

Marine Birds and Mammals: Overview

Using a loose definition of deriving some of their annual needs from the ocean, marine birds comprise an abundant and diverse group in California waters. Included would be about 70 regularly-occurring species: divers (loons and grebes), albatrosses, shearwaters, fulmars, storm-petrels, certain waterfowl (scoters, brant), phalaropes, skuas, gulls, terns, and auks (murre, puffins, guillemots, auklets, and murrelets). Infrequently occurring species would bring the total near 100. And that does not include any estuarine species, which certainly feed on "marine" fish and invertebrates (herons, egrets, curlews, godwits, plovers, and sandpipers). Peregrine falcons, bald eagles, and ospreys could also be considered as marine species as their prey often are marine organisms.

A true seabird never comes to land except to raise its young (incubate eggs, bring food to chicks), and most spend about 90 percent of their lives at sea. Using such a definition reduces the California species list of marine birds to a few dozen. Notable examples are albatross, storm-petrels, murre, and murrelets. Most divers, waterfowl, and gulls would drop from the list. Unlike most marine fish and invertebrates, true seabirds are long lived and produce very few offspring. They lay but one or two eggs each year or every other year, and guard them closely. Their strategy, unlike fish and invertebrates, is to take care of a few young for a long time until they become independent and have a pretty good chance for future survival. For many, care of young continues after departure from the nest. The reason for being so careful of young is that it is difficult for air-breathing vertebrates (including humans) to derive food from the sea.

Seabirds are highly evolved to exist at sea. They are among the most efficient flyers of all birds, and derive energy not just from food but also, in a way, from the winds. In fact, many species prefer to sit on the water if there is no wind. Using the wind, they can search huge expanses of ocean for prey and consume very little energy in the process. By and large, they take the most abundant and energy rich prey available, including small fish (anchovies, sardines, smelt, herring, and the juveniles of much larger prey: salmon, rockfish), squid, and crustaceans. For most species, the preferred prey are found in large schools near the surface. Some marine birds, however, can dive to depths greater than 300 feet (auks, loons). In their flights, marine birds seek areas where ocean processes concentrate their prey, for example where ocean waters of differing properties (warm vs. cold) meet (fronts).

Another unusual characteristic of seabirds is that they have almost no defense against land mammals. This is because they evolved using offshore islands for nesting;

normally, such places provide easy access to the sea and have no naturally occurring land predators.

For as long as humans have lived along the California (or any) coast, seabirds have been important and are part of the culture. Initially, they were used as sources of food and clothing (feathers) during the short times annually when thousands gather to breed and lay eggs. Nowadays, most human uses are recreational although since seabirds find fish more quickly than humans do, their feeding concentrations serve as beacons to commercial fishermen. The slow reproductive rates of seabirds make them vulnerable to human factors that lead to mortality - especially of adults and subadults (pollution, entanglement in fishing gear). The fact that they mostly eat the same fish prey as humans makes them vulnerable to over-exploitation of fish populations, showing signs of prey depletion (reduced growth of populations) before humans do.

The marine mammals of California include cetaceans (whales, dolphins, and porpoises), pinnipeds (seals, fur seals, and sea lions), and sea otters. Some are residents, while others pass along the coast during great migrations. Gray and humpback whales, for example, feed in Alaskan waters and migrate along the coast on their way to Mexican waters to breed and calf. Blue whales visit during summer to feed on rich concentrations of krill.

Marine mammals have been an important part of the coastal commerce off California for centuries. Native tribes used furs, teeth, and bones in different ways, and ate the flesh of various species of marine mammals. By the nineteenth and early twentieth centuries the harvest of seals, whales, and sea otters was such a profitable undertaking that many populations of marine mammals became depressed to levels from which some are still recovering. Off California, New England and Russian hunters captured sea otters for their furs until, on the brink



California Sea Lions, *Zalophus californianus*
Credit: Lillian Smith

of extinction, the International Fur Seal Treaty protected them in 1911. Now they have repopulated most of the California coast north of Point Conception. For a number of years in the 1900s, whaling was a profitable business in parts of California, but the loss of whales and, subsequently, their protection made whaling unprofitable. Nowadays, boat excursions carrying enthusiasts to view whales are more profitable than direct exploitation in past days. As examples of current use of marine mammals, the passage of gray whales by the Point Reyes Headlands during early winter requires shuttle buses by the National Park Service to avoid the traffic jams that otherwise would ensue. The Año Nuevo State Reserve attracts many thousands of visitors annually to observe the elephant seal rookery there. Hundreds of tourists each weekend stop at turnouts along California Highway 1 to observe harbor seals hauled out nearby on Bolinas Lagoon mud flats, and other thousands observe sea lions at Pier 45 in San Francisco. Sea otter exhibits at such places as Monterey Bay Aquarium and displays of other marine mammals at Sea World are major attractions.

The Marine Mammal Protection Act of 1972 placed a moratorium on taking marine mammals. The act has since been amended several times to better define how it should function in concert with other legislation. The focus now is to reduce the incidental take of some species. In response to protection, many populations of marine mammals have increased to levels that existed prior to their exploitation. Some populations, while expanding, are still listed as endangered or threatened under the federal

Endangered Species Act. The Guadalupe fur seal, believed until 1926 to be extinct, is making a very gradual recovery. Among baleen whales, the humpback, blue, and fin whales have shown little recovery and are listed. On the other hand, the gray whale was the first marine mammal species to be removed from the list of endangered and threatened wildlife. The sperm whale, the only non-baleen great whale is still listed as endangered.

Meanwhile, populations of some pinniped species have flourished from their protection to the extent that their interactions with humans again have become controversial. The state depleted their populations significantly during the early 1900s through direct slaughter. Now, the individual sea lion that feasts on the fisherman's catch and/or destroys gear can be shot only when caught in the act. Unintended entrapment or hooking of pinnipeds, sea otters, and porpoises has become a problem in some areas, where subsequently the use of gillnets has been restricted or stopped. The population increase and spread of sea otters have impinged on the fisheries for abalone and sea urchins, which are commercially profitable only in the absence of the otters. Whether or not the otter population will be allowed to recover further is a source of conflict that needs continual attention.

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