



# Predators and Prey of the Farallon Islands

## Predators

Healthy populations of predators are necessary to maintain the natural predator-prey balance in an ecosystem. Predators and prey are linked: both need protection. Being at the top of the food chain, predators are generally less abundant than their prey and thus are more vulnerable to threats. On and around the Farallon National Wildlife Refuge, the key predators are: seabirds, whales, sharks, and seals and sea lions.

## Seabirds

Eleven species of seabird concentrate on or around the Farallon Islands each spring and summer to breed and raise their young. In the fall and winter, the islands are an important resting spot for the Common Murre, Western Gull, and Brandts and Pelagic Cormorants.



Common Murres (left) and Pigeon Guillemot (right) with food. Top of page: A young Common Murre follows its parent.

### Breeding Seabirds

- Brandt's, Pelagic, and Double-Crested Cormorants
- Common Murres
- Cassin's Auklets\* and Rhinoceros Auklets
- Tufted Puffins\*
- Pigeon Guillemots
- Western Gulls
- Ashy Storm-Petrels\* and Leach's Storm-Petrels

\*California Species of Special Concern



California Sea Lions

## Marine Mammals

The islands serve as important breeding and resting grounds for five species of pinniped.

### Pinnipeds

- Steller's Sea Lions\*
- California Sea Lions
- Northern Fur Seals
- Harbor Seals
- Northern Elephant Seals

\*California Species of Special Concern

The Northern Fur Seal, after an absence of over 160 years, returned to breed on the Farallones in the late 1990s. This is significant because the Farallones are one of only two breeding sites for this species south of Alaska<sup>1</sup> and fur seals are declining in other parts of their range.

A resident population of Gray Whales feeds within a few miles of the islands during the summer and fall.<sup>2</sup>

## White Sharks

White Sharks\* migrate to the waters surrounding the Farallones every fall to feed on immature elephant seals.<sup>3</sup>

\*State Protected Species



Photos by: Sophie Webb (murres on water); Julie Howar (sea lions); Derek Lee (murres with food); Annie Schmidt (guillemot)



PRBO Conservation Science, in partnership with the US Fish and Wildlife Service, has been conducting research and stewarding the island's abundant and unique natural resources every day and night since 1968.

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*Western Gulls over Southeast Farallon Island* by Annie Schmidt

## Prey

Healthy ocean prey populations provide the food needed for top predators such as seabirds, marine mammals, sharks, and humans to survive. Key prey species at the Farallones are sculpin, rockfish, flatfish, anchovy, and pinnipeds.

### What are Farallon predators eating?

**Rockfish**, as well as sculpin, flatfish, and anchovy, are the main prey of seabirds, seals, and sea lions. Availability of these prey species is linked to the reproduction and survival of Farallon predators. These species thrive in the rocky and sandy habitats directly surrounding the islands (see table).

**For seabirds**, juvenile rockfish are especially important! 30% – 70% of the diet of Pigeon Guillemots, Pelagic Cormorants, Brandt’s Cormorants, Common Murres, and Rhinoceros Auklets is made up of juvenile rockfish.<sup>4</sup>

Pelagic Cormorants and Pigeon Guillemots show reduced reproductive success at Southeast Farallon Island when juvenile rockfish are not available.<sup>5</sup>

**Northern Fur Seals, Harbor Seals, and California Sea Lions** also feed extensively on juvenile rockfish.<sup>6</sup>

Rockfish Species	Found in Farallon Seabird Diet <sup>10</sup>	CDFG list of fish likely to benefit from MPA's
bank	●	●
black	●	●
blue	●	●
bocaccio	●	●
brown	●	●
chilipepper	●	●
copper	●	●
halfbanded	●	
shortbelly	●	
speckled	●	●
squarespot	●	●
stripetail	●	
widow	●	●
yellowtail	●	●
<b>Flatfish Species</b>		
Pacific sanddab	●	●
speckled sanddab	●	
rex sole	●	●
rock sole	●	
English sole	●	●

### Rockfish are vulnerable

- Many rockfish populations have declined due to overfishing and recent warm ocean conditions—and are of particular concern.<sup>7</sup>
- Rockfish populations are especially vulnerable to over exploitation because they are slow growing, long-lived, and take many years to reach reproductive age.

### How can we protect prey for Farallon predators?

- Protect the islands’ nearshore rocky and sandy underwater habitat year-round. Juvenile rockfish move close to the island each summer in preparation for settlement later in the year.<sup>8</sup> Adult rockfish use this habitat year-round. Flatfish use the sandy bottom nearshore habitat.
- Protect large rockfish: larger females produce more young than smaller ones and thus contribute more to population growth.<sup>9</sup>

Full citations for 1–10 can be found at [www.prbo.org/sefimapp](http://www.prbo.org/sefimapp).



Photo by Michael Carver



A Copper Rockfish (above). Yellowtail Rockfish (below).

Photos courtesy Cordell Bank National Marine Sanctuary and NOAA

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