



Introduction to the West Coast Marine Mammal Stranding Network & 10 Year Data Summary

Frequently Asked Questions

What is a marine mammal stranding?

A stranding occurs when a marine mammal is dead on the beach or in the water; *or* it is alive and in need of medical attention, and is unable to return to its natural habitat or under its own power or without assistance. Here are a few examples; 1. A dead porpoise on the beach, 2. A dead whale floating in the water, 3. A live sea lion hauled out on the beach with an apparent injury, 4. An entangled whale swimming offshore. In the first three scenarios you should report the stranding to the West Coast Marine Mammal Stranding Network at 1-866-767-6114. To report an entangled whale please immediately call our entanglement hotline at 1-877-SOS-WHALE.

Why do marine mammals strand?

There are a number of reasons why marine mammals strand. In most cases, the cause of stranding is unknown but some identified causes include; disease, parasite infection, harmful algal blooms, injuries due to ship strikes or human interaction, fishery entanglements, pollution exposure, trauma, and malnutrition. Some strandings may be related to unusual weather or oceanographic events. Marine mammals are important indicator species of ocean health and each case can hold important information about the species or environment that contribute to scientific research or public education.

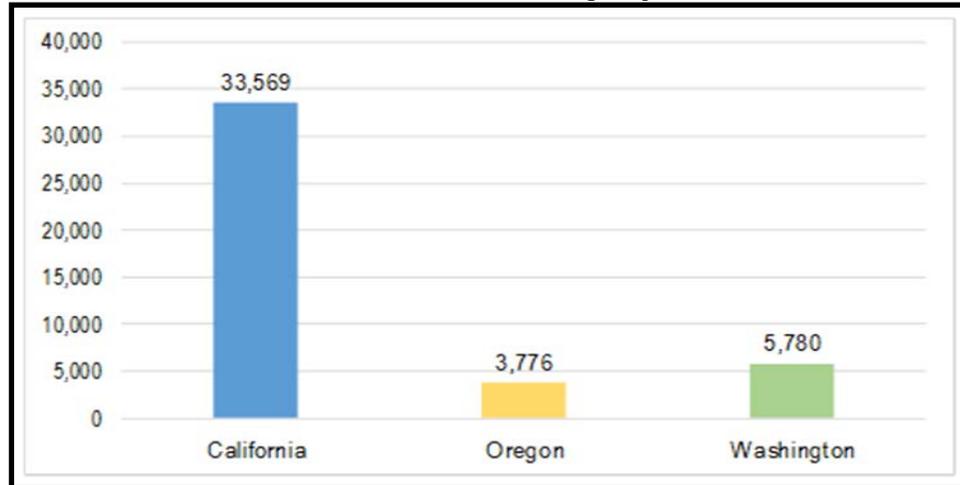
What is the West Coast Marine Mammal Stranding Network?

The National Oceanic and Atmospheric Administration's (NOAA) West Coast Marine Mammal Stranding Network (Stranding Network) was established in the early 1990's under the Marine Mammal Protection Act (MMPA). NOAA has jurisdiction over whales, dolphins, porpoises, seals and sea lions. Members of the network respond to marine mammal stranding events along the California, Oregon, and Washington coast and are part of a nationwide network. The Stranding Network is composed of cooperating scientific investigators and institutions, volunteer networks and individuals. Other organizations that are involved are wildlife and fisheries agencies and state and federal law enforcement, as well as zoos and aquariums. Participants are trained in systematic data collection and are experienced in handling a variety of marine mammal stranding related tasks.

How is marine mammal stranding data collected?

Every year there are thousands of reports of stranded marine mammals along the West Coast. Data collected from marine mammal strandings by our Stranding Network members are submitted for inclusion in a [national database](#) to establish baseline information on marine mammal communities and monitor their health. The data provided in this document were compiled from the national database administered by the [NOAA Marine Mammal Health and Stranding Response Program](#). The data below represent confirmed stranding events along the West Coast from 2007 to 2016.

West Coast Marine Mammal Strandings by State (2007-2016)



Why is the Stranding Network and the data collected important?

The Stranding Network's goal is to facilitate collection and dissemination of data, assess health trends in marine mammals, correlate marine mammal health with available data on physical, chemical, environmental and biological parameters and coordinate effective responses to unusual mortality events. When marine mammals show signs of disease or other health issues they may be signaling changes in the marine environment that might have significant implications for the overall health of our ocean ecosystems. We also provide education and outreach to reduce negative interactions between marine mammals and the public and raise awareness of marine life in our communities.

What is done with the data after it is collected?

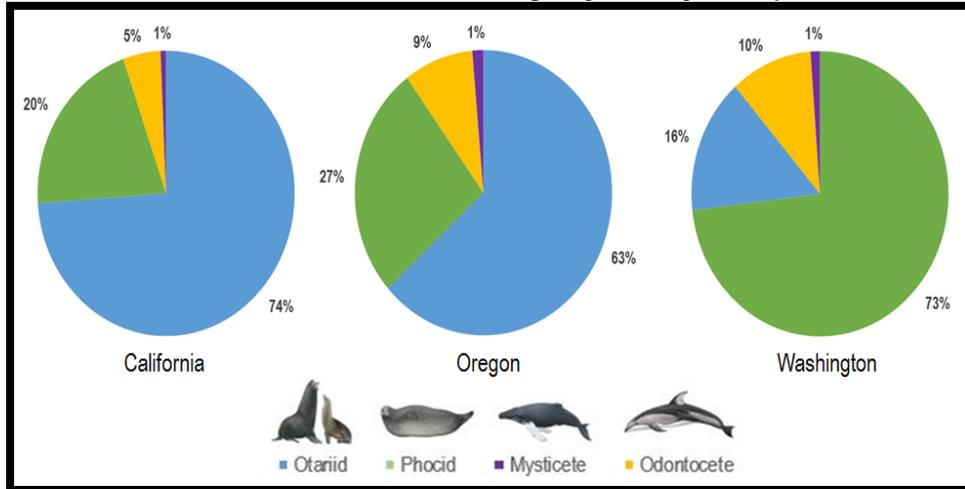
Many of our Stranding Network partners use their data for long-term research studies and submit articles for publication. Over 300 of these publications are featured on our NOAA West Coast Region website and cover a range of topics such as: baseline stranding information, anatomy and physiology of marine mammals, diseases, contaminants, cause of death and human interaction cases, unusual mortality events and Southern Resident Killer Whale stranding cases. To view the list of publications please visit our website at:

http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/stranding_network_publications.html

What types of marine mammals strand along the West Coast?

Forty three different species of marine mammals can be found along the West Coast. These species are broken down into family groups. Mysticetes are baleen whales (e.g. Humpback whales), Odontocetes are toothed whales (e.g. Common dolphins, Harbor porpoises, Killer whales), Otariids are eared fur seals and sea lions (e.g. California sea lions, Northern fur seals), and Phocids are earless seals (e.g. Harbor seals, Northern elephant seals). As you can see in the graph below, there are differences between the family groups and where they strand along the West Coast. Some of these differences can be explained by where breeding and nursery areas are for specific species. For example, Otariids such as California sea lions breed almost exclusively in California, so it's not surprising to see an increased percentage of Otariid strandings in California. Phocids, such as harbor seals have very healthy populations in Washington, and 3,000 to 5,000 Harbor seal pups are born in the state each year.

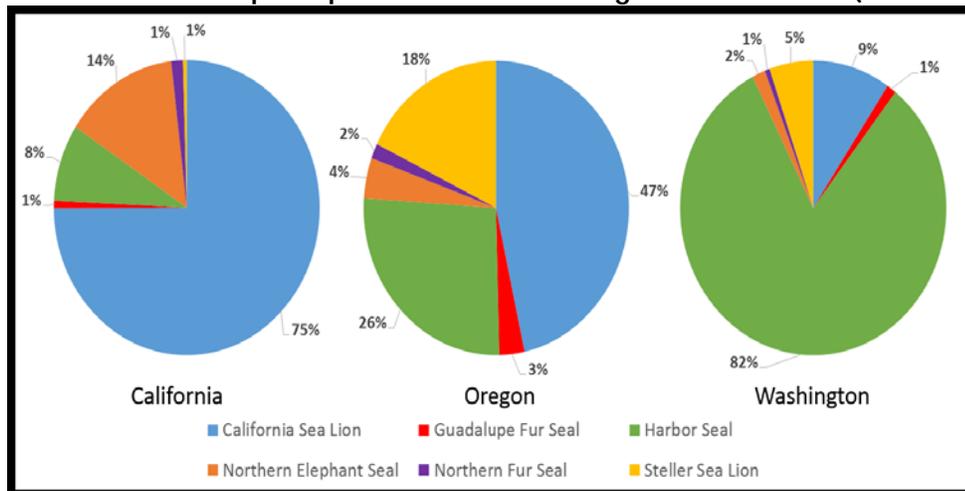
West Coast Marine Mammal Strandings by Family Group (2007-2016)



What pinniped species strand in the West Coast Region?

Pinnipeds include both family groups, Otariids and Phocids. The six most common [pinniped species](#) to strand along the West Coast include; California sea lions, Steller sea lions, Northern fur seals, Guadalupe fur seals, Northern elephant seals, and Harbor seals.

Most Common Pinniped Species to Strand along the West Coast (2007-2016)

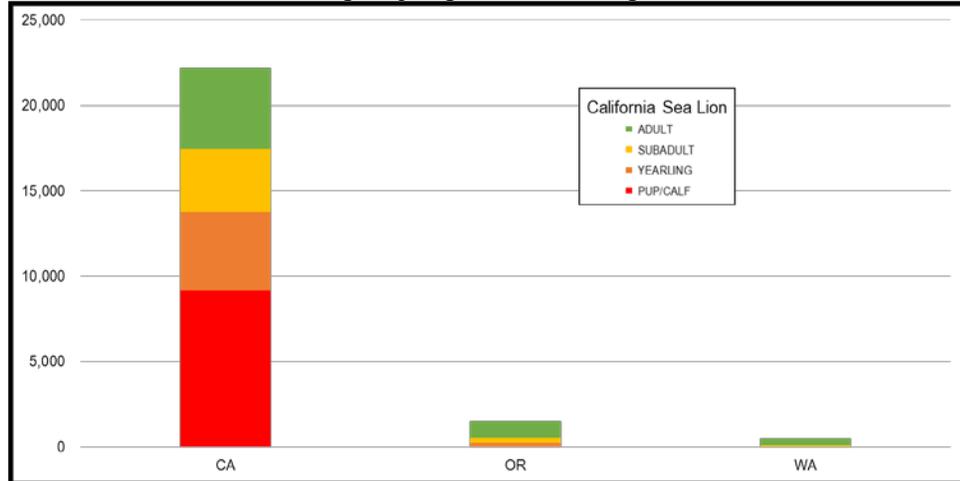


What age classes of pinnipeds strand along the West Coast?

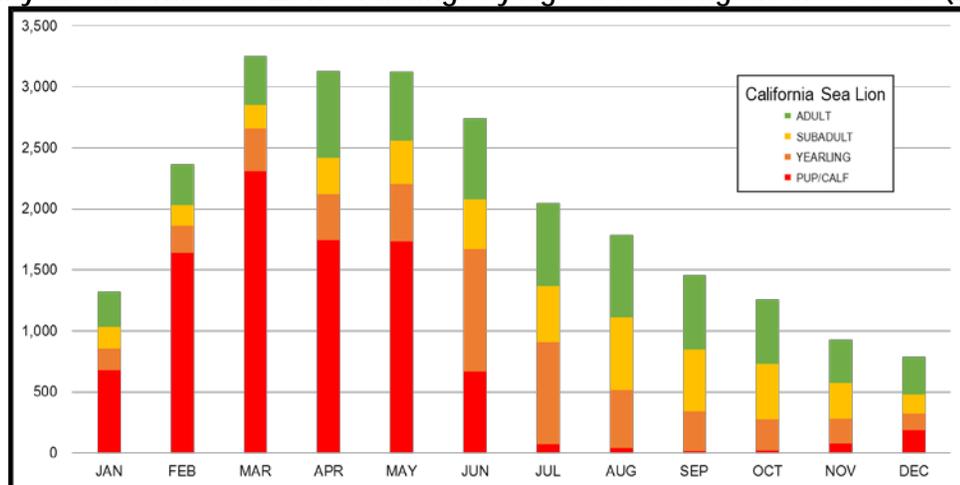
As you can see in the graphs above, there are significant differences in the proportions of the species that strand in each state. If you look at this data by age class, the majority of pinniped strandings occur when animals are pups or yearlings so the location of the stranding are often linked to breedings areas. Harbor seals are born throughout the entire West Coast and 70% of Harbor seals that stranded were pups. If we look at the mortality rate of Harbor seals in Washington, as an example, Washington Department of Fish and Wildlife reports that up to 50% of the pups born will not survive their first year of life. Contributing factors to Harbor seal pup mortality within this first year are: conditions associated with fetal development or premature birth; disease; predation by shoreline predators or domestic dogs, infection; dehydration; or starvation. If we look at California sea lion and Northern elephant seal strandings in California, where both species breed and give birth, the pup and yearling age classes together make up the highest percentage of

strandings (59% and 94% respectively). The majority of California sea lions are born on San Miguel Island in the Channel Islands. The estimated number of California sea lion pup births at San Miguel Island increased 7% between 2015 and 2016 to 19,767. Estimated early pup mortality (13.3%) and mortality to 3 months of age (18.2%) were low but within normal mortality levels ([Marine Mammal Lab](#) data).

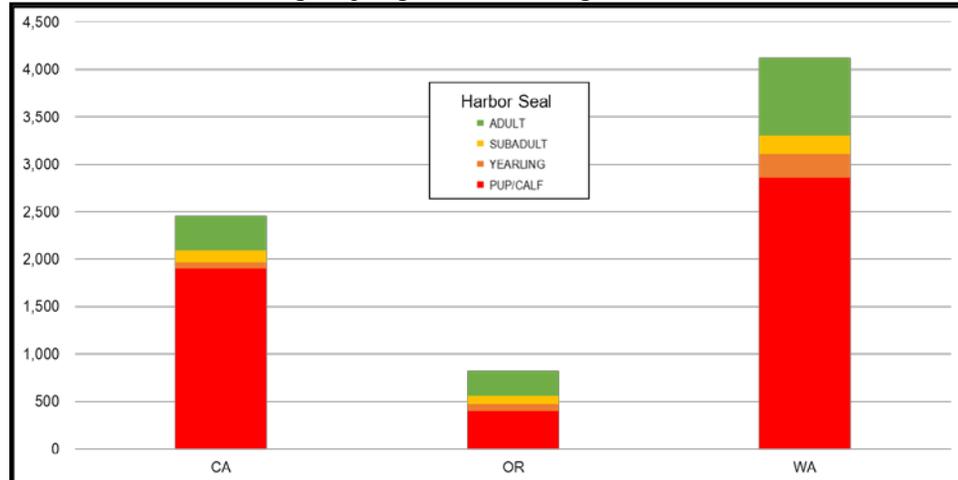
California Sea Lion Strandings by Age Class along the West Coast (2007-2016)



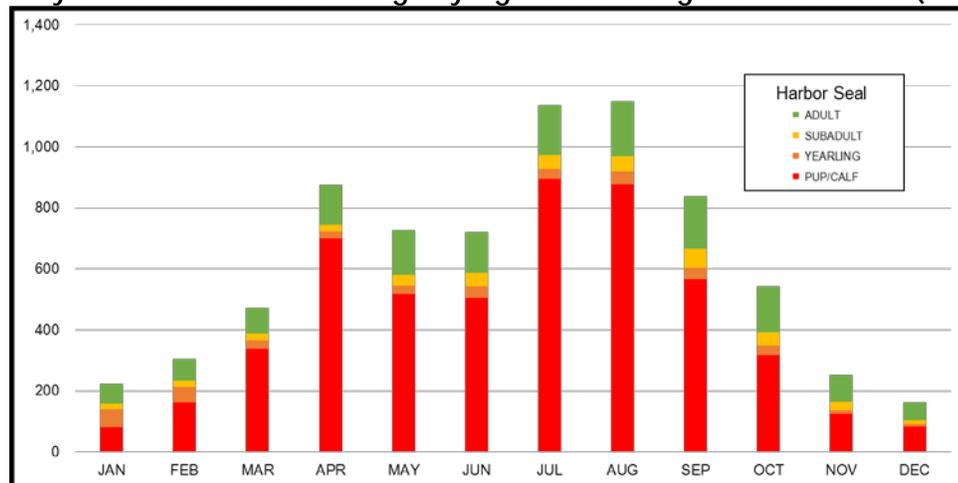
Seasonality of California Sea Lion Strandings by Age Class along the West Coast (2007-2016)



Harbor Seal Strandings by Age Class along the West Coast (2007-2016)



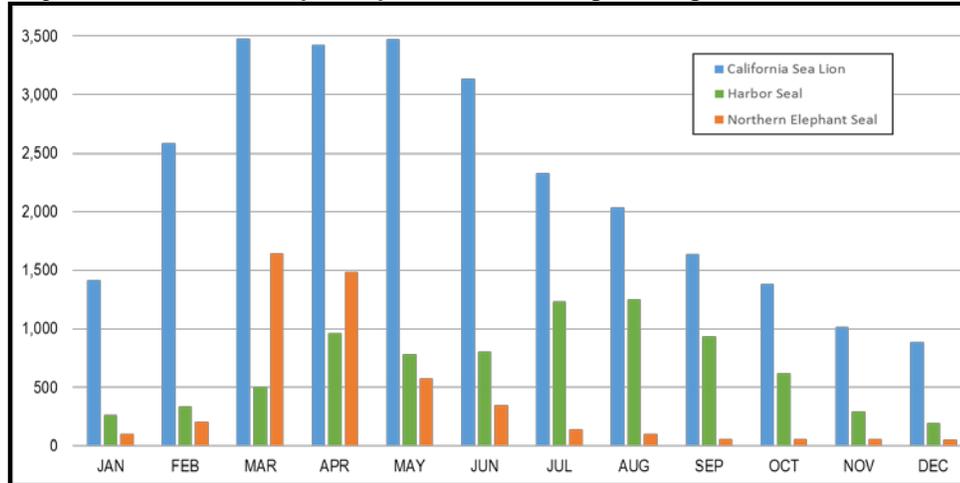
Seasonality of Harbor Seal Strandings by Age Class along the West Coast (2007-2016)



When do pinnipeds strand?

The majority of pinnipeds are stranding during pupping season or directly after they are weaned. As explained above, the majority of pinniped strandings occur when animals are pups or yearlings and the cause of stranding is typically malnutrition, disease, separation from attending female, and human interaction. Malnutrition may be caused, in some cases, if the newly weaned pup is not effectively foraging for food, causing starvation. For example, California sea lions are born from May through July on San Miguel Island and are weaned by 8 months (some exceptions apply, some pups may stay with the attending female for years). During the most recent California sea lion [Unusual Mortality Event](#) pups were being weaned early due to a change in the availability of sea lion prey, especially sardines, a high value food source for mothers nursing pups. Consequently, in the graph below, a large spike of strandings occurred approximately 6 months after the pups were born (March, April, May and June of the following year). You can see a similar trend in Harbor seals; pups are born in California from January through March with a peak of strandings occurring in April. As Harbor seal pupping advances up the coast in Oregon (April – May) and then into Washington (April – August) the stranding peaks continue and then decrease in October – December as pups have been weaned and are foraging on their own.

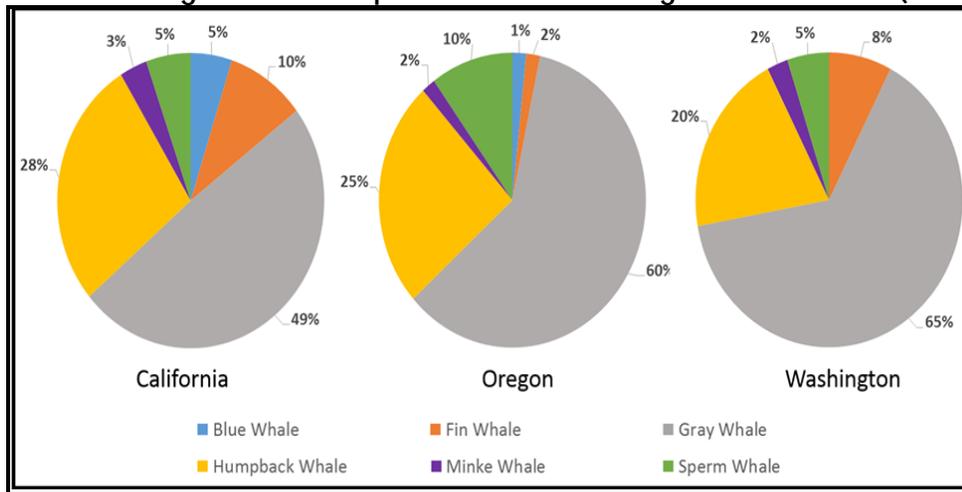
Seasonality of Common Pinniped Species Strandings along the West Coast (2007-2016)



What cetacean species strand in the West Coast Region?

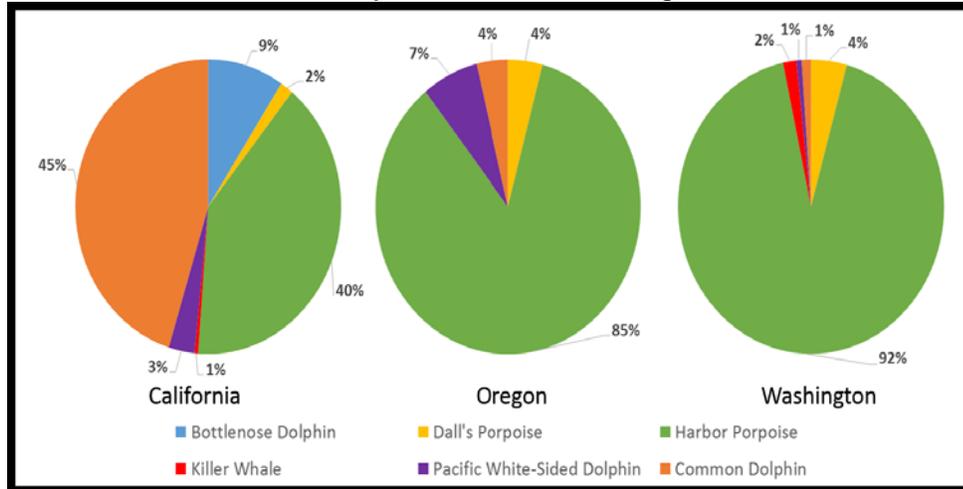
Cetaceans are broken into two family groups, Mysticetes and Odontocetes. The six most common [large cetacean](#) species to strand in the West Coast Region include; Blue whale, Fin whale, Gray whale, Humpback whale, Minke whale, and Sperm whale. The most likely species to strand in all three states are Gray and Humpback whales, which can be explained by their coastal presence and increase in population along the West Coast over the past several years.

Most Common Large Cetacean Species to Strand along the West Coast (2007-2016)



The six most common [small cetacean](#) species that strand along the West Coast are Dall's porpoise, Harbor porpoise, Common dolphin (short and long beaked), Bottlenose dolphin, Killer whale (includes all ecotypes), and Pacific White-sided dolphin. The most likely species that strand in Oregon and Washington are Harbor porpoise, which can be explained by their coastal presence and increase in population over the past several years.

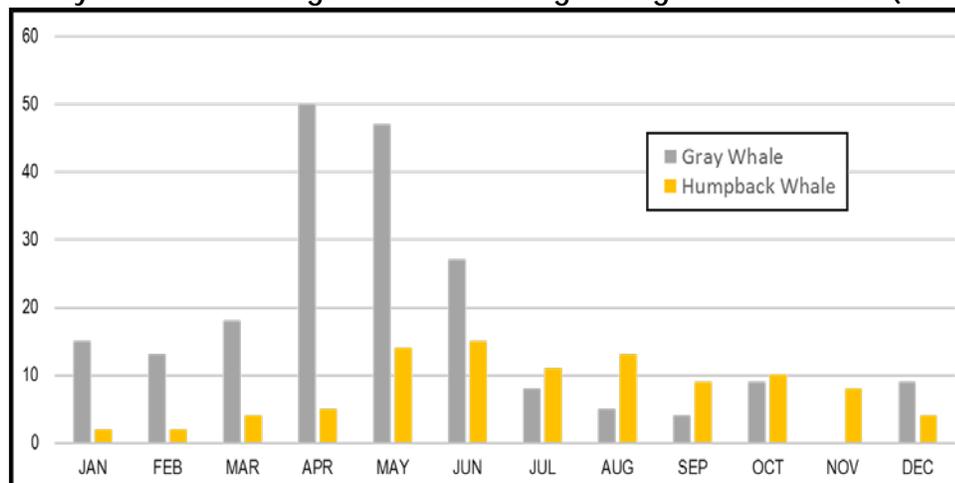
Most Common Small Cetacean Species to Strand along the West Coast (2007-2016)



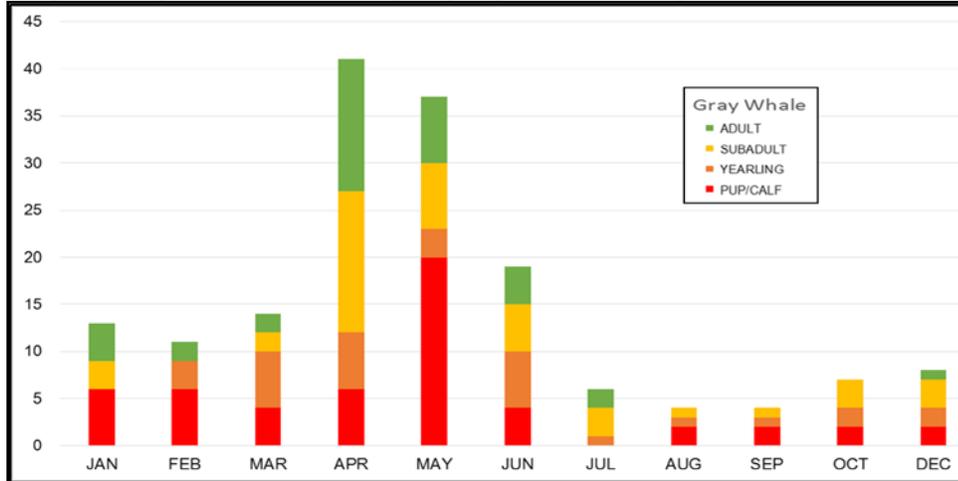
When do cetaceans strand?

Some seasonal stranding trends are easily seen when plotting the data for Gray whales and Harbor porpoise. Gray whales are coastal animals that migrate very close to shore and can be seen throughout the year. Between October and February the species migrates south along the West Coast and then returns north between February and July. The Stranding Network responds to the most Gray whale strandings in April, May and June, which coincides with the migration north. Harbor porpoise are also a coastal species and are found in waters no deeper than 300 meters. The majority of strandings happen in the summer months of July and August and occur during or right after calving season.

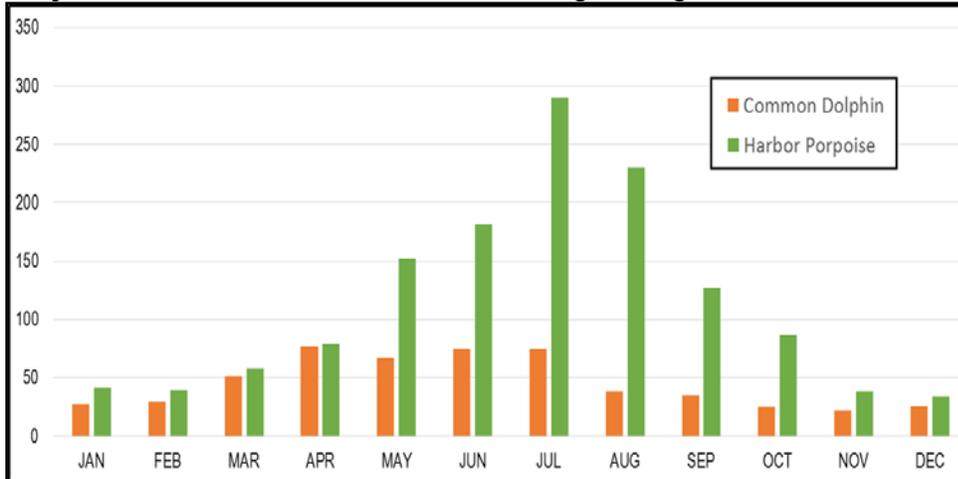
Seasonality of Common Large Whale Strandings along the West Coast (2007-2016)



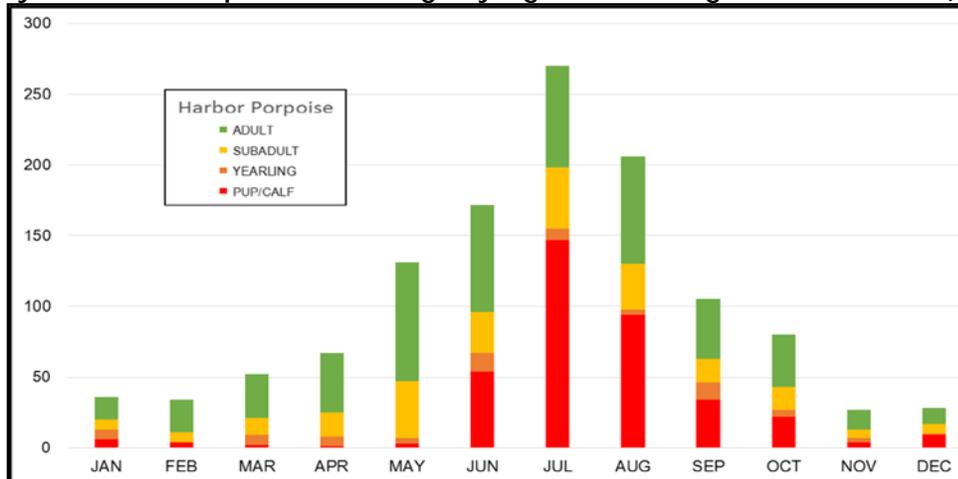
Seasonality of Gray Whale Strandings by Age Class along the West Coast (2007-2016)



Seasonality of Common Small Cetacean Strandings along the West Coast (2007-2016)



Seasonality of Harbor Porpoise Strandings by Age Class along the West Coast (2007-2016)

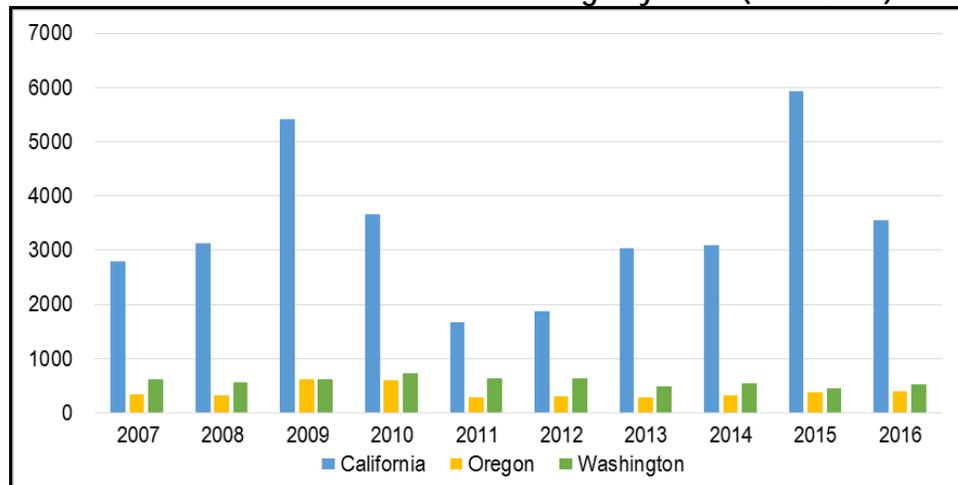


How many marine mammal strandings have there been in the past 10 years?

In California, Washington, and Oregon there have been approximately 43,125 reported marine mammal strandings. Washington and Oregon have remained consistent with an average of 578 and 378 marine mammal strandings per year respectively, but there is a lot of fluctuation in annual strandings in California. Certain years, such as 2009 and 2015 can be attributed to environmental conditions like El Nino or unusual mortality events. To learn more about these events please visit our website at:

<https://www.fisheries.noaa.gov/national/marine-life-distress/marine-mammal-unusual-mortality-events>

West Coast Marine Mammal Strandings by State (2007-2016)



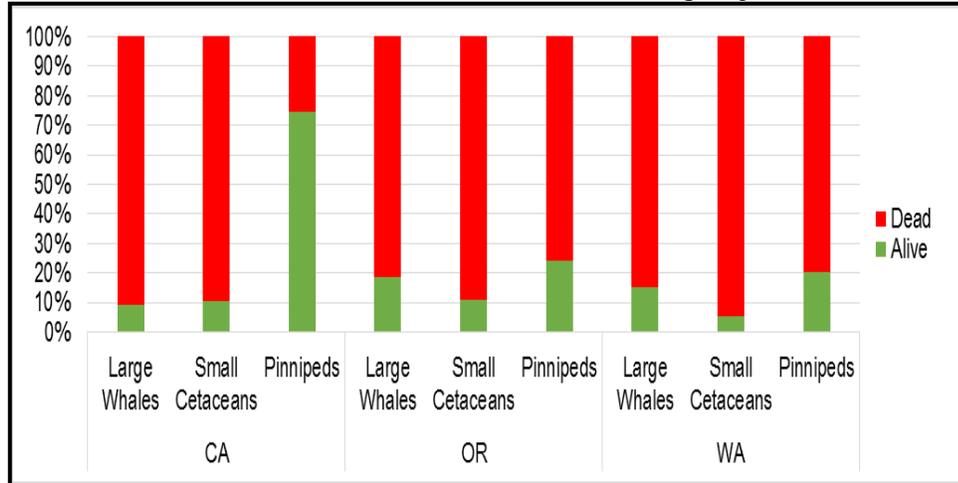
Why are there so many strandings in California compared to Washington and Oregon?

California has a higher number of reported strandings compared to Washington and Oregon for a number of reasons. First, the coastline is home to abundant marine mammal populations with a host of breeding grounds. Additionally, the beaches stretch long distances with easy coastal access to the large human populations residing along the coastline, and ideal weather conditions increase the number of beachgoers to report marine mammal strandings and sightings.

Are marine mammals stranding alive or dead along the West Coast?

Both. Because of the high stranding rates of pups and yearlings, the Network has developed differing response and rehabilitation capacities throughout the West Coast. As you can see in the graph below there is a higher percentage of animals that strand alive in California than in Washington and Oregon. This can be explained by looking at the age classes of animals that are stranding alive- these animals are typically pups or yearlings that are failing to survive on their own. Because more animals strand alive in California, the Stranding Network has more rehabilitation capacity there than in Washington and Oregon. Along the West Coast, there are [10 NMFS](#) authorized rehabilitation facilities that are available to provide clinical care to a limited number of sick or injured marine mammals. Our overall goal is to provide an appropriate response to ensure that animals have the best chance to survive on their own in the wild. Rehabilitation can be difficult and many will not survive; please be aware that rehabilitation does not guarantee the short or long-term survival of the animal and species.

Live vs. Dead: West Coast Marine Mammal Strandings by State (2007-2016)

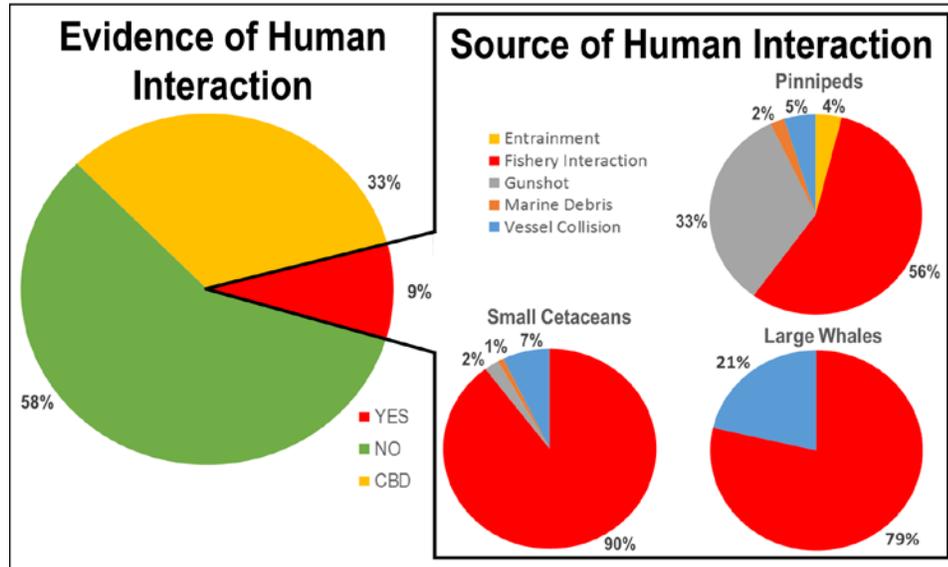


What can we learn from dead marine mammals?

By responding to dead marine mammal strandings, we can better understand the cause of death of the animal. Many times the cause of death cannot be determined because the animal is too decomposed to collect samples for analysis. When necropsies (animal autopsies) can be performed we can complete pathology to investigate diseases and parasites, collect reproductive biology data, life history information (what does the animal eat, how long does it live, how many offspring have they had, how old are they when they first reproduce), exposure to contaminants, and normal biology and physiology information. By performing necropsies, we can also document human interaction cases that include vessel collisions, entanglements, marine debris, fishery interactions and gunshot injuries. Nine percent of reported strandings have signs of human interaction. This information is collected to determine whether evidence of human interaction is present on the animal and if human activities contributed to the stranding event. However, it does not necessarily mean that human interaction was the cause of death in these cases. Confirmed cases of human interaction are included in the Stock Assessment Report for each species under the human caused mortality and serious injury section. To learn more please visit:

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>

Human Interaction Related Strandings in the West Coast Region (2007-2016)



What should I do if I find a stranded marine mammal?

If you come across a stranded marine mammal please report it to our 24/7 hotline at (866) 767-6114. If the animal is alive and onshore, please keep your distance and keep pets on a leash. For your safety and the health of the animals, we recommend staying 100 yards away from all marine mammals. All marine mammals are protected under the Marine Mammal Protection Act. It is against the law to feed or harass them, which includes disrupting important behaviors such as resting, feeding, nursing or breeding.

How can I help or support the Stranding Network?

We continue to seek new ways to support the stranding network so this vital and important work can continue to take place. You can make a difference; contact your [local stranding network](#) to see how you can get involved.