

U.S. Fish & Wildlife Service

Farallon

*National Wildlife
Refuge*





Dense colonies of common murres and colorful puffins cloak cliff faces and crags, while two-ton elephant seals fight fierce battles for breeding sites on narrow wave-etched terraces below.



Natural History

Surrounded by cold water and plenty of food



Farallon National Wildlife Refuge, made up of all the Farallon Islands and Noon Day Rock, supports the largest seabird nesting colony south of Alaska. Thirteen seabird species numbering over 200,000 individuals nest here each summer. Throughout the year, six species of marine mammals breed or haul out on the islands.

Pigeon Guillemot



Photo: © Brian O'Neil

These islands are beside the cold California current which originates in Alaska and flows north to south, they are also surrounded by waters of the Gulf of

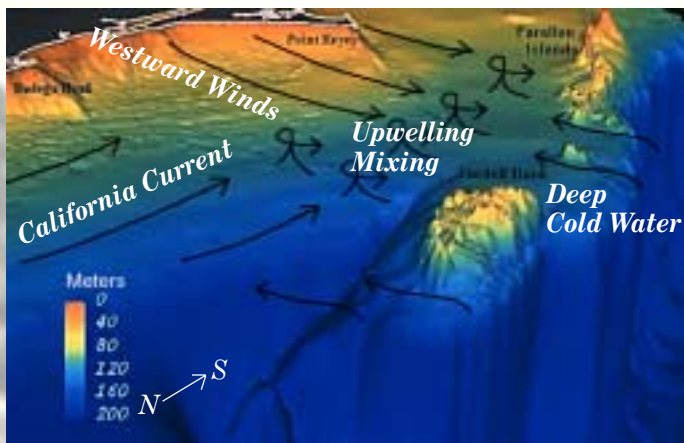
Farallons National Marine Sanctuary. Lying 28 miles west of San Francisco Bay the Refuge is on the western edge of the continental shelf. This area of the ocean plunges to 6,000 foot depths.

Western gull



Cold upwelling water brought from the depths as the wind blows surface water westward from the shoreline, and the California current flowing southward past the islands provides an ideal biological mixing zone along the continental shelf and around the San Francisco Bay area.

Photos: © Brian O'Neil



USGS

Chart of seafloor depths around Farallon NWR

Black oystercatcher



Photo: © Ian Tate

Common murre



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Upwelling occurs notably in the spring when these wind and water currents work together and saturate ocean waters with nutrients brought up from the deep ocean. When this mixture

reaches the sunlit zone, plant plankton blooms explode onto the surface, creating one of Earth's greatest shows of productivity. This is the key to the islands' rich, yet variable marine ecosystem. Animal plankton such

as tiny krill-like shrimp take advantage of this energy source, consuming the microscopic plants. They in turn are eaten by rockfish which spawn along the rocky shores and provide food for breeding seabirds, salmon, marine mammals and up the food chain to humans.

In El Niño years, warm surface waters from the equatorial Pacific may slow or stifle upwelling, and food resources in the California Current are scarce. This causes seabirds to produce fewer chicks, but they are long-lived and in boom years reproduce abundantly. Adaptability to year-to-year change in the marine ecosystem, and ultimately to long-term ocean/climate change, is a key to success for Farallon wildlife.

Wildlife in the Farallons

Breeding Seabird Species



Ashy storm-petrel

Leach's storm-petrel
Ashy storm-petrel
Fork-tailed storm-petrel
Double-crested cormorant
Brandt's cormorant
Pelagic cormorant
Black oystercatcher
Western gull
Common murre
Pigeon guillemot
Cassin's auklet
Rhinoceros auklet
Tufted puffin

California sea lion



© Brian O'Neil

Marine Mammals

Six species of marine mammals breed or haul-out on the Refuge:

Northern fur seal
Guadalupe fur seal
Steller's sea lion
California sea lion
Harbor seal
Northern elephant seal

Threatened/Endangered Species



California brown pelican

Steller's sea lion: The Refuge and surrounding waters are critical habitat for this threatened species. The Farallon Islands and Año Nuevo are the southernmost tip of their breeding range.

California brown pelican:

This endangered species disperses from breeding sites in southern California and Baja California to roost on and feed from the Farallon Islands. Hundreds, and sometimes thousands of pelicans drape West End Island and other roosting areas from late summer through fall. They alternate lazy flights over the island with spectacular plunge dives in nearby waters.

*Western
gull*



Did You Know...

...Theodore Roosevelt established the refuge in 1909.

...that the first fur seal pup born on the Refuge in over 150 years was discovered in 1996.

...half the world's population of Ashy storm-petrels breed on the Refuge.

... the largest colony of western gulls anywhere nests here.

...that over 400 species of breeding and migrant birds have been tallied at the Refuge.

...molting elephant seals will not eat or drink during their stay on the islands, which can be as long as five months, and lose up to 50% of their body mass.

...most of the Refuge (141 acres) is a designated Wilderness Area, where the forces of nature predominate and its natural character is preserved for future generations.

*Rhinoceros
auklet*



*Photo:
© Brian O'Neil*

Rhythm of the Year

Weather and wildlife dictate island rhythms. The year is divided into three biological seasons.



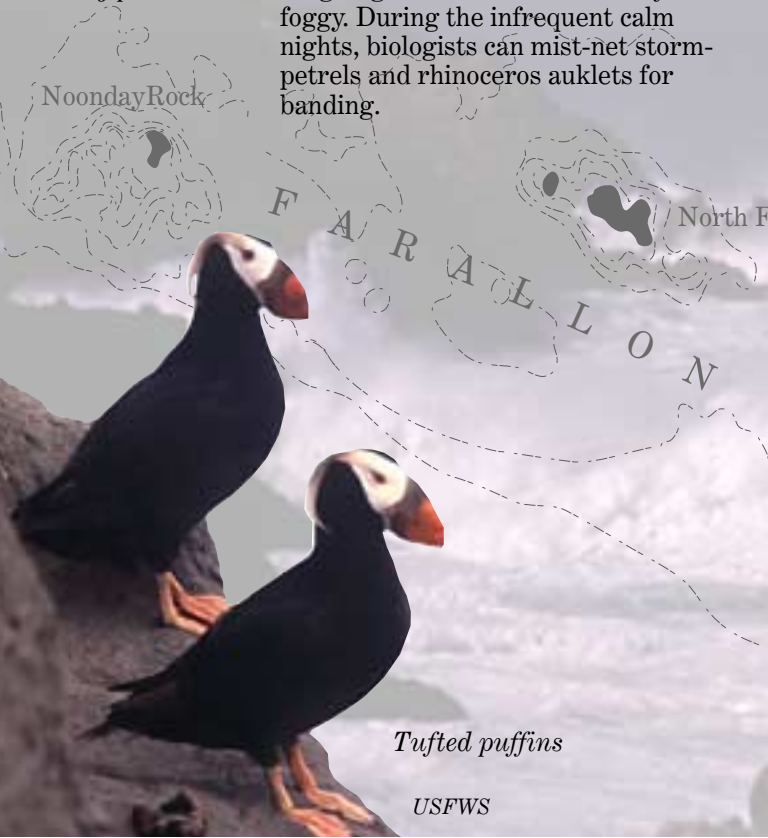
Bull elephant seals

From December through February fierce storms, up to 50-knot winds, and 25-foot seas pummel the islands. Rain or shine, biologists track the hundreds of pupping elephant seals. Missing for over 100 years, elephant seals returned in 1959, and have been breeding on the Refuge since 1972. The first pup of the season is usually born around Christmas!



Ashy petrel chick

March ushers in the seabird breeding season, which lasts into August. The long days are filled with biological monitoring: population counts, diet assessments, nest checks, and chick weighing. Weather is often windy and foggy. During the infrequent calm nights, biologists can mist-net storm-petrels and rhinoceros auklets for banding.



Tufted puffins

Photo: © PRBO, Peter Pyle



Great White shark

From September to November biological monitoring focuses on transient wildlife populations: bats, butterflies, cetaceans, and songbirds are counted, the latter including an amazing variety of off-course migrants. Many bird species never before

recorded in California were seen first on the Farallon Islands. White sharks, attracted to Farallon waters by the abundant seal population, are most numerous in fall, and biologists study their populations and predatory behavior from vantage points on the Refuge.

*Maintenance "season"
Non-native plant control*

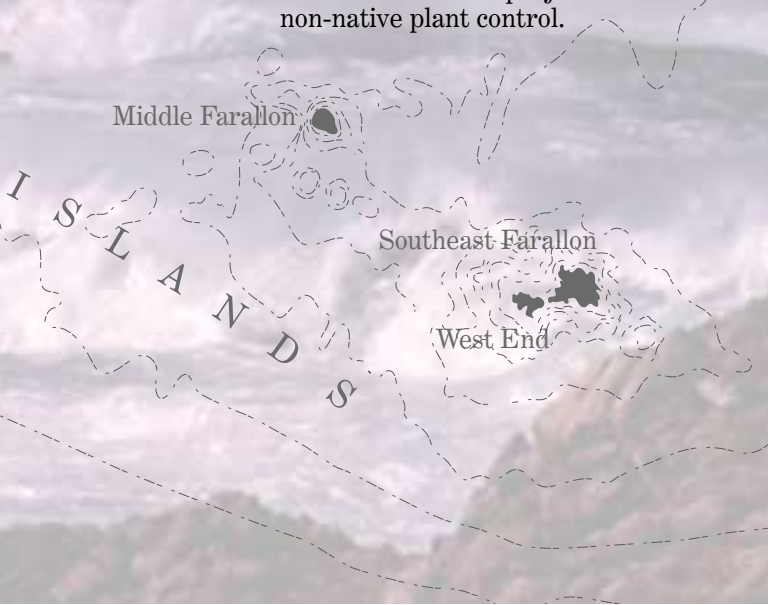
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Our calmest and clearest weather generally occurs in the fall. This, together with a diminished and less sensitive wildlife population, makes it an ideal time for the "4th Farallon Season" - The

Maintenance Season. Fall is a time for repairing facilities and conducting habitat restoration projects such as non-native plant control.

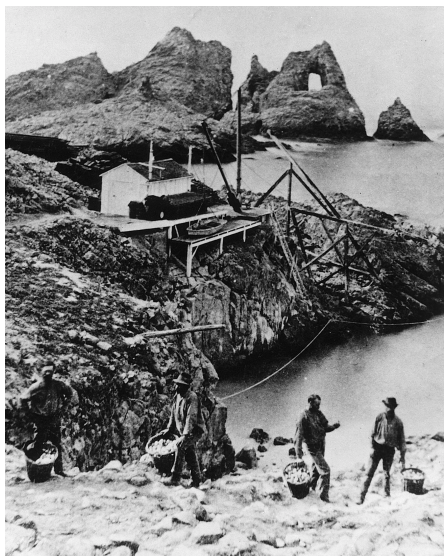
Farallon



Human History

Even though few people have visited the remote and rugged yet ecologically fragile Farallon Refuge, its human history is filled with exploitation and devastation of its wildlife populations, especially during the 19th and early 20th centuries.

Courtesy California State Library



Eggers circa 1860s

Sir Francis Drake reputedly took seal meat from Southeast Farallon Island in 1769. The next known humans to land there were U.S. sealers from Atlantic ports, and Russian sealers in the early 1800s. They hunted elephant seals

for oil and fur seals for pelts to local extinction. The Gold Rush era brought eggers who harvested staggering numbers of murre eggs for a booming market in San Francisco. Murres will re-lay their single eggs, but so many were taken that the seabird population dropped from an estimated one million to almost zero by 1900.

Farallon light



With maritime trade in San Francisco Bay flourishing, and shipwrecks common, the U.S. Lightkeeping Service placed a lighthouse on Southeast Farallon in the 1850s. Two Victorian-style houses, built in 1879 and still standing today, provided quarters for lighthouse keepers and their families.



Light keepers quarters

The U.S. Navy established a manned radio station on the island in 1905, which played a vital communications role following the 1906 earthquake in San Francisco: all messages in and out of the devastated city went through the Farallon station. The U.S. Coast Guard took over lightkeeping duties in 1939. During WWII as many as 72 people lived here in 1942. Beginning in 1950 only caretakers remained until the light was automated in 1972.

Conservation Partnerships and Management

Monitoring seabirds



Photo: © Brian O'Neil

In 1971 Point Reyes Bird Observatory (PRBO) and the U.S. Fish and Wildlife Service (Service) joined forces to provide protection, monitoring, research, and management of the Farallon National Wildlife Refuge. PRBO biologists had been monitoring

migrant landbirds on Southeast Farallon Island for several years, but the concern for marine birds and mammals drove this historic, decades long, joint cooperative agreement. It was a well-made match, and to our knowledge, is the longest-standing

partnership between the Service and a private organization in the nation.

Artificial nesting habitat



Management activities include removing non-native plants that cover nesting burrows and creating habitat

for crevice-nesting seabirds from unused concrete foundations.

Putting Wildlife First

Native lasthenia maritina



USFWS, M. Coulter

Since the Service began active stewardship in 1968, its management goal has been to allow species to recover their former abundance through natural processes. Human intrusions and impacts are minimized as much as possible through the following actions:

Boardwalk construction



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■ Closing off the most sensitive areas to all human contact (even biologists!)

■ Controlling non-native flora and fauna

■ Installing boardwalks to prevent walking on sensitive habitat

■ Conducting studies from observation blinds so that wildlife is not disturbed

■ Minimizing and screening night lighting so that nocturnal species are not disturbed

■ Installing nest boxes to minimize the need for human encroachment near natural nesting sites

■ Removing unneeded structures and concrete foundations to maximize natural habitat available to wildlife

■ Limiting the number of people allowed on the island

■ Being vigilant about recycling and minimizing consumption

Installing solar panels

■ Converting to solar-generated power



Having Your Wildlife and Viewing It Too

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Approaching the islands

The seabirds and marine mammals that live on oceanic islands do so BECAUSE they are free from humans and other disturbances. In order to give wildlife the seclusion they need to mate, reproduce, and care for their

young, the public is not allowed to land on the Refuge.

Visitors can experience the Refuge, and get good views of most of the breeding species, by taking a one-day Farallon cruise. Commercial

companies operating out of San Francisco, Sausalito and Emeryville, offer one-day natural-history boat trips to the Farallon Islands in spring through fall.

If you journey to the Farallon Islands in a private boat or aircraft, be aware that Refuge regulations prohibit all activities that result in harassment of wildlife. Harassment includes any disturbance (even unintentional) that causes wildlife to flush. See 50 CFR Sections 27.34 and 27.51 for more details; fines apply.

■ Airplane pilots, are encouraged to follow FAA recommendations of a ceiling of 2,000 feet above the Gulf of Farallons Marine Sanctuary and the Refuge.

REMEMBER! It is a violation to disturb wildlife here, regardless of your distance.



Boaters must observe the following California boating regulations. See section 630(b)(71), Title 14, California Code of Regulations or contact the Refuge for more details.

- Speed Limit = 5 nautical miles per hour within 1,000 feet of all islands
- Noise restrictions within 1,000 feet of shoreline of all islands
- Between March 15 and August 15 vessel traffic is prohibited within 300 feet (one football field length) of shoreline at specified portions of Southeast and North Farallon Islands. This includes no boats passing between Saddle Rock and Southeast Farallon Island

When you are around the islands, it helps to have a heightened sense of awareness. Your experience will be more vivid, and you will be more sensitive to the effect YOU may have on wildlife. If animals move away from you or appear concerned about your presence, move away.



Farallon NWR is one of more than 530 refuges in the National Wildlife Refuge System. The Blue Goose logo at the left is the symbol of these national lands set aside for fish, wildlife and plant resources.

How to Help and Who to Contact

Additional information about the Farallon National Wildlife Refuge may be obtained by contacting the Refuge Complex Headquarters listed on the back of this brochure. For more information about PRBO and the Farallon Islands, log on to their website at www.prbo.org, or call 415-868-1221.



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“Equal opportunity to participate in and benefit from programs and activities of the U.S. Fish and Wildlife Service is available to all individuals regardless of physical or mental disability. For more information please contact the U.S. Department of the Interior, Office of Equal Opportunity, 1849 C Street, NW, Washington, D.C. 20240

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National Wildlife Refuge
P.O. Box 524
Newark, CA 94560
510/792 0222**

<http://pacific.fws.gov/visitor/california.html>

**U.S. Fish & Wildlife Service
<http://www.fws.gov>**

**For Refuge information
1 800/344 WILD**

**California Relay Service
TTY 1 800/735-2929
Voice 1 800/735-2922**

**This brochure will be made
available in other formats
upon request.**

September 2002

