of the ocean.

All marine mammals are protected under the Marine Mammal Protection Act.

Congress passed the Marine Mammal Protection Act in 1972 in response to increasing concerns among scientists and the public that significant declines in some species of marine mammals were caused by human activities. The MMPA established a national policy to prevent marine mammal species and population

stocks from declining beyond the point where they ceased to be significant functioning elements of the ecosystems of which they are a part. This was the first legislation to mandate an ecosystem-based approach to marine resource management.

Three federal entities share responsibility for implementing the MMPA:

- **NOAA Fisheries** is responsible for the protection of whales, dolphins, porpoises, seals, and sea lions.
- **U.S. Fish and Wildlife Service** is responsible for the protection of walrus, manatees, sea otters, and polar bears.
- **Marine Mammal Commission** provides independent, science-based oversight of domestic and international policies and actions of federal agencies addressing human impacts on marine mammals and their ecosystems.

Endangered Species Act (ESA)

Some animals are also protected under the Endangered Species Act.

The purpose of the Endangered Species Act is to conserve endangered and threatened species and their ecosystems. Congress passed the ESA in 1973, recognizing that the natural heritage of the United States was of "esthetic, ecological, educational, recreational, and scientific value to our nation and its people." It was understood that, without protection, many of our nation's native plants and animals would become extinct.

Under the ESA, the federal government has the responsibility to conserve endangered and threatened species and their critical habitats.[4]

Endangered species are in danger of extinction throughout all or a significant portion of their range. Threatened species are likely to become endangered in the foreseeable future throughout all or a significant portion of their range.

Critical habitats are specific areas:

- Within the geographical area occupied by the species at the time of listing if they contain physical or biological features essential to conservation and those features may require special management considerations or protection

[4] A list of the Threatened & Endangered Species found at Point Reyes is in the Appendix.

- Outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

CITES is an international agreement, signed by 184 parties in 1973, designed to ensure that international trade in animals and plants does not threaten their survival in the wild.

What is unusual about the geology of Point Reyes?

The Point Reyes Peninsula has long baffled geologists. Why should the rocks of this craggy coast match rocks in the Tehachapi Mountains more than 310 miles to the south? The answer lies in plate tectonics and the continual motion of the Earth's crust.

Geologically, Point Reyes National Seashore is a park on the move. The eastern border of the park parallels the San Andreas Fault, which is the current tectonic plate boundary separating the Pacific Plate from the North American Plate. If you draw a line through the middle of Tomales Bay in the north through the Bolinas Lagoon on the south, this is the path of the San Andreas Fault Zone. Faults come in three types: divergent, convergent, and transform. The San Andreas Fault is an example of the third—a transform fault—where plates pass one another like cars on a two-way street.

Many visitors to Point Reyes are surprised to find that they are unable to look at a single crack, chasm, or other defining feature that is the actual fault. The San Andreas Fault Zone contains many large and small faults running parallel and at odd angles to one another, which collectively have resulted in the Olema Valley, and the flooded sections of the valley form Tomales Bay to the north and Bolinas Lagoon to the south. The ridges parallel to the valley are called shutter ridges, a feature typically associated with transform fault zones.

Movement along the San Andreas Fault ranges from about 3.5–5 cm (1.4 to 2 inches) a year (about the speed your fingernails grow). However, instead of creeping along at a slow steady pace, the plates lock together for many years and build up tremendous amounts of stress. When the plates slip and release the stress, waves of energy are sent out and are experienced as an earthquake. The last time the plates here slipped by each other was during the great San Francisco Earthquake of 1906. The greatest displacement in this area was about 7.5 meters (24.5 feet)!

The earth's three rock types—igneous, metamorphic, and sedimentary—are all found at Point Reyes. Our igneous rocks are granitic, which cooled beneath the surface of other rocks before erosion revealed them. These 80- to 100-million-year-old rocks originated in southern California, probably near Tehachapi. They are our basement rocks, and other rock types overlie them. In some places—like Kehoe Beach—the parent rock in which the granitic rocks formed are found.

Altered by heat and pressure, these metamorphic rocks are the oldest rocks in the park.

At the lighthouse, the rocks seen on the way to the observation deck are the Point Reyes Conglomerate mixed with marine sandstone. The cliffs seen at Drakes Beach are primarily sandstone.

Our granitic rocks began moving before the San Andreas Fault formed and docked off of Point Lobos, where several distinct layers of rock formed above it. As a result, Point Reyes has six major sedimentary formations in it. The peninsula then started migrating north along the San Gregorio fault to merge alongside the San Andreas Fault along which it now travels.

Point Reyes National Seashore is a park on the move, currently docked at Olema and Point Reyes Station, but destined to continue to move. Sea level rise also may bring changes to our park. At the end of the last ice age, rising sea level resulted in flooded valleys, creating Drakes and Limantour Esteros.

From https://www.nps.gov/pore/learn/nature/geologicactivity.htm (with modifications)

What and where are the Farallon Islands?

What are those islands you can sometimes see from the lighthouse?

Those islands are the Farallon Islands. They are located about 20 miles southwest of Point Reyes. This small group of granitic islands provide important habitat for seabirds, seals, and sea lions. The Farallon Islands contain the largest seabird colony in the continental United States, providing nest sites for over 300,000 birds from 12 species. Gulls, petrels, and common murres fill the air with their cries as they forage. Tufted puffins have a rookery on the island as well. The surrounding sanctuary waters serve up a seafood feast for humpback and blue whales, white sharks, and common sunfish (*Mola mola*).[5]

What is some of the History of the Farallon islands?

The Indigenous people of the bay area called the Farallons the "Islands of the Dead" and did not land on the islands. The first people known to live on the islands arrived in 1812. They were Russian fur hunters and members of the Aleut community, who likely were working as enslaved people. They lived on the Southeast Farallon Island, which is the only island large enough to support humans. They came to the islands to harvest fur seals. Settlers killed an estimated 200,000 fur seals on the Farallons over the course of a few years. By 1820s or 30s , the fur seal population was decimated. The animals that survived abandoned the island. It would be 140 years before they were seen on the island again; in the 1970s, a few fur seals started to return to the island. The first pup was spotted in 1996, and since then the population has continued to grow. In 2019, Point Blue Conservation Science reported that about 2,000 pups are born on the island each year.[6]

Also, during the Gold Rush, in the mid-1800s, about a half-million eggs were gathered each year. The common murre population plummeted. In 1881, the federal government ruled all commercial eggers off the islands.

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[5] There may also be *Mola tecta*, the hoodwinker sunfish, one of which was identified after washing up on Kehoe Beach recently.

[6] Some of this history was taken from https://www.kqed.org/news/11920240/a-history-of-san-franciscos-wild-raw-farallon-islands

From 1946 to 1970, the sea around the Farallons was used as a dump site for radioactive waste under the authority of the Atomic Energy Commission at a site known as the Farallon Island Nuclear Waste Dump. Most of the dumping took place before 1960, and all dumping of radioactive wastes by the United States was terminated in 1970. By then, 47,500 containers (55-gallon steel drums) had been dumped in the vicinity. The materials dumped were mostly laboratory materials containing traces of contamination. It is believed that by 1980, most of the radiation had decayed.[7]

Are the Farallon Islands currently protected?

Yes. President Theodore Roosevelt created the Farallon Reservation in 1909 to protect seabirds and marine mammals on the chain's northern islands. In 1969, the reservation was expanded to include all of the islands as the Farallon Islands National Wildlife Refuge. The islands are managed by the United States Fish and Wildlife Service, in conjunction with the Marin-based Point Blue Conservation Science (formerly Point Reyes Bird Observatory). The islands are currently the subject of long term ecological research.

In 1981, Congress designated the Gulf of the Farallones National Marine Sanctuary, which spanned 1,279 square miles (3,313 square kilometers; 966 square nautical miles) of water surrounding the islands. This sanctuary protected open ocean, nearshore tidal flats, rocky intertidal areas, estuarine wetlands, subtidal reefs, and coastal beaches within its boundaries. In 2015, the sanctuary was enlarged north and west of the original boundary, partially surrounding Cordell Bank National Marine Sanctuary, to encompass 3,295 square miles (8,534 square kilometers; 2,488 square nautical miles), and the name was changed to Greater Farallons National Marine Sanctuary. The sanctuary is contiguous with both the Cordell Bank sanctuary and another sanctuary to the south, Monterey Bay National Marine Sanctuary. National marine sanctuaries are managed by the National Oceanic and Atmospheric Administration's Office of National Marine Sanctuaries.

Can you visit the Farallon Islands?
The public cannot step foot on the islands, but they can take naturalist-led day cruise to the islands. Researchers do live on the Southeast Farallon island.

[7] Excerpts from https://en.wikipedia.org/wiki/Farallon_Islands

Why is there a lighthouse at Point Reyes?

Point Reyes is the windiest place on the Pacific Coast and the second foggiest place on the North American continent. Weeks of fog, especially during the summer months, frequently reduce visibility to hundreds of feet. The Point Reyes Headlands, which jut 10 miles out to sea, pose a threat to each ship entering or leaving San Francisco Bay.

The historic Point Reyes Lighthouse was built in 1870 to warn mariners of this navigational hazard and served for 105 years. It endured many hardships, including the April 18, 1906, earthquake, during which the Point Reyes Peninsula and the lighthouse moved north 18 feet in less than one minute! The only damage to the lighthouse was that the lens slipped off its tracks.

The Point Reyes Lighthouse was retired from service in 1975 when the U.S. Coast Guard installed an automated light adjacent and below the historic tower. The Coast Guard then transferred ownership of the lighthouse to the National Park Service, which has taken on the job of preserving this fine specimen of our maritime heritage[8].

All lighthouses in the United States are now automated because it is cheaper to let electronics do the work. Many decommissioned lighthouses were transformed into restaurants, inns, or museums. The lighthouse at Point Reyes National Seashore is now a museum piece, where the era of the lightkeepers' lives is interpreted and the craftsmanship and the beauty of the lighthouse are actively preserved.

The Point Reyes Lighthouse itself is 900 feet (275 meters) beyond the Visitor Center at the base of 313 steps—the equivalent of ~20 stories. When wind speeds exceed 40 mph (64 km/h), the steps to the lighthouse are closed for visitors' safety.

Visitors should allow 5 to 10 minutes for the descent and 10 to 20 minutes for the ascent, plus whatever amount of time they wish to spend at the base of the stairs, i.e., checking out the lighthouse, talking with a ranger, or watching for whales or birds.

[8] See brochure for more information.

What else is at the lighthouse, besides the lighthouse?

The Ocean Exploration Center: Attached to the Lighthouse Visitor Center is the Ocean Exploration Center. A collaboration between the National Park Service and NOAA's Cordell Bank and Greater Farallones national marine sanctuaries, the Ocean Exploration Center highlights the spectacularly rich and globally significant ocean environment of North-central California. The coastal and marine ecosystem off North-central California is one of the biologically richest ocean zones on the planet, but the sea life is largely hidden beneath the water's surface. The center increases visitors' opportunities to view and learn about this remarkable area, protected by two national marine sanctuaries and a national seashore. The Ocean Exploration Center features 3-D models of a California sea lion, a Dall's porpoise, a sooty shearwater, and a white shark suspended from the ceiling, murals depicting life below the surface painted on the walls, and informative panels describing ocean wildlife and habitats off our coast. A large picture window offers visitors a stunning view of Point Reyes Beach and the Pacific Ocean, while protecting them from the legendary winds of Point Reyes.

The Observation Deck: The deck is located at the top of the 313 steps leading down to the lighthouse. It is wheelchair accessible. It offers a great location for whale watching and watching birds and is the first location from which visitors can see the lighthouse. From the northwest corner of the deck, one can observe a common murre nesting colony, which can contain approximately 20,000 birds during the spring. Sea lions frequently haul out on a pyramidal-shaped rock northwest of the murre colony.

Looking north from the Observation Deck, if it isn't too foggy, one can see Point Reyes Beach and Tomales Point. And if it is extremely clear, Bodega Head, the Sonoma Coastline, and Mount Saint Helena can be seen. If they are not shrouded in fog, one may see the Farallon Islands twenty miles to the south. And to the southeast, Mount Tamalpais, the hills of the Marin Headlands, western San Francisco, and Montara Mountain rise above eastern waters of the Gulf of the Farallones.

The Observation Deck is open until ~11:45 pm every day, so even if the stairs leading down to the Lighthouse are closed. The entire Lighthouse area west of the gate adjacent to the roundabout at the visitors' parking lot is closed from 12 midnight to 6 am.

What is the Historic Lifeboat Station?

From the Chimney Rock parking lot, a walk to the right and down will bring you to the Historic Lifeboat Station ("HLS"). In addition to the important role that the HLS has played historically, it is also a wonderful place for visitors to watch elephant seals. Here is a little of the history.

In 1890, the United States Life-Saving Service (USLSS) established a station at Point Reyes with a keeper and a crew of seven surfmen on a lonely stretch of the Point Reyes Beach, which was notorious for its pounding surf and bad weather.

In 1915, the United States Life-Saving Service was combined with the U.S. Revenue Cutter Service to form the U.S. Coast Guard. This newly formed agency was now charged with aiding those in distress and interdicting smugglers.

In 1927, operations moved from Point Reyes Beach to the protected waters of Drakes Bay near Chimney Rock. At Chimney Rock, a new station was built as longer, heavier, motorized lifeboats replaced the old, human-powered surfboats. The size and weight of these boats meant that they had to be launched using a pier and a marine railway that descended from the boathouse to the water. Chimney Rock and the calm protected waters was a much safer place from which to launch rescues. With the calmer waters and its proximity to the headlands, the new faster boats had a greater command of the Point Reyes Peninsula.

Eventually modern technologies eclipsed the need for the lifeboat station. The quick response of larger, faster Coast Guard cutters and helicopters has meant the need for fewer lifesaving sites and fewer staff. In December 1968, the Point Reyes Lifeboat Station was decommissioned and transferred to the National Park Service in 1969. The historic building remains, along with the restored lifeboat inside. Depending on docent availability, the boathouse is sometimes open to the public on weekends and holidays from January to mid-March.

The Historic Point Reyes Lifeboat Station's Boathouse in 2016.

Why are there ranches at Point Reyes?

When you cross Inverness Ridge toward the Point Reyes headlands, you leave the pine/fir forest behind and enter the stark beauty of the coastal grasslands, dotted with cattle and occasional clusters of ranch houses. This open landscape is known as the Pastoral Zone. Here, working ranches and historical buildings invite the visitor to learn about the rich agricultural history of the Point Reyes Peninsula.

The first western claims on the productive land of the Point Reyes Peninsula were land grants to Mexican settlers in the early 1800s. These claims, in time, were often disputed. Finally, in 1866, the San Francisco law firm Shafter, Shafter, Park, and Heydenfeldt established ownership of the entire peninsula. They sold the northernmost tip to an old friend from Vermont, Solomon Pierce. This piece of land is still known as Pierce Point Ranch. The Pierce family built a small town to support their isolated ranch at the end of Tomales Point. A schoolhouse, blacksmith's shop, milking barn, and creamery still stand as reminders of the vigorous ranching life which shaped much of the Point Reyes area.

The law firm divided remainder of the peninsula into tenant dairies which they named after letters of the alphabet. "A" Ranch is closest to the Lighthouse, and "Z" Ranch is at the summit of Mt. Wittenberg. "W" Ranch is the current site of park headquarters and Bear Valley Visitor Center.

The tenant ranches were rented by Irish, Swedish, Italian-speaking Swiss, and Portuguese families. Many immigrants found their chance to get started in America through dairying at Point Reyes. In 1919, the Shafter fi rm sold the "alphabet" ranches to the tenants who had worked the land diligently. As a result, many of these families were able to establish themselves more securely in America.

The California Gold Rush brought a rush of new settlers to the San Francisco area in the mid-1800s. Some of those who came west in search ofgold found gold at Point Reyes, all right. They did not find chunks of precious metal, but rather great golden wheels of cheese and casks of butter to be produced for the growing population of nearby San Francisco.

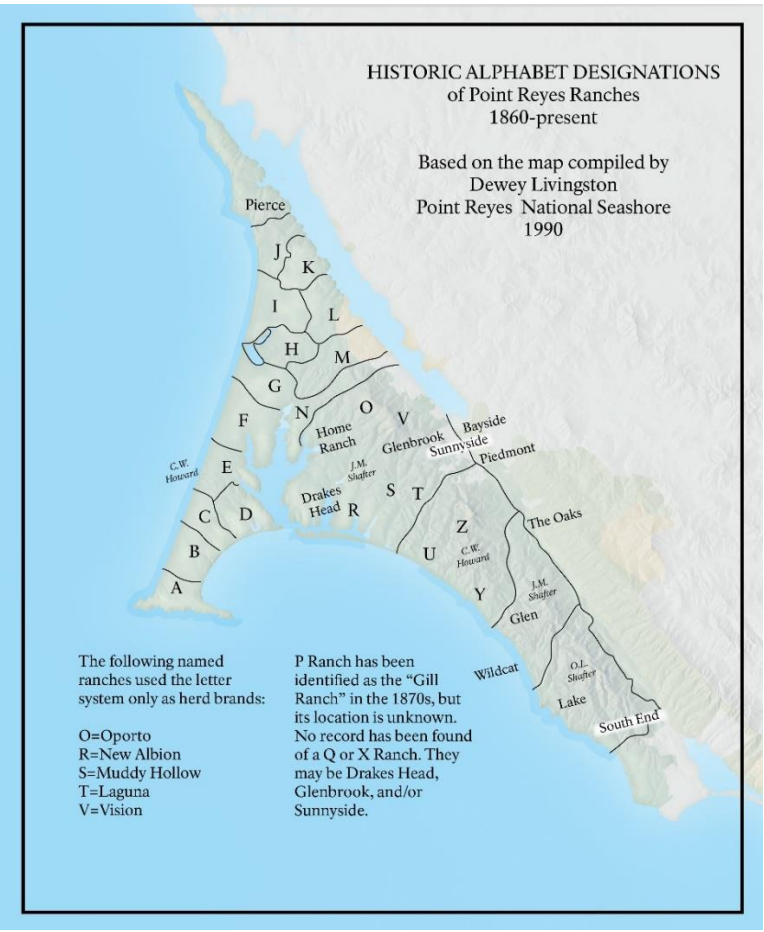
The cool, moist climate of Point Reyes provided ideal conditions for raising dairy cows: plenty of grass, a long growing season, and abundant freshwater supplies. “The grass growing in the fields on Monday is butter on the city tables the following Sunday,” as the 1880 History of Marin County reported.

The quality of Point Reyes butter was so high that the letters PR in a star stamped into cheese cloth wrapped rolls or casks of butter became a nationwide symbol of excellence. This familiar symbol was actually forged by other dairy farmers of the time.

Record yields of this excellent butter and cheese came from the dairy farms at Point Reyes throughout the late 19th century. In 1867, Marin County produced 932,429 pounds of butter, the largest yield of butter in California that year. These huge amounts of butter were produced in an era when the finest restaurants served every good steak with a melting slab of butter on top.

The creation of the National Seashore in 1962 brought another change in ownership to the peninsula. Legislation creating the park provided funds to purchase ranch land, which the park then leased back to the ranchers. Individual ranches no longer produce their own butter and cheese. Instead, they have joined a cooperative creamery. Milk is picked up from twice-daily milkings and sent to a central processing plant. The neatly wrapped packages of butter and milk are a far cry from when Pierce Ranch school teacher Helen Smith walked into the creamery to scoop a small cup of cream from the cooling pans to pour over her breakfast pancakes. And yet, the ranches still serve the same role in our society, providing quality food for the greater San Francisco area.

The five- to twenty-year leases have created a partnership between the National Park Service and the ranchers as stewards of our heritage. Together, ranchers and the National Park Service protect and preserve the land as well as the rich cultural landscape of agricultural history.


HISTORIC ALPHABET DESIGNATIONS
of Point Reyes Ranches
1860-present
Based on the map compiled by
Dewey Livingston
Point Reyes National Seashore
1990
Pierce
J
K
I
L
H
M
G
N
O
V
F
Home Ranch
Glenbrook
Bayside
Sunnyside
Piedmont
C.W. Howard
E
J.M. Shafter
Drakes Head
S
T
R
C
D
Z
The Oaks
B
U
C.W. Howard
A
Y
J.M. Shafter
Glen
Wildcat
O.L. Shafter
Lake
South End
The following named ranches used the letter system only as herd brands:
O=Oporto
R=New Albion
S=Muddy Hollow
T=Laguna
V=Vision
P Ranch has been identified as the "Gill Ranch" in the 1870s, but its location is unknown. No record has been found of a Q or X Ranch. They may be Drakes Head, Glenbrook, and/or Sunnyside.

CETACEA OF POINT REYES

What are Cetacea?

The order Cetacea includes whales, dolphins, and porpoises. These marine mammals have a streamlined hairless body, no hind limbs, a horizontal tail fin (called a fluke), and a blowhole on top of the head for breathing.

Cetacea is divided into two main groups: the toothed whales (Odontocetes) and the baleen or whalebone whales (Mysticetes). The toothed whales that you may see at Point Reyes include dolphins, porpoises, and orcas. The baleen whales you may see at Point Reyes include gray whales, humpback whales, minke whales, fin whales and blue whales. The WWDP focuses on gray whales as they migrate past the lighthouse in the winter.

Which whales are toothed whales?

As their name suggests, **toothed whales (or odontocetes)** have teeth. They also have one opening at their blowhole. There are over 73 species of toothed whales, including sperm and beaked whales, belugas and narwhals, porpoises and dolphins, and even freshwater dolphins that live in rivers. They range in size from the 60-foot-long (21.1 m) sperm whale to the 5-foot-long (1.5 m) vaquita.

Toothed whales tend to be social and live in groups. Like bats, they use echolocation (aka bio sonar) to detect objects in their environment. They produce sounds in the air passages in their heads, which are then projected out in front of them. The sound bounces off solid objects and returns to them (like an echo), so the animals are able to get a "picture" of what is around them.

The toothed whales you may see at Point Reyes include:

Orca

The **orca** (***Orcinus orca***), also called **killer whale**, is a toothed whale belonging to the oceanic dolphin family, of which it is the largest member. It is recognizable by its black-and-white patterned body. Orcas can be found in a variety of marine environments in all of the world's oceans, from Arctic and Antarctic regions to tropical seas.

Orcas are apex predators and have a diverse diet. There are three primary groups: “transients,” “residents,” and “offshore.” The primary food source for the

transients are marine mammals, including seals, other species of dolphins, and whales. The "residents" eat primarily fish (mostly salmon) and the "offshore" orcas eat sharks and fish. They are highly social. They are composed of highly stable matrilineal family groups (pods). Their sophisticated hunting techniques and vocal behaviors, which are often specific to a particular group and passed across generations, have been described as manifestations of animal culture.

Orca sightings are not common at Point Reyes. The lighthouse would be the most likely place to see them.

Dolphins and porpoises

Although porpoises are similar in appearance to dolphins, they are more closely related to narwhals and belugas than to the true dolphins. The main physical differences between porpoises and dolphins are

- their size: dolphins are generally larger than porpoises;
- the shape of their head: dolphins have a bulbous melon and protruding beak, whereas porpoises have blunt heads; and
- their teeth: dolphins have conical-shaped teeth and porpoises have spade-shaped teeth.

Dolphins also tend to be more social than porpoises.

Porpoises are generally small (less than 2.5m long); they live in coastal, offshore and some river habitats. They have blunt heads, without distinctive beaks, and small triangular dorsal fins—except for the finless porpoises who don't have a dorsal fin at all! Their teeth are small and spade-shaped. Like dolphins they are darker on top and lighter underneath for camouflage purposes. Porpoises live in small social groups and are thought to have simpler social lives than dolphins.

Which dolphins and porpoises are seen at Point Reyes?

Harbor Porpoise

The porpoise you are most likely to see at Point Reyes is the harbor porpoise. They are very shy and are often only spotted for moments. They travel either alone or in groups of 2–3. They are about 5 feet long at maturity. They can be seen anywhere along the coast.

Harbor Porpoise

Dolphins

The dolphins that are likely to be seen at Point Reyes include the bottlenose dolphin, long-beaked common dolphin, and occasionally the Pacific white-sided dolphin.

Long-beaked Common Dolphins

Long-beaked common dolphins are small, measuring 6 to 8.5 feet long and weighing between 160 and 500 pounds. Males are around five percent larger than females. They have a recognizable dolphin shape with a rounded forehead (known as a melon) and a moderately long rostrum. They have 47 to 67 pairs of small sharp teeth in each jaw, more than any other dolphin species. Their bodies are sleek and have a relatively tall, triangular dorsal fin in the middle of the back.

Long-beaked common dolphins can be identified by their distinctive color pattern. They have an hourglass pattern created by a dark back, a dull yellow/tan panel on the side in front of the dorsal fin and a lighter gray panel extending along the side from the dorsal fin to their tail stock. A broad dark stripe extends from the lower jaw to the flipper and the dark cape on their back typically includes the eye.

They can be seen in the coastal waters all along Point Reyes.

Long-Beaked Common Dolphins

Common Bottlenose dolphins

There are two identified groups that can be seen from Point Reyes: coastal (usually observed within a kilometer of shore) and off-shore bottlenose dolphins. The former consists of approximately 300–500 individuals, while the latter is estimated to be about 3000. They can be seen anywhere along the coast at Point Reyes.

Bottlenose dolphins have short beaks, a non-marked melon, a single blowhole, and a moderately hooked dorsal fin. They have 18 to 26 conical teeth in each jaw. Their brains are extremely coiled, so much so that if it were to be spread out flat, the surface area would be greater than that of a human cortex.

Males are a bit longer and more massive than females. Males mature at about 9 to 15 years of age and can live as long as 45 years. Females mature at about 5 to 12 years of age and may live longer than 50 years. Although they have the potential to live longer, the average life span for both males and females is around 20 years.

These cetaceans can reach speeds of 22 miles per hour (35 km/h), and their cruising speed of 5 miles per hour (8 km/h) keeps pace with the fastest human swimmers. They surface two or three times a minute to breathe, have been observed jumping up to 16 feet out of the water, can produce up to 1,000 clicking noises per second, and are known to help each other if they are injured.

Common Bottlenose Dolphins

Which whales are baleen whales?

The **baleen whales (or mysticetes)** are the other group of cetaceans. This group includes 16 species ranging in length from the pygmy right whale at 21 feet (6.4 m) to the largest whale, the blue whale, at 100 feet (30.5 m).

Baleen whales have two blowholes. Instead of teeth, they have hundreds of rows of baleen plates, which are made of keratin, a substance in our hair and fingernails, and which have the texture of a broom. The baleen strains out small fish and plankton from the water for food.

Most baleen whales feed by taking a large mouthful of food and water. They then push the water out of gaps between their baleen plates with their tongues and, for rorquals, by contracting their pleated throats. The food gets trapped on the inside fringed edge of the baleen. Most baleen whales eat krill (shrimp-like animals) or small fish. Scientists estimate that baleen whales eat about 4% of their body weight a day. For example, a blue whale is believed to eat up to 8,000 lbs. (3,600 Kg.) a day.

Even though baleen whales eat very small animals that are low on the food web, these whales are all very large and eat great quantities at once.

Which whales do we see at Point Reyes?

Whales may be seen off the shores of Point Reyes year-round. Many of the whales are here for only part of the year, so different seasons provide different whale watching opportunities. While the most commonly seen whale at the seashore is the gray whale during their winter and spring migration and the humpback whale in the summer and fall, there is the chance of seeing other species of whales and dolphins throughout the year.

Summer or Fall: Humpback whales, Blue Whales, Fin Whales
Winter/Spring: Gray Whales
Year-Round: Minke Whales, Orcas

Gray Whales See next section

Humpback Whales

Humpback whales live in all oceans around the world. A species of baleen whale, the humpback we see off Point Reyes migrate thousands of miles each year, traveling from their summer feeding grounds off the California and Oregon coasts to warmer winter breeding waters off Central America. Some whales make a round trip journey of up to 10,000 miles.

Before a final moratorium on commercial whaling in 1985, all populations of humpback whales were greatly reduced, most by more than 95 percent. The species is increasing in abundance throughout much of its range, but faces threats from entanglement in fishing gear, vessel strikes, vessel-based harassment, and underwater noise.

Adult humpback whales are between 50 and 60 feet long and 60,000 and 80,000 pounds. They can live up to 90 years. Females are larger than males of this species. The pectoral flippers can be up to 15 feet (4.6 m) long—one-third of their body size, hence the scientific name for the genus: *Megaptera*. The scientific name *Megaptera* means “big-winged” in Latin, referring to their large pectoral fins.

Unique among large whales, humpbacks have bumps called tubercles on the head and front edge of the flippers, while the tail fluke has a jagged trailing edge. The tubercles develop early in the womb and may have a sensory function as they are rich in nerves.

Humpback whales reach sexual maturity between the ages of 4 and 10 years. Females usually produce a single calf every 2 to 3 years. Calves are born after an 11-month gestation period. At birth, a calf can measure up to 15 feet (4.6 m) long and weigh about 1,500 pounds (680 kg). Calves stay near their mothers for up to one year before weaning. Mothers are protective of their calves, swimming closely and often touching them with their flippers.

The species is a slower swimmer than other rorquals, cruising at 4.9–9.4 mph (7.9–15.1 km/h). When threatened, a humpback may speed up to 17 mph (27 km/h). They appear to dive to a maximum depth of 490 feet (150 m) and rarely dive much more than 390 feet (120 m). Dives typically do not exceed five minutes during the summer but are normally 15–20 minutes during the winter. During the winter, it is believed that whales rest during these longer dives, whereas resting usually takes place at the surface when they are at their feeding waters. As it dives, a humpback typically raises its tail fluke, exposing the underside.

Humpback whale social groups are led by a matriarch, an older female who plays a significant role in guiding the group's movements and behaviors.

Humpbacks have the most complex and varied songs of any whale species. Their haunting calls carry for miles beneath the sea. Males are famous for their complex and haunting songs that are believed to be for mating purposes and communication. Some can last up to 20 minutes. Entire groups of whales in a particular region will sing similar songs during a given year, but the songs may change and evolve over the years.
Behaviors of humpbacks include breaching, spy hopping, logging, tail or fin slapping.

The behavior of humpback whales jumping out of the water, known as "breaching," is one of the most spectacular displays observed in the animal kingdom. While the exact reasons for this behavior are not entirely understood, there are several hypotheses proposed to explain why humpback whales breach:

- Communication: Breaching may be a form of communication between humpback whales. The loud splash and sound generated when the massive body of a whale hits the water's surface could serve as a long-distance signal to other whales in the area.
- Play and Social Interaction: Breaching is often associated with playful and social behavior. Young humpback whales, in particular, are known to breach frequently, possibly as a way to practice or play with other individuals.
- Removing Parasites: Humpback whales can have barnacles and other parasites attached to their skin. Breaching could help them dislodge or remove some of these unwanted hitchhikers.
- Scratching Itch or Relieving Discomfort: The impact of breaching might relieve skin irritations or itches caused by parasites or other factors.
- Mating and Courtship: In some instances, breaching is associated with mating behaviors or courtship displays. It could be a way for males to attract females or demonstrate their fitness.
- Navigation: Breaching might help humpback whales navigate unfamiliar or challenging environments, such as shallow waters or areas with strong currents.

The usual humpback foraging mode is "lunge feeding", in which the whale accelerates forward in a burst of energetic fluke strokes to reach a high speed prior to engulfment of a volume of prey-laden water comparable to their own body volume. Recent research from Stanford has shown that an unfortunate result of this

method of feeding in our polluted oceans is that they take in up to 10 million pieces of plastic per day.

Humpbacks can be seen from almost every coastal location on Point Reyes. The best lookouts are the Lighthouse, the end of Chimney Rock Trail, and Limantour Beach.

Humpback whales

Minke Whales

Minke whales are difficult to spot as they often travel alone, surface very briefly, and create a small blow spout that is nearly invisible on the ocean's surface. At an average of ~28 feet long, they are the smallest baleen whale in North American waters. They weigh an average of 15,400 pounds for males and 18,180 for females. They can live up to 50 years.

They are occasionally seen near the lighthouse.

Minke Whales

Fin Whales

The fin whale is the second-largest whale species on earth, second only to the blue whale. It is found throughout the world's oceans. Fin whales have sleek, streamlined bodies with V-shaped heads. They have a tall, hooked dorsal fin located about two-thirds of the way back on the body. It rises at a shallow angle from the back and is easily recognized. Fin whales have distinctive coloration—black or dark brownish gray on the back and sides and white on the underside. The head coloring is asymmetrical—dark on the left side of the lower jaw, white on the right-side lower jaw, and the reverse on the tongue.

An adult fin whale is 75–85 feet in length and weighs 80,000-175,000 pounds. They can live up to 90 years. Fin whales are listed as endangered under the Endangered Species Act.

They are occasionally seen off the lighthouse.

Fin Whales

Blue Whales

Blue whales are the largest animals ever to live on our planet. They feed almost exclusively on krill, straining huge volumes of ocean water through their baleen plates. Some of the biggest individuals may eat up to 6 tons of krill a day.

Blue whales have a long body and generally slender shape. Their mottled blue-gray color appears light blue under water—hence their name. An adult blue whale averages 80-90 feet long, and between 220,000-250,000 pounds. They can live up to 90 years.

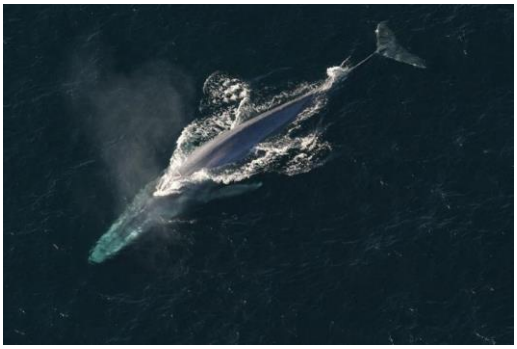
Blue whales sometimes swim in small groups but are more often found alone or in pairs. They generally spend summers feeding in polar waters and undertake lengthy migrations towards the equatorial waters as winter arrives. Baby blue whales gain 10 pounds (4.5 kg) an hour!

Blue whales typically swim at about 5 miles an hour while they are feeding and traveling but can accelerate to more than 20 miles an hour for short bursts. They are among the loudest animals on the planet, emitting a series of pulses, groans, and moans, and it is thought that in the right oceanographic conditions, sounds emitted by blue whales can be heard by other whales up to 1,000 miles away.

Along the West Coast of the United States, eastern North Pacific blue whales are believed to spend winters off of Mexico and Central America.

Blue whales were significantly depleted by commercial whaling activities worldwide. Today, blue whales are listed as endangered under the Endangered Species Act.

On occasion, they can be seen off the lighthouse.



Blue Whales

What about gray whales?

Scientific Name: *Eschrichtius robustus*

The gray whale is one of the most commonly seen whales along the west coast of North America. It is one of the most exciting mammals to see in Point Reyes and is seen every winter and spring. As these magnificent creatures pass the shores of Point Reyes, they are making one of the most exhausting migrations of any animal—traveling nearly 13,000 miles (20,922 km) round trip!

Gray whales were once referred to as the "devil fish" because of their fighting behavior when hunted.

When Can I See Gray Whales at Point Reyes?

Annual Migration Route: This migration follows along the coast of North America between their summer feeding waters in the **Arctic** to the wintering waters in **the lagoons of Baja California, Mexico.**

In **December and January,** thousands of whales **migrate south** past the Point Reyes peninsula. In February, sightings at this location slow down, as most whales are already in the warm lagoons of Baja California, Mexico.

In **March and April**, sightings start to increase again as the whales **make their way north** to their Alaskan feeding waters. During the northbound migration, most gray whales pass within a mile of the shore.

How fast do Gray Whales Swim?

Average migration swimming speed: 3–5 mph (5–8 km/h)
When in danger can reach speeds of 10-11 mph (16-17.5 km/h)
(Source: Alaska Department of Fish and Game)

What Are Physical Characteristics of Adult Gray Whales?

These large whales can grow to about 49 feet long and weigh approximately 90,000 pounds. Females are slightly larger than males. Gray whales have mottled gray bodies with small eyes located just above the corners of the mouth. Their

pectoral flippers are broad, paddle-shaped, and pointed at the tips. Lacking a dorsal fin, they instead have a dorsal hump about two-thirds of the way back on the body, and a series of 6 to 12 small bumps, called “knuckles,” between the dorsal hump and the tail flukes. The tail flukes are nearly 10 feet wide with S-shaped trailing edges and a deep median notch.

- Adult Male: 38–43 feet (11.5 -13 meters)
- Adult Female: 41–50 feet (12.5- 15.2 meters)
- Weight: 35–40 tons(70,000-80,000 pounds)
- Tail Fluke: about 10 feet across (3 meters)
- Sexual Maturity: 5–11 years
- Life Span: Average of 50 years; can live up to 70 years or more.

Here are some interesting comparisons that may help visitors to understand these facts.

The weight of an adult gray whale is the equivalent of five African elephants.

A gray whale’s tongue alone weighs 2,500 pounds (1,133 kilograms), the weight of a small car.

The length of a gray whale is about 1-½ school buses.

A gray whale breathes in 1000 times more air in one breath than a human does.

What are the Characteristics of Calves?

Calves are typically born dark gray and then lighten as they age to brownish-gray or light gray. All gray whales are mottled with lighter patches. They have barnacles and whale lice (e.g., cyamids) on their bodies, with higher concentrations found on the head and tail.

- Gestation: 12–13 months
- Size at Birth: 12–15 feet (3.5–4.5 meters)
- Weight: up to 1,500 pounds (680 kilograms)
- Mother’s Milk: 53% fat; Calves drink up to 50 gallons per day, gaining 50–70 pounds a day.
- Weaned: 6-8 months, 27 feet long

What and Where is the Birthing Process?

Migration ensures the survival of gray whales. They travel to the warm water lagoons in Mexico to give birth and to mate (although calving and mating have been observed in waters off of California). Females may mate with several males and will become pregnant once every two or more years. During a gray whale's year-long gestation period, the female will have migrated from Mexico to Alaska and back. Baby whales are called calves, and the warm lagoons of Baja are a safe place to be born, sometimes with the help of a whale “auntie.” Calves are born with rubbery flippers, making swimming immediately after birth difficult. Since the calf cannot swim, the mother or auntie will push the calf to the surface for their first breath. The calf is 12 to 15 feet (3.5 to 4.5 m) long at birth, weighing up to 1,500 pounds (680kg), about a third of the length of an adult.

Calves nurse for seven to eight months. Gray whale mothers produce milk that is 53% fat, compared to human milk which is 3–5% fat. Calves will drink up to 50 gallons of milk a day, gaining 60–70 pounds of blubber daily. Having a thick layer of blubber will be necessary for their northern migration into arctic waters.

Why Are There Barnacles and Lice on Gray Whales?

As larvae, the whale barnacles swim freely in the ocean. After several molts, they grab hold of a passing gray whale and settle down to build a permanent home made of calcium carbonate. Barnacles find the slow-swimming gray whale a good ride through nutrient-rich ocean waters.

Barnacles don't serve any obvious advantage to the whales, but they give helpful lice a place to hang onto the whale without getting washed away by water. These whale lice feed on the whale's skin and tissue, and while this does not harm the whale, it appears that it does become irritating after a while. One hypothesis for why gray whales breach—which is to jump fully out of the water—is in an attempt to knock off the irritating whale lice.

How Do Gray Whales Feed?

Gray whales are bottom feeders—they swim to the sea floor, turn on their side and take in a mouthful of crustacean-filled sand. After taking a mouthful of sand, the whale will push it out of their mouth through the baleen. The hairs on the baleen

will prevent the food from escaping while letting the sand and water pass through. Each gray whale tends to have a favorite side. A close look at their baleen plates shows wear on their preferred side from scraping on bottom sediments.

What Do Gray Whales Eat?

Their diet consists of a wide range of benthic and epibenthic invertebrates, such as amphipods (small shrimp-like crustaceans), in the rich bottom sediment of the Arctic Ocean (Bering Chukchi and Beaufort Seas). Additional prey items can include mysid shrimp, krill, and fish. Gray whales primarily feed at summer foraging areas in Arctic waters, but some feeding can take place during migration (primarily during the northward migration). Otherwise, during their migration, gray whales live off of the blubber stored during summer feeding.

How Deep Do Gray Whales Dive?

About **500 feet**. Gray whales are usually found in shallow waters, along the continental shelf, so they do not have to dive much deeper than about 500 feet (150 meters).

How Long Can Gray Whales Stay Underwater?

On deep dives, a whale's heart rate slows down by half (to only 4 or 5 beats per minute). The blood flow is restricted. This adaptation means that the whale uses its oxygen supply very slowly. A gray whale can stay underwater for up to 25 minutes, but normally it stays under for three to five minutes.

How Do Gray Whales Sleep?

Gray whales, like other whales, are voluntary breathers—they have to think about every breath they take. The sleep patterns and mechanisms are not fully understood. To sleep, it is believed that they shut down one half of their brain and sleep that way for periods of 15–60 minutes at a time. It appears that this can be either on the surface or much further down, such as 60–70 feet deep.

Do Gray Whales Travel Together?

Gray whales are frequently observed traveling alone or in small, mostly unstable groups, although large aggregations may be seen in feeding and breeding grounds.

Like other baleen whales, long-term bonds between individuals are thought to be rare.

How Many Blowholes Does a Gray Whale Have?

The gray whale is one of the oldest mammal species on the planet. It has been evolving and adapting for 30 million years. This marine mammal is a baleen whale, and all baleen whales have two blowholes. The blowholes are connected via a completely separate respiratory tract directly to the lungs (as opposed to humans, where part of the respiratory tract is shared with the digestive tract, allowing us to breathe through either our nostrils or our mouth), so the whale can take a mouthful of water and breathe at the same time.

How Do Gray Whales Communicate?

Gray whales make loud, low-pitched clicks, moans, and whistles between 100–2,000 Hz later in the foraging season, on the southbound migration, and in the breeding grounds. It is believed that breaching, fluke slaps, and spy hopping, where the whale's head is above the water, are also used to communicate.

Do Gray Whales Have Predators?

The only major predators of gray whales are transient orcas and humans. Many gray whales have healed scars and orca teeth marks on their flukes and flippers.

What is the Current Gray Whale Population?

The National Oceanic and Atmospheric Administration (NOAA) estimates the Gray Whale population for **2023** is approximately **14,500**. This is a decline from a peak of an estimated 27,000 whales in 2016. Reproductive success and low infant mortality is necessary for the gray whale population. Gray whales are currently experiencing an unusual mortality event (UME), which began in 2019. Scientists think that ecological changes affecting their prey in the Arctic (i.e., melting of sea ice) could be leading to malnutrition in some whales. Other causes of mortality during this UME include vessel strikes, entanglements, and orca predation.

NOAA states that there are signs of a turnaround in the decline as there have been more mothers with calves in the birthing lagoons in 2023 than in any of the last

five years. There have also been fewer gray whales stranding this past year on their northern migration.

Where are the Best Locations for Whale Watching?

When you are looking for whales from land, you are likely to see the blow or "spouting" first. The shape of the whale blow can help identify the species that you are viewing. Gray whales will have a short, heart-shaped blow, while humpback whales will have a taller, straighter blow. On a windy day, it may be difficult to spot the blow as the wind will disperse it quickly. On calm days you may also see the back of the whale as it emerges from the water.

Since the tip of the Point Reyes peninsula sticks out 10 miles (16 km) into the Pacific Ocean, it gets visitors that much closer to areas where whales are swimming and migrating past—the next best thing to being on a boat! As a result, the best whale watching tends to be from higher coastal areas far out on the peninsula like the Point Reyes Lighthouse, or the end of the Chimney Rock Trail and the Tomales Point Trail.

Being up high looking down on the water gives visitors the best vantage point for whale watching. Whales will often be visible with the naked eye, but binoculars or spotting scopes enhance the whale watching experience once one has located a whale with the naked eye. There will be binoculars for the use of docents and visitors at the observation deck.

What are Some Physical Behaviors to Look For?

When whale-watching you will see the blow as the whale surfaces to breathe, then the whale's back becomes visible as it dives beneath the surface. Look closely at its back and you can identify the species by the shape of the dorsal fin or hump.

Blowing (aka "Spouting")

Blowing is the most common behavior viewed from land. This is where the whale is surfacing for a breath. Contrary to popular belief, they are not releasing water. The blow is their very warm breath meeting the cooler ocean air, similar to when humans breathe on a cold winter day. The warm breath condenses into water droplets and will be visible for just a few seconds. On windy days, whitecaps on the ocean's surface and blows can be

difficult to tell apart. Therefore, whale watching conditions are best when there is little to no wind.

Breaching

Breaching is when a whale jumps, having most or all of its body above the water's surface at once! As their large bodies reenter the water, it creates a massive splash that can be visible for miles. All whales, including gray whales, breach, but it is extremely common among humpback whales.

Spy Hopping

Spy hopping is a behavior seen in whales and dolphins. This is when they poke their head above the water line to look around. This can be seen on migrations seemingly looking for landmarks to orient themselves or look for potential hazards around the surface. Depending on the species, this behavior can last for a few seconds up to several minutes. Spy hopping is similar to how humans tread water; the whale will maintain its height by flicking its tail, and balance using its fins. This behavior is more commonly seen in humpback whales and orcas than with gray whales.

What Are Current Threats to the Gray Whale Population?

Gray whales have made a remarkable recovery from the brink of extinction. Yet, there are still many issues that may affect the future of the whales. Threats include:

Entanglement in Fishing Gear

Gray whales are at high risk of becoming entangled in fishing gear. Once entangled, whales may drag and swim with attached gear for long distances or be anchored in place and unable to swim. Events such as these result in fatigue, compromised feeding ability, or severe injury, which may ultimately lead to death.

Vessel Strikes

Collisions with all sizes and types of vessels are one of the primary threats to marine mammals, particularly large whales. Gray whales are vulnerable to vessel strikes because they feed and migrate along the U.S. West Coast, which has some of the world’s heaviest vessel traffic associated with some

of the largest ports in the country. Gray whales may also be vulnerable to vessel strikes in the inland waters of Washington and in feeding areas along the Pacific coast.

Disturbance from Whale Watching Activities

Whale watching has become an important recreational industry in several communities along the North American coast from British Columbia, Canada, to the gray whale wintering lagoons of Baja California, Mexico. Boat-based whale watching along their migration route may lead to disturbance and affect gray whale behavior.

Ocean Noise

Underwater noise can reduce the ability of whales to communicate with each other, increase their stress levels, interrupt their normal behavior, and displace them from areas important to their survival.

Habitat Degradation

Habitat modification and degradation, such as that resulting from offshore oil and gas development, may affect gray whale foraging habitat off Sakhalin Island, Russia, and in the waters off of Alaska. Platforms, pipelines, and other types of infrastructure construction activities have the potential of impacting gray whale prey communities.

Climate Change

The impacts of climate change on baleen whales are unknown, but it is considered one of the largest threats facing high latitude regions where many gray whales forage. Most notably, the timing and distribution of sea ice coverage is changing dramatically with altered oceanographic conditions. Any resulting changes in prey distribution could lead to changes in foraging behavior, nutritional stress, and diminished reproduction for gray whales. Additionally, changing water temperature and currents could impact the timing of environmental cues important for navigation and migration.

Why Are Gray Whales Important?

Gray whales play an important role in the Arctic ecosystem due to their unique style of bottom-feeding. They create gigantic mud plumes that re-suspend large volumes of nutrients, which in turn enrich life on the seafloor and bring a bounty of bottom-dwelling crustaceans to the surface for seabirds to feast on. And when

whales die and sink, their carcasses—known as whale falls—provide a bounty of nutrients for deepwater creatures.

What Was the Reason Gray Whales Almost Became Extinct?

Gray whales were hunted nearly to extinction by commercial whaling. The eastern North Pacific population has since recovered, protected by international conservation measures and the Marine Mammal Protection Act in the United States. However, the Western Stock, which migrates along the coasts of Russia, Korea, Japan and China, is listed as Depleted under the Marine Mammal Protection Act. There was an Atlantic population of gray whales that is likely extinct.

What are Current Concerns about the Gray Whale Population?

Impacts of climate change, such as reduced sea ice cover, may already be affecting gray whales. Research shows that gray whales now feed farther north and stay there longer than they have before.

A thin-ice diet

The Arctic has lost 70 percent of its sea ice in recent decades. The ice that remains is thinner than ever before, and that affects the gray whales' food supply.

During the winter, a thick blanket of sea ice covers the surface of the Arctic, leaving the waters below in darkness. When the ice retreats, sunlight hits the sea, and tiny plants called phytoplankton burst into life. These algal blooms provide food for zooplankton, including the minuscule crustaceans and worms gray whales eat.

But climate change is causing phytoplankton to bloom earlier in the season. As Arctic ice continues to thin, the growing season might start so much earlier that the blooms grow and collapse entirely under the ice.

Plastics, Plastics, Plastics

Another threat is the growing rate of plastic pollution. A November 2022 study showed that per day, a krill-obligate blue whale may ingest 10 million pieces of microplastic, while a fish-feeding humpback whale likely ingests 200,000 pieces of microplastic. Moreover, gray whales and some

populations of humpback whales suction feed in the sediment to extract invertebrates. As the seafloor is a primary sink for synthetic marine debris, there may be considerable risk to gray and humpback whales feeding in the substrate.

What Conservation Efforts are Being Undertaken?

In the early 1900s, citizens became concerned about waning biodiversity, especially among ocean species. Humans hunted some whale species to extinction in the quest for their oil-rich blubber used for machine lubrication and oil lamps. Fortunately, over time, conservation groups pressured their governments to institute protective measures. In 1949, the International Whaling Commission banned commercial hunting of gray whales. In 1971, the Mexican government protected breeding lagoons in Baja. This legislation created the first whale sanctuary in the world.

The United States expanded protection for marine life by establishing the Marine Mammal Protection act in 1972. Gray whales were also protected by the Endangered Species Act of 1973. The protected gray whale population in the eastern Pacific began to grow. The U.S. Fish and Wildlife Service delisted gray whales from the endangered species list in 1994.

Grey Whale

Grey Whale

Gray Whale

PINNIPEDS OF POINT REYES

What is a pinniped?

There are three families of Pinnipeds. Phocidae (true seals), Otariidae (eared seals) and Odobenidae (Walrus). Members of the first two families are found at Point Reyes

Phocidae: Sometimes referred to as **earless seals** or true seals, marine mammals in the phocid family can be easily identified by looking at their ears and flippers. They have ear holes, but no external ear flaps. They include harbor seals, elephant seals, monk seals, and others.

They also have small front flippers and move on land by flopping along on their bellies, a movement called "galumphing." At sea, true seals use their rear flippers to propel themselves through the water and their fore flippers to steer.

Otariidae: Sea lions and fur seals are part of the otariid family and are sometimes referred to as **eared seals**. You can recognize these animals by their flippers and ears. Unlike true seals, otariids have external ear flaps. Their front flippers are large, and on land they can bring all four flippers underneath their bodies and walk on them. In the water, they primarily use their front flippers for propulsion and steering, like oars in a rowboat, but they also can use their hind flippers for steering.

Fur seals, despite having the word “seal” in their name, are more closely related to sea lions. They have longer flippers than sea lions, along with a luxuriant coat of fur that was so prized by hunters that it brought them to the brink of extinction in the 1800s.

Odobenidae: Walruses are in a family of their own called the odobenids. Both males and females have tusks and vacuum-like mouths for sucking up shellfish from the ocean floor. They have air sacs in their neck that can inflate to allow them to float as if they are wearing life preservers.

Which pinnipeds are at Point Reyes?

Northern Elephant Seals (Phocidae) – See next section

Pacific Harbor Seals (Phocidae): Adult Pacific harbor seals measure 5–6 feet in length and weigh up to 300 pounds. The males are slightly bigger than the females. They have spots on their skin and they propel themselves by their rear flippers. Colonies, which including the sites at which they birth their pups between about March and June, are found in Drakes Estero, Tomales Bay, Bolinas Lagoon, and along Tomales Point.

California Sea Lions (Otariidae) (CSL): This is the sea lion most likely to be seen at Point Reyes. Males are 6–8 feet long and can weigh 600–800 pounds. Females weigh 200–250 pounds and can be up to 6 feet long. They propel themselves with their long front flippers. Pups are weaned after a year. The primary breeding ground for the CSLs seen here are the Channel Islands. The sea lions that are seen at Pier 39 are CSLs.

Steller Sea Lion (Otariidae) – Occasionally seen near the lighthouse and the Sea Lion Overlook. The Steller is listed as a threatened species. It is the largest member of the Otariidae family. Adult males can be 9–11 feet long and 1000–2500 pounds. Females can be 7.5–9.5 feet long and 500– 800 pounds. Steller sea lions can be distinguished from California sea lions by their larger size, larger front flippers, lighter color, and male Steller sea lions have a lionlike mane of fur around their upper body.

What about northern elephant seals?

Northern Elephant Seals are a focus of the WWDP. They are fascinating seals that you will learn a lot about over the course of this training and others. They are the subject of much scientific research, which has resulted in a vast amount of knowledge about these seals, although much remains shrouded in mystery. Part of our mission as docents is to teach people about these amazing creatures in the hope that they too will appreciate them and help protect them and their habitat.

What is an elephant seal?

The northern elephant seal (*Mirounga angustirostris*) is the second largest seal in the world. It is surpassed in size only by its relative the southern elephant seal. It is a pinniped. It is in the family Phocidae, the "true seals," along with harbor seals.

Is the elephant seal population endangered?

Northern Elephant Seals were at one time thought to have been hunted to extinction. They were presumed extinct by the 1880s, after being exploited by hunters and whalers seeking to use the animals' thick layer of blubber as an oil source. A few animals were then discovered in 1892, most of whom were killed for scientific study by the Smithsonian. Later, a population of probably fewer than 100 individuals on Guadalupe Island, off of Baja Mexico, was found to have survived. The Mexican Government gave protective status to the species in 1922, and the U.S. Government followed suit a few years later. Studies have shown that all individuals of the current population are relatives of these 10 to 40 survivors.

With further protections, particularly the Marine Mammal Protection Act of 1972, their numbers have largely recovered.

The global population was estimated in 2010 to be between 210,000 and 239,000. About 179,000 of these were in California. These are similar to their numbers before they were hunted to near extinction. The numbers of elephant seals at Point Reyes are generally increasing each year.

Northern elephant seals are not listed as "endangered" or "threatened" under the Endangered Species Act, nor designated as "depleted" under the Marine Mammal Protection Act. According to National Oceanic and Atmospheric Administration (NOAA) reporting, from 1988 to 2013, the population grew at an annual rate of

3.1%. The population continues to grow, with ~80% of births occurring at southern California rookeries.
At Point Reyes, the first colony since the mid-1800s formed in 1981. In the winter of 2023, there were approximately 4,400 elephant seals spread through the three main colonies— Drakes Beach (which also includes the Chimney Rock area), Point Reyes Headlands, and South Beach.

How big are elephant seals?

Adult male: 13– 16 feet; 3300–5000 pounds.
Adult female: 9–12 feet; 900– 2000 pounds.
Pups: 3–4 feet; 60–80 pounds.
Weaners: ~4.5 feet; 264–330 pounds.
Elephant seals have the greatest *sexual dimorphism*—i.e., the difference in physical appearance between males and females—of any mammal. Adult males weigh an average of 3.5 times the females. Adult males are on average 1.4 times longer than mature females.

How do elephant seals move?

The front flippers have fur and five nails, while rear flippers have hair but no nails. As they are Phocidae, the rear flippers cannot articulate forward of their point of attachment as they do on sea lions, therefore they move differently on land as well as in the sea. The shorter front flippers of elephant seals are held close to their body while swimming, and they use powerful hip muscles and their rear flippers to propel them through water. When moving on land, elephant seals use their front flippers and heave their body forward, enhanced by an undulating motion similar to that of an inch worm. Non-scientifically, it is called "galumphing." When necessary, they can sprint very quickly on land for short distances, faster than most humans, up to 6 mph. They are capable of swimming up to 10 mph, but usually swim more slowly to conserve energy.

How long do elephant seals live?

Females can live to 20 years. The maximum age documented at Pt. Reyes was 22 years.
Males can live to 14 years. The maximum age documented at Año Nuevo was 17 years.

What is elephant seal fur like?

Adults are brown to gray above, lighter below. Pups are born with a black pelage or "lanugo" (they are often called "blackcoats"). This coat is molted after weaning when a sleek, silver/gray coat appears. Within a year, the coat will turn to a dull brown color, due to wear. (The docent fanny pack will contain a sample of elephant seal fur.)

Why do elephant seals flip sand on themselves?

Elephant seals are often seen flipping sand on themselves, and there are many reasons for this. Sometimes they do this to reflect the sun away and stay cool, while other times it may be to help with an irritation of the skin, such as from bugs or from when they are molting. Behaviorally, they also flip sand when they are agitated.**?**

Male elephant seals have a distinctive nose, also called a proboscis. In the first couple of years of an elephant seals life, the male and female noses are similar. An enlarged proboscis develops on the males beginning at sexual maturity (about 3–5 years) and is fully developed by about 7–9 years. The proboscis is inflatable; when relaxed, it hangs down in front of the mouth and when inflated, it resembles the trunk of an elephant and is the origin of the species' common name. It is used to make a drumming sound. They also use it to make load roaring noises and can do so underwater as well.

Where are elephant seal ears?

As a phocid, the northern elephant seal lacks external ear flaps, and the ear holes are almost invisible. It is believed that their hearing is quite good under water, but they can also hear on land. It is believed that northern elephant seals memorize the rhythm and pitch of individual vocal calls in order to recognize each other.

What do elephant seals use their whiskers for?

Scientists refer to whiskers as vibrissae. An elephant seal's vibrissae pick up underwater vibration and tactile cues that contribute to successful foraging. The sensory information from the extensive neural connections at the base of each whisker help them to focus on and follow prey.

Why do elephant seals have such large eyes?

Elephant seals have very large eyes in proportion to their body size, up to 3 inches in diameter. The eyes have a much greater density of photoreceptors than in other pinnipeds. The sensitivity of their eyes to light is ten times that of a human and is particularly sensitive to the colors of their bioluminescent prey. Like cats, they have a reflecting surface behind the retina, called a tapetum lucidum, which roughly doubles their sensitivity. Their eyes permit clear vision both in water and in air. The powerful lens of their eye is responsible for most of the focusing, rather than the cornea. In addition, it takes only 2–3 minutes for elephant seals to adapt their vision from the bright ocean surface to the dark conditions at the bottom of their dive. In comparison, it would take humans 25 minutes to adapt to the same dark conditions.

What is a chest shield on a male elephant seal?

As a secondary sex trait (like a man's beard), male elephant seals develop a hard chest shield of thickened skin and scar tissue. It begins to develop at 2 to 3 years of age. When fully developed at 8–9 years of age, the shield covers most of the chest. The chest shield protects them from major injuries during fights with other males.

What do elephant seals eat?

It is not yet known in detail what elephant seals eat, but in general, it is thought that they dine on deep-water bottom-dwelling and mid-water marine life, such as ratfish, hagfish, sharks, spiny dogfish, eels, various rockfish, octopus, and squid. The seals employ a grab and swallow technique of feeding, taking such prey as hake, dogfish, rays, and octopus, generally from the ocean bottom. Recent evidence shows that the female diet is primarily composed of lanternfish, deep-sea smelt, and ragfish, with squid making up 5%–30% of their diet.

How deep do elephant seals dive, and how do they do it?

Elephant seals are one of the deepest diving marine mammals in the world (first is Cuvier's beaked whale, followed by the sperm whale), diving to recorded depths of over a mile in depth. Rather than hold their breath as we do when we dive, elephant seals expel the air from their lungs, decrease the blood flow to their extremities, slow their heart rate to about 4–15 beats per minute—down from 55–120 per minute on land—and store their oxygen in their muscles and red blood

cells. This allows them to stay down for as long as an hour or more, although the average dive is 30 minutes and to a depth of 1,000–2,000 feet. Because they have collapsed their lungs and exhaled before diving, elephant seals can surface from the depths with no concern for decompression sickness (aka the "bends"), which human divers would get if they rise too quickly. An elephant seal only has to be on the surface for a few minutes before being able to return to a deep dive, having reoxygenated their blood.

The elephant seal's nostrils contain valves that close tightly when asleep and have to be snorted open upon awakening. This allows the seal to dive without taking in water through their nostrils. Also, an extensive honeycomb structure in the nasal cavities, called the turbinate process, acts as a condensation chamber to minimize water loss during breathing.

Do elephant seals eat while they are at Point Reyes?

Neither males nor females eat or drink while on land; they are fasting, subsisting on stored fat (aka blubber) instead of recently eaten food. While they fast during the breeding season, both sexes lose slightly more than 1/3 of their mass. Males lose 1,048–1,870 pounds. Females lose 264–520 pounds. After pups nurse for 28 days, they too do not eat until they leave Point Reyes, usually about two months later.

Elephant seals have no means to extract fresh water from saltwater. When at sea, their water comes from the prey they eat. In general, their water needs are met via a combination of storage and conservation. Water is retained in the blubber. And to conserve the body's water, a seal will retain moisture through irregular breathing patterns (apnea) and possibly by recapturing and retaining moisture through the nasal cavity (turbinate process).

What is the life cycle of a northern elephant seal?

Pups

Most pups are born at Point Reyes in January and February. At birth, pups weigh about 70 pounds. Initially they are called black coats as their birth coat is black. Their mother nurses them for 28 days, during which their weight increases to about 300 pounds. Mother's milk is very rich—about 60% fat compared to 3–5 % fat in human milk. Pups generally do not go in the water, but stay with their mother during this time.

Weanlings

When the pup is weaned at the end of the 28 days, we no longer call them pups, but rather “weanlings” (or “weaners.”) Their coat begins to change, becoming a silver gray. They spend the next couple of months on the beach, resting and sleeping, and intermittently practicing swimming and diving. They are also learning to hold their breath longer each day. The weanlings form weanling pods, where they group together. As time passes, the weanlings spend more and more time in the relative safety of the shallow tide pools made available when the tide goes out, or in the fresh/brackish-water creeks that run out to the sea. They vocalize at each other and learn aggressive social cues from weanlings that don’t seem to want company. They discover what lies behind them by tilting their heads back and rearing up as high as they possibly can by using their impressive abdominal muscles. They find out that they have hind flippers by leaning back and biting on them. These seemingly ridiculous activities build necessary skills that help them fully assess their surroundings and understand sensations in their hind body that might mean danger from attacking predators. All this physical activity and not having much in the way of nutritional intake causes the plump bodies of the weaners to decrease in size while their muscles become more toned, readying them for their life of swimming and diving for food at sea.

Around three months of age, the weanlings take off for their first ocean voyage and foraging. Only about 50% of the weanlings will survive their first year.

Yearlings

As a yearling, the seals are losing and regaining weight as they begin to successfully forage, but they will not reach their post weaning weight in their first year or two. The lean muscle to fat ratio increases and they grow about 10 cm longer, but weigh no more than when they departed the rookery on their maiden foraging trip at 3.5 months of age. Nevertheless, the diving pattern and migratory routes of young seals approach that of adults even on the first trip to sea.

The life of an adult female elephant seal

Females give birth for the first time at an age of three or four years, usually in January and February. They come ashore six days or so before giving birth. During the last three to five days of nursing, the female comes into estrus and will mate with one or more of the socially dominant males on the rookery beaches She may mate as she has finished nursing and is leaving the beach.

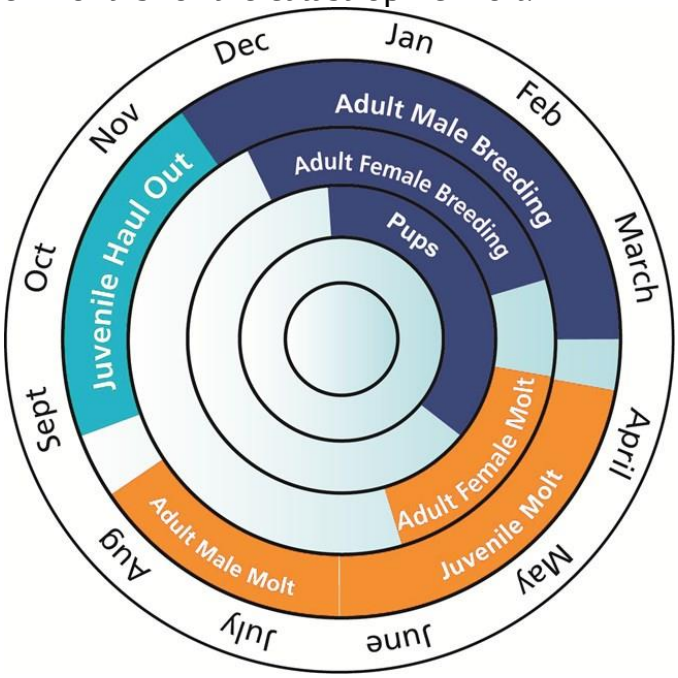
Delayed implantation is common among pinnipeds, including the elephant seal. While gestation lasts for 11 months after mating, the actual fetal development is only for eight months after a delayed implantation. After fertilization of the egg, the blastocyst, e.g., the fertilized egg, goes through several cell divisions and remains free in the uterus. Depending on the weight she puts on during the first of two annual foraging trips, the blastocyst implants in the uterus wall three months after mating and active fetal development begins.

Female elephant seals have two foraging trips of quite different lengths. The first is about 2.5 months and ends with the return for the molt. The second is closer to 7.5 months, ending with the return to the beach to give birth. In general, they forage in the open ocean far west of Washington and Canada. (See Map below) The longest recorded round trip for the first foraging trip of a post-breeding female was about 3,024 miles.

Females return to Point Reyes in April and May for what is called a catastrophic, or radical, molt. Once a year, elephant seals lose and replace all their hair and tge top layer of skin over a period of just a few weeks. They slough off their fur and skin in patches. This process requires increased blood flow to the skin's surface in order to supply nutrients to the newly growing hair. Because heat loss occurs more rapidly in water than on land, elephant seals haul out onto beaches while the molt occurs. Following her molt, the female elephant seal returns to the sea, where she will remain until she returns in January to give birth. On this foraging trip, pregnant females make roundtrips of between 2,423 and 4,225 miles.

<u>The lifecycle of a male elephant seal</u>
Males are sexually mature at age 5, and fully developed at age 9. The prime breeding years are 9–12. Males do not reach high rank before age 8. When they arrive in December, the dominant males fight to establish a territory on the beach. The losers and younger males move to other beaches, waiting for an opportunity to mate. Only about 1% of male elephant seals born actually get to mate during their life. But when they do, they are highly polygynous and a successful male can impregnate up to 50 females in one season. Females mate with more than one male and are sometimes able to "select" which male by protesting loudly if a less dominant male approaches her, alerting the dominant bull. This behavioral adaptation enables the strongest males to mate with the females.
Adult males stay onshore during the breeding season until mid- to late March. Many males stay in Point Reyes for the entire length of the breeding season (~3 months), fasting the entire time. They remain until the last female has left and then rest for one to two weeks before leaving for their long foraging trip. The male's

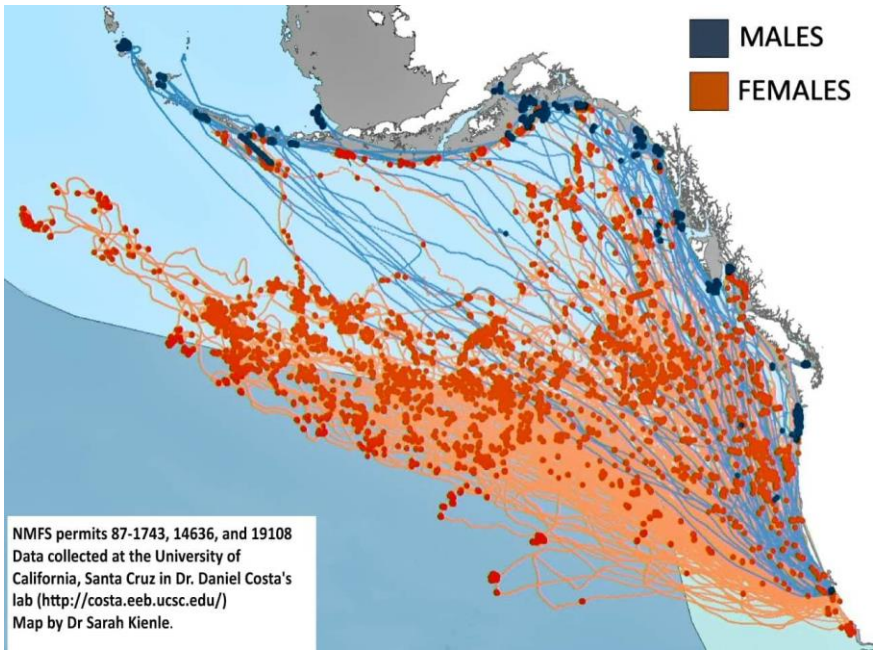
post-breeding foraging trip lasts about four months. They then return to Point Reyes in the summer months for the catastrophic molt.



Where do elephant seals go when they are not at Point Reyes?

Migration. Northern elephant seals spend 80% of their life in the open sea, only coming on land twice a year to give birth, mate, and molt. They are solitary animals while at sea, living close together only while on land. In general, they are onshore in the winter for birthing and breeding, and in the spring and summer to shed their fur (molt) and grow their new skin and coat. Juveniles, who don't participate in mating or pupping season, come ashore for a month sometime during September to December (juvenile haul out).

Males also make two trips to sea, four to five months per trip, the first following the breeding season, and the second after they have molted in the summer. Since males arrive before females for breeding, and may stay after until mid-December, their total time at sea is only eight to nine months.



Migration patterns of Northern Elephant Seals

Do elephant seals come back to the same rookery year after year**?**

Overwhelmingly, elephant seals come back to the same general area in which they were born. Scientists determined this by tracking elephant seals with different colored tags depending on their birth location. A pink tag means the elephant seal was born at Point Reyes. A green tag means that the elephant seal was born at Año Nuevo. Not every pup is tagged.

Who are elephant seals predators?

White sharks and orcas.

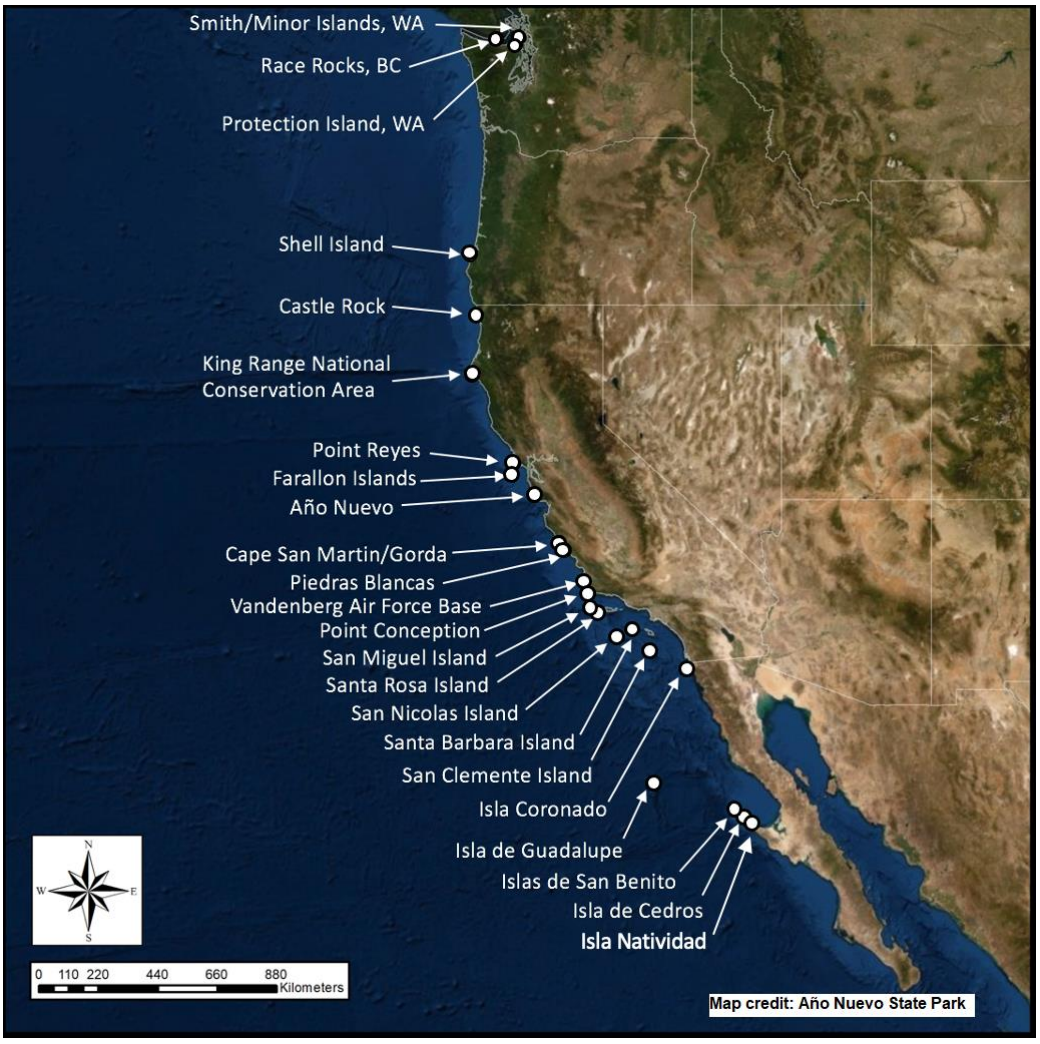
What kinds of studies are conducted on elephant seals?

Elephant seals are very tolerant of people and they are predictable in when and where they return to shore every year. Those reasons, along with their fascinating natural history and biology, make them perfect candidates for scientific research. Many different types of studies have been done with elephant seals over the last 50 years. Recent studies include investigating the female diet and how they consume prey, understanding physiological stress responses to their extreme fasting abilities, how body size affects the health of the seal and reproductive success, male vocalizations and dialect, using thermography to understand weather effects on the

behavior of seals, and weanling migration patterns. This is just a small sampling of the various research about elephant seals. Many studies are published every year with most of the research taking place at Año Nuevo.

Where are elephant seals rookeries and haul-outs?

Mainland - Point Reyes, Año Nuevo, Cape San Martin/Gorda, Piedras Blancas, King Range, and small colonies in Crescent City, southern Oregon, and Washington.
California Islands: Southeast Farallon, Año Nuevo Island, San Miguel, Santa Rosa, Santa Barbara, San Nicolas, and San Clemente.
Canada Island: Race Rocks
Mexican Islands: San Martin, Guadalupe, San Benito, Cedros, and Natividad



BIRDS OF POINT REYES

What would be good advice for new birders?

1) Don’t worry about the other 400+ birds at Point Reyes National Seashore.
2) Don’t worry about misleading bird books. Field marks require a level of detail that beginning birders lack. Names are often based on breeding plumage, which is not often seen here. Size is best measured by comparing to a nearby bird. The following list will size many birds in relation to the size of surf scoters, one of the most common birds seen here.
3) Don’t worry if it turns out not to be a bird. Seals can look like birds, but seal fur is shiny; feathers are matte. Buoys can look like birds, but buoys are colored; birds are often gray/brown. Debris can look like birds, but birds do not hold the same fixed posture.
4) Don’t worry about not having fancy binoculars. Your interest determines your ability to learn birds, not your income. (Binoculars are available for your use during your shift)
5) Don’t worry about mis-identifying a bird. Just call it a possible scoter (90% of the birds seen will be surf scoters). The Two Bird Theory: “My bird just dove and hasn’t come up...ever.”
6) Don’t worry about cleaning the lens of the NPS scopes. Rain makes the scopes useless; cover as best as possible. Don’t try to clean the lens, you will likely only damage it.
7) Birding is best learned from another birder, please ask!

Credit for this entertaining and informative list -Gordon Bennett and Kate Carolan 11/07 (with thanks to Rich Stallcup) with modifications by the WWDP.

What birds are you likely to be asked about? [9][10]

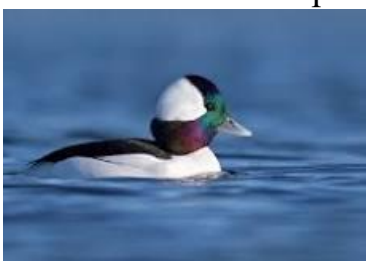
Water Birds

Surf Scoters (scoter, not scooter): These are not puffins, but are diving ducks. They are seen in open water in large flocks or in mating groups (5–10). Scoters' wings squeak on takeoff. Males are black with a white patch on back of the head; females are brown with white smudge on the cheek. They are 19–24 inches in length with a wingspan of about 30 inches.

Surf Scoter – Male

Surf Scoter – Female

Buffleheads: These diving ducks are often seen in open water in small flocks (5–7). They are about half the size of scoters. Males are black and white with a large white patch on the side of head that opens and closes to impress the females. Females are duller with a white patch on cheek.



Bufflehead – Male

Bufflehead- Female

[9] A complete Bird List is in the appendix..
[10] All pictures are in the plumage that you are likely to see the birds in the winter.

Red-breasted Mergansers: These diving ducks are often seen in open water in small flocks (5–7). They are approximately the same size as scoters but are longer and thinner. Their bills are pointed and not duck-like and have long scraggly head feathers. When eating, they swim with their face in the water. These are fish eaters with serrated bills.

Red-Breasted Merganser- Male

Red-Breasted Merganser Female

Western Gulls: These gulls are large and noisy, in water or on land, in flocks or singles. As adults they have pink legs and dark gray backs. They are 1.5 times the size of scoters. They seem to know and cluster around elephant seals about to give birth. Point Reyes is also home to mew gulls, Heermann's gull, California gull and glaucous-winged gull, to name a few.

Adult Western Gull

Brown Pelicans: They can be seen singly, flying in lines, or perched on docks. They are five times scoter-size. Their distinctive flight involves a few wing flaps and then a glide, often close to the waves. The necks and heads of adults are white until breeding season, during which they develop yellow feathers on their head and neck. Four toes are webbed. They were once listed as endangered, largely due to DDT poisoning, which thinned the shells of their eggs. Their population is bouncing back. They are about 49–53 inches in length with an average wing span of 6.5 feet. Point Reyes is also home to the larger American white pelicans, who are often observed at the mouth of Drakes Estero.

Brown Pelican

Double-Crested Cormorants: These large, black diving birds can be seen in open water in small flocks or singly, or perched holding their wings out to dry (like the batman symbol). They have less preen oil than other birds, so their feathers do not shed water like a duck's. Though this seems like a problem for a bird that spends its life in water, wet feathers probably make it easier for cormorants to hunt underwater with agility and speed. They are two times the size of scoters, but slimmer with yellow long, hooked bills; immature birds have pale chests. These solid, heavy-boned birds are experts at diving to catch small fish as deep as 25 feet.

Double Crested Cormorant

Common Loon: These are large, diving waterbirds with rounded heads and dagger-like bills. They have long bodies and short tails that are often not visible due to how low they float. They are usually seen as singles or a couple, almost never in a flock. They often put their face in the water to look for fish before diving and may dive as deep as 200 feet. It swallows most of its prey underwater. Loons have solid bones that make them less buoyant and better at diving. They can quickly blow air out of their lungs and flatten their feathers to expel air within their plumage, so they can dive quickly and swim fast underwater. Once below the surface, the loon's heart slows down to conserve oxygen. Loons are like airplanes in that they need a runway for takeoff, needing from 30 yards up to a quarter mile (depending on the wind) for flapping their wings and running across the top of the water in order to gain enough speed for lift-off. Migrating loons have been clocked flying at speeds of more than 70 mph. They are about three times the size of scoters. Although

often seen here in breeding plumage, they do not breed here. The pictures below are breeding and non-breeding plumage respectively.
Pacific loons and red-throated loons are also seen at Point Reyes.


Common Loon- Male


Common Loon - Female

Western and Clark's Grebes: Large, slender waterbirds with a very long neck, a red eye, a large head that may show a peak, and a long, slender, pointed bill. Their body is black on the back, but the chin, throat and chest are white. These diving birds are seen in small flocks or singly. It can be difficult to tell the difference between a Western and Clark's grebe. The black on the face of a Western grebe drops below the eye while on a clark's grebe, the black stays above the eye. Courting birds have a captivating display in which the pair races side by side across the water, their necks gracefully curved and bills pointed to the sky. Western grebes, along with other grebe species, often swallow their own feathers as they preen. These feathers wind up lining the stomach, where they may help protect against punctures by sharp fish bones. They range in length from 21 to 30 inches long with a wingspan of 22–25 inches. Pied-billed grebes, horned grebes, and red-necked grebes are also here.


Western Grebe


Clark's Grebe

Common Murres: A large, heavy-bodied seabird with a long, pointed bill, short tail, and slender, pointed wings. Breeding birds are neatly marked with blackish head, face, and upperparts, and are clean white below. At a distance, people mistake them for penguins. Their slender wings allow them to fly long distances to forage and then work like flippers as the birds swim down 100 feet or so to catch fish. Murres

are at home on the open ocean and rarely come to land, except when nesting. They breed on oceanside cliffs and islands. One such breeding colony can be seen from the observation deck at the lighthouse. The shape of a murre egg is distinctive: narrow, almost pointed at one end, very broad and round at the other. If nudged accidentally, these eggs roll in a neat circle around the narrow end—making it less likely that they will roll off their cliff ledge. Both parents feed the single chick. Once the chick is ready to fledge, the female leaves and the male take the chick to sea and teaches it how to capture prey. They live an average of 26 years. At maturity they are 15–17 inches long with a wingspan of 25–28 inches.

Common Murres

Shorebirds: There are many different shorebirds at PORE. While sanderlings are common on the beaches, you may also see curlews, marbled godwits, willets, and various plovers.

Sanderlings: These fast little birds are 7–8 inches long. They are most often seen running up and down the beach, eating up tiny prey in the wet sand left by receding waves. Here they are most likely to be light gray above and white below, with a blackish mark at the shoulder. Their legs and bills are black. They breed in the Artic.

Sanderling

Willets: Willets are large, stocky shorebirds with long legs and thick, straight bills that are considerably longer than the head. Their wings are broader and rounder than those of many shorebirds and the tail is short and squared off at the end. Willets are gray or brown birds that, when flying, display a striking white and black stripe along each wing. They are 13–16 inches in length and have a wingspan slightly longer than two feet.

Willets

Marbled Godwit: During their time here, they are barred above and below in brown, white, but have unbarred cinnamon-washed underparts. In flight, they display cinnamon underwings. The bill is bicolored: black at the tip and pink during the nonbreeding season. Godwits sometimes walk while probing or take a few steps before burying its bill into the mud in search of aquatic invertebrates.

Marbled Godwit

Long billed Curlew: North America's largest shorebird, the long-billed-curlew is a graceful creature with an almost impossibly long, thin, and curved bill. This speckled, cinnamon-washed shorebird probes deep into mud and sand for aquatic invertebrates on its coastal wintering grounds. They are 20–25 inches long with a wingspan of 24–35 inches.

Long Billed Curlew

Snowy Plovers: Snowy plovers are small shorebirds (sparrow-sized, ~6 inches long) with gray legs, short black beak, and pale gray-brown upperparts, and snowy white underparts. During the breeding season, males develop dark black ear patches, black foreheads, and a black neck collar; females are much less contrasting. At Point Reyes National Seashore, they nest on sandy beaches in unvegetated to sparsely vegetated areas among woody debris and shells. Their eggs are laid in open depressions in the sand, leaving them vulnerable to predators and being trampled. The breeding season begins in mid-March and lasts until mid-September. They were declared federally threatened in 1993. Current population estimates of western snowy plovers along the Pacific Coast are no more than 2,500 birds.

Point Reyes has implemented a recovery project for the breeding population at the park. A brochure about this program is provided.

Snowy Plover with Chick

Egrets: There are two kinds of egrets you are likely to see at Point Reyes. One is the snowy egret and the other is the great egret. Egrets are a kind of heron. In the

1800s and early 1900s, egrets were hunted for plumes for hats, which almost led to their extinction.

Great Egrets: These are tall, long-legged wading birds with long, S-curved necks and long, dagger-like bills. In flight, the long neck is tucked in and the legs extend far beyond the tip of the short tail. They range from 37 to40 inches tall with a 4.5 foot wingspan. Great egrets wade in shallow water (both fresh and salt) to hunt fish, frogs, and other small aquatic animals. They typically stand still and watch for unsuspecting prey to pass by. Then, with startling speed, the egret strikes with a jab of its long neck and bill.

Great Egret

Snowy Egrets: These birds are all white with a black bill, black legs, and yellow feet. They have a patch of yellow skin at the base of the bill. Immature snowy egrets have duller, greenish legs. They are considerably smaller than great egrets averaging about 2 feet in length and a 3–3.5 foot wingspan. Snowy egrets wade in shallow water to spear fish and other small aquatic animals. While they may employ a sit-and-wait technique to capture their food, sometimes they are much more animated, running back and forth through the water with their wings spread, chasing their prey.

Snowy Egret

Herons: There are two species of herons commonly seen at PORE. Most noticeable is the great blue heron. The other is the black-crowned night heron.

Great Blue Heron: Largest of the North American herons with long legs, a sinuous neck, and thick, daggerlike bill. Head, chest, and wing plumes give a shaggy appearance. In flight, the great blue heron curls its neck into a tight “S” ape; its wings are broad and rounded and its legs trail well beyond the tail. Adults measure 3– 4.5 feet in length and have a wing span of 5.5–6.5 feet.

Great Blue Heron

Black-Crowned Night Heron: These herons are small with rather squat, thick proportions. They have thick necks, large, flat heads, and heavy, pointed bills. The legs are short and, in flight, barely reach the end of the tail. The wings are broad and rounded. They are about two feet long with a wingspan of just under four feet. Black-crowned night-herons often spend their days perched on tree limbs or concealed among foliage and branches. They forage in the evening and at night, in water, on mudflats, and on land. In flight they fold their head back against their shoulders, almost making the neck disappear.

Black-Crowned Night Heron

Raptors: There are many kinds of raptors at Point Reyes. In addition to the ones described below, some of the others you may see are osprey, bald eagle, red-shouldered hawk, merlin, prairie falcon.

Red-tailed hawks are seen soaring or perched on posts. They are three times the size of scoters. You can identify them by their red tail (which gets redder as they age) as well as by a black line on the leading edge of the underside of their wing.


Red Tail Hawk

American Kestrels are small falcons seen hovering or perched on wires. It's one of the most colorful of all raptors: the male's slate-blue head and wings contrast elegantly with his rusty-red back and tail; the female has the same warm reddish on her wings, back, and tail. Hunting for insects and other small prey in open territory, kestrels perch on wires or poles, or hover facing into the wind, flapping and adjusting their long tails to stay in place. Kestrels are declining in parts of their range. They are half the size of scoters.

American Kestrel

Peregrine Falcon: This bird is the fastest member of the animal kingdom. They can attain speeds of 200 mph in a dive. The air pressure from such a dive could possibly damage a bird's lungs, but small bony tubercles on a falcon's nostrils are theorized to guide the powerful airflow away from the nostrils, enabling the bird to breathe more easily while diving by reducing the change in air pressure. To protect their eyes, the falcons use their nictitating membranes (third eyelids) to spread tears and clear debris from their eyes while maintaining vision. They typically feed on medium-sized birds, such as pigeons and doves, waterfowl, gamebirds,

songbirds, parrots, seabirds, and waders. They, along with the pelicans, were almost wiped out due to the use of DDT and other pesticides. The population is recovering. They can be frequently seen in the area of the lighthouse.

Peregrine Falcon

Northern Harrier: The harrier is a medium-sized hawk with long tail and thin wings. They can be observed flying with wings held in a V-shape, low over open fields and marshes, listening for rodents lurking below. This distinctive foraging behavior and a conspicuous white patch on their rump in all plumages are traits that make it easy to identify them. Females and immatures are warm brown. Adult males gray above and whitish below with black wingtips.

Northern Harrier- Female

Northern Harrier- Male

Common Ravens: These large black birds (much bigger than crows) cruise the overlook and parking lots looking for handouts. They are 1.5 times the size of scoters–25 inches in length. They can live for more than 23 years. They are opportunistic feeders and very intelligent. They are a threat to the eggs and chicks of the snowy plover at Point Reyes. The common raven is an acrobatic flier, often doing rolls and somersaults in the air. One bird was seen flying upside down for

more than a half-mile. Young birds are fond of playing games with sticks, repeatedly dropping them, then diving to catch them in midair.

Common Raven

Owls

Point Reyes is home to several species of owls, including the threatened northern spotted owl. Owls are nocturnal feeders. You may hear them during the day on occasion, and with much patience (or a tip from someone) you may be able to see them in the tree that they roost in during the day.

Great Horned Owl: This is probably the most commonly seen owl at Point Reyes. It has long, earlike tufts, intimidating yellow-eyed stare, and a deep hooting voice. This powerful predator can take down birds and mammals even larger than itself, but it also dines on daintier fare such as tiny scorpions, mice, and frogs. It is 1.5–2 feet in length with a 3–5 foot wingspan.

Great Horned Owl

Burrowing owls: Burrowing owls are small, sandy colored owls with bright-yellow eyes. They live underground in burrows they've dug themselves or taken over from a prairie dog or ground squirrel or from badgers here at Point Reyes They live in grasslands, deserts, and other open habitats, where they hunt mainly

insects and rodents. Their numbers have declined sharply with human alteration of their habitat and the decline of prairie dogs and ground squirrels. They are 7.5–9.8 inches in length and a slightly less than 2-foot wingspan.

Burrowing Owl

Barn Owls: Ghostly pale and normally strictly nocturnal, barn owls are silent predators of the night world. Lanky, with a whitish face, chest, and belly, and buffy upperparts, this owl roosts in hidden, quiet places during the day. By night, they hunt on buoyant wingbeats over open fields and meadows. You can find them by listening for their eerie, raspy calls, quite unlike the hoots of other owls. Despite a worldwide distribution, barn owls are declining in parts of their range due to habitat loss. Their bodies are 12–16 inches long and they have 40-50-inch wingspan.

Barn Owl

Sparrows

White-Crowned Sparrow: These are the little brown fearless birds seen along trails and parking lots. Tiny: only 5% the size of scoters. They learn “speech” from parents, as humans do.

White-Crowned Sparrow

LAND MAMMALS OF POINT REYES

How many different kinds of native land mammals live in the Point Reyes National Seashore area?

Over 40 different land mammals find their homes in the Seashore.[11].

What are some of the land mammals that visitors are likely to see?

Tule Elk: The tule elk (*Cervus canadensis nannodes*) is one of two subspecies of elk native to California. Their numbers were severely reduced in the mid-1800s, primarily due to uncontrolled market hunting and displacement by cattle. For a brief period of time, tule elk were thought to be extinct until a herd of fewer than 30 tule elk were found on a cattle ranch near Bakersfield. Henry Miller, the owner of the ranch, had the foresight to preserve this last isolated group in 1874. All of the estimated 5,700 tule elk present in twenty-two herds across California (as of 2020) were derived from this small remnant herd, thanks to his initial efforts.

Tule elk are endemic to California, meaning they are found only in our state. State and Federal legislation in the early 1970s, authorized the California Department of Fish and Game, in cooperation with U.S. Fish and Wildlife Service and the National Park Service, to reintroduce the extirpated tule elk to Tomales Point. As a result, ten animals (eight females and two males) were transplanted from an existing reintroduced herd in the San Luis National Wildlife Refuge near Los Baños to a 2,600-acre fenced enclosure on Tomales Point in 1978. The site of this release was a decommissioned cattle ranching area, known as Pierce Point Ranch, which is now designated as wilderness.

Further conservation efforts resulted in an additional free-ranging herd being established at Point Reyes. In 1998, twenty-eight animals taken from the Tomales Point preserve were released in the wilderness area south of Limantour Beach. Reintroduction of tule elk to the National Seashore and the further establishment of the free-ranging herd has been an important component of the restoration of the natural systems historically found in this unique and treasured place. Visitors to Drakes Beach are likely to see the herd as they drive up or down the spur road.

[11] See Appendix for a detailed list.

The National Park Service is updating its management planning for the Tomales Point area of Point Reyes National Seashore with the Tomales Point Area Plan environmental assessment. Development of this plan is based on the severity and frequency of two historic droughts in Marin County over the last decade and impacts to tule elk and other resources within the Tule Elk Reserve at Tomales Point. Current management guidance for this area did not anticipate these drought conditions or consider climate change. The planning area includes the 2,900-acre Tomales Point Tule Elk Reserve and more than 85% of the planning area is within the Phillip Burton Wilderness. The park will collaborate with the Federated Indians of Graton Rancheria to incorporate tribal views and traditional ecological knowledge throughout this process. A final decision for the Tomales Point Area Plan is anticipated in the summer of 2024.

Male and Female Elk

Black-tailed deer: The Columbian black-tailed deer (*Odocoileus hemionus columbianus*) has a geographic range that spans from southern British Columbia to Santa Barbara County in California, and as far east as the Cascade and Sierra Nevada. The species is common throughout Point Reyes National Seashore. Black-tailed deer are considered a “keystone” species in the native California coastal ecosystem because fluctuations in their population numbers have the potential for repercussions throughout the ecosystem.

Black Tailed Deer

Coyote: The coyote (*Canis latrans*) is a species of canine native to North America. It is smaller than its close relative, the wolf. The coyote is listed as least concern by the International Union for Conservation of Nature, due to its wide distribution and abundance throughout North America. They are seen throughout Point Reyes and can occasionally be seen carting off the carcass of elephant seal pups that have died. Keep an eye out for the rare adult coyote with blue eyes. The few that have been observed seem to be limited to northern California with several seen at Point Reyes. Normally coyotes are born with blue eyes that turn yellowish-brown as they get older.

Coyote

Grey fox: (*Urocyon cinereoargenteus*), or grey fox ("grey" is the British English spelling of "gray"), is an omnivorous mammal of the family Canidae, widespread throughout North America and Central America.. The gray fox is mainly distinguished from most other canids by its grizzled upper parts, black stripe down its tail, ending in a black-tipped tail. Like other canids, the fox's ears and muzzle are angular and pointed. Its claws tend to be lengthier and curved. They may be seen anywhere at Point Reyes.

Grey Fox

Bobcat: The Bobcat (*Lynx rufus*), also known as the red lynx, is a medium-sized cat native to North America. It ranges from southern Canada through most of the contiguous United States to Oaxaca in Mexico. It has distinctive black bars on its forelegs and a black-tipped, stubby (or "bobbed") tail, from which it derives its

name. It reaches a total length (including the tail) of up to 50 inches (125 cm). It is an adaptable predator inhabiting wooded areas, semidesert, urban edge, forest edge, and swampland environments. They can be seen throughout Point Reyes and are frequently seen in the Tomales Point area.

Bobcat

Skunks: There are both spotted and striped skunks at Point Reyes. The more common of the two, the striped skunk, has an easily identifiable coloration: two thick white stripes along the back and tail sharply contrast with an otherwise black coat. The specific pattern of the stripes on the head, body, and tail vary among individuals. It is accompanied by a thin, white stripe running from the snout to forehead.

Stripped Skunk

River Otter: The North American river otter weighs on average 20 pounds and is roughly three feet long from extremely whiskery front end to oddly flattened tail. It features a large flattened moist "rhinarium," or nose pad. A river otter is a mustelid, like a weasel or a badger. But in terms of physique, it splits the difference between land and water mammals. It swims and runs passably well but is neither as adept as a seal in water nor as stealthy as a mink on land. With no blubber, it relies on a dense, luxurious coat of fur to stay warm. As it humps along a shoreline, the overall impression it creates is something like a Slinky in a fur coat. Both the North American river otter (*Lontra canadensis*) and the sea otter (*Enhydra lutris*) were native to the Point Reyes peninsula before they were extirpated from the area

in, respectively, the mid-1900s and early to mid-1800s. River otters returned to Point Reyes National Seashore without human intervention in the early 2000s and have since been reported in most significant water bodies and are frequently seen in and along the shores of Tomales Bay, Abbotts Lagoon, and Drakes Estero. The River Otter Ecology Project has an interactive map indicating where river otters have been seen recently, mostly in California, but they now also receive reports from elsewhere in North America. Every now and then, however, sea otters are seen in the waters of Drakes Bay—so keep your eyes open for them if you are visiting Chimney Rock. Beware, though, of misidentifying river otters as sea otters.

River Otters

Other notable species at Point Reyes: The Point Reyes mountain beaver (a "Species of Concern" and not really a beaver), voles, rats, mice, muskrat, woodrat, squirrels, chipmunks, raccoon, black-tailed jackrabbit, brush rabbit, shrews, moles, mountain lions, American badger, muskrats, and 13 species of bats.

CONCLUSION

Phew!!!!!!! That was a lot of information to get through even though we just scratched the surface. It would take most of a lifetime to learn all that is known about Point Reyes, not to mention the information that is being uncovered or discovered as time marches on.

Remember, you are not being asked to memorize what is in this handbook. Questions are always encouraged whether they be your questions or ones from a visitor.

I would like to leave you with this quote from Jane Goodall:

> "You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you have to decide what kind of difference you want to make."

Thank you for deciding to make a difference by participating in the Winter Wildlife Docent Program. The park, the rangers, the visitors and most of all, the many creatures that live here greatly appreciate your commitment.

Fiona O'Kelly,
Program Manager

Leslie Levy
Program Coordinator

APPENDIX

Point Reyes Bird List

Point Reyes National Seashore Bird List (nps.gov)

Point Reyes Mammal list

Mammals - Point Reyes National Seashore (U.S. National Park Service) (nps.gov)

A list of the Threatened & Endangered Species found at Point Reyes