

Orcas

Orcas, or Killer Whales, are fascinating because they are beautiful and mysterious, and also because some Orcas are fierce predators of many marine mammals, including elephant seals and gray whales. Orcas are occasionally seen in this area, so you as docents may be asked about them; hopefully this information will help you answer visitors' questions. Most recently, Orcas have actually been spotted from the lighthouse at least three times in the last several weeks.

Classification and Range

Orcas may have earned the common name of “killer whale” as a translation of previous labels “whale killers” or “killers of whales”, labels which were given because Orcas prey on other whales, even the largest baleen whales. Strictly speaking, Orcas are not whales; they are in fact the world’s largest dolphin, but this includes them in the order Cetacea. They are in the suborder odontocetes, or “toothed whale”, having 10 to 14 pairs of large teeth in both the upper and lower jaws. Their scientific name is *Orcinus orca*.

These very social animals are found in every ocean. Because they have enormous bursts of speed and strength, and a highly developed social structure that lends itself to pack hunting, Orcas have no natural enemies as adults (not even great white sharks). They are indeed the supreme predators in the oceans; that is, the supreme predators across 71 percent of the planet. Most Orca populations have extensive ranges, although they will stay in small areas for long periods of time when prey is available. Some are seen in the same locations year-round. The movements of all populations are probably related mostly to shifts in abundance of prey, and prey specialization has led to suggestions of possibly even dividing Orcas into different species; this idea is discussed in more detail later.

Description and Behaviors

Orca’s robust body, with the large, prominent dorsal fin and highly contrasting areas of black and white, is very striking in appearance. Their jet-black upper bodies have white patches and a gray saddle behind their tall (up to 6 foot) dorsal fin. Scientists actually use the gray saddle pattern, along with scars and the dorsal fin size and shape, to identify individual Orcas. Adult males can be 30 feet long and at least 12,000 pounds, females can be 26 feet long and at least 8,400 pounds, and calves can be longer than 7 feet and about 350 pounds.

Both males and females reach sexual maturity between about 10 and 17 years. Mature females reproduce at an average interval of five years (but ranging from 2 to 14 years), and they seem to reproduce until about the age of 40. Males seem to live 50-60 years, and females 80-90 years. There is evidence they can live more than 90 years.

Remarkable behaviors such as breaching, spy hopping, lobtailing and flipper-slapping are often seen. Orcas can travel up to 34 m.p.h. They seem to prefer deep water, but they can also be found in the surf zone, shallow bays, and inland seas and estuaries.

Pod Structure

Single animals may be spotted, but close-knit family groups, or pods, of varying sizes are typical. Two or more pods may temporarily come together to form groups of 150 or more whales. Groups of closely related pods even develop their own unique dialects for communicating. Members of a pod usually stay together for life. In fact, it is possible that there may be no tighter bond than that which binds Orca families.

Researchers off the coasts of Washington, British Columbia, and Alaska have studied the pods in their areas for more than 30 years, and they have found that a typical pod can consist of several generations in a single matriline (i.e. the basic social unit led by the oldest female) or closely related matriline traveling together. On average, there are about a dozen whales in a pod, although pods with almost 60 animals have been seen. Pods with common ancestors and dialects are called a clan, and clans that regularly associate and share the same range are a distinct “population”, or community. Within communities there is virtually no aggression, and different communities largely ignore each other when their travels bring them close together.

Orcas as Predators

Killer Whales are said to be a very versatile predator, with one of the most varied diets of all cetaceans. Their prey can include sea turtles, otters, pinnipeds, sharks, rays, sirenians, whales, fish, seabirds, and even land mammals (moose and caribou when they are caught crossing water). Orcas seem to use cooperative hunting techniques whether hunting large prey or schools of fish, and they share prey among group members. There is evidence that older Orcas teach hunting techniques to younger members of a pod.

However, pods tend to specialize on a specific type of prey, and these differences in preferred prey seem to be one of the major characteristics that in fact might separate all Orca into differing, specialized subpopulations; different groups have apparently adapted to live off the resources within their home ranges. These differences in prey preferences, along with differing hunting behaviors, genetics, vocalizations, ecology, and even some physical differences, have led some scientists to propose that Killer Whales should be divided into different races, subspecies, and, possibly, even different species. The different types of Killer Whales do not mix or interbreed.

Two of the distinct groups (and possibly different species) recognized by the scientists in the Pacific Northwest are the so-called “residents” and “transients”. Killer Whales studied elsewhere in the world also seem to fall into distinct groups, but sometimes with different characteristics. Generally the Pacific Northwest “residents” prefer fish; in fact they feed each summer on runs of migrating salmon. Their range stretches for 3,000 miles along the Pacific coast from Alaska into California. Perhaps the best known and most studied pods are those of the “southern resident community”, which chase salmon in the areas of Puget Sound and southern Vancouver Island from early summer through late fall. No one knows definitely where these pods winter, but they seem to travel along the coast, and they have been seen as far south as Monterey Bay. These “residents” can be quite vocal with their complex calls, and they are usually in pods of 10 to 40 whales. The pods in this area have decreased in numbers since 1995, and their favorite food – Chinook salmon – is listed as threatened in Puget Sound.

The so-called “transients” are more unpredictable, silent stalkers that hunt for marine mammals. They seem to travel in small core groups of 3 to 10, but will form more fluid, larger associations at times. Their dorsal fins and saddle patches are the most noticeable differences from the “residents”, but they also have stouter jaws, different calls, and perhaps different social structures. They use different hunting strategies, based on the prey. When hunting an elephant seal, they try to prevent the seal from diving because the elephant seal can dive deeper than a Killer Whale. Killer Whales are faster swimmers, however, and their cooperative hunting strategies include having some whales go under the seal before it’s deep dive while other whales remain on top of the water to be ready

when the seal surfaces. Hunting sea lions requires a different strategy because Killer Whales must avoid the sea lion's sharp teeth; Killer Whales will try to sneak up on the sea lion and throw it out of the water, causing injury and death. "Transients" also prey on minke, fins, humpbacks, and even blue whales. It is very interesting that several species of whales, dolphins, seal and sea lions seem to know instinctively when a Killer Whale is a fish eater or mammal hunter; they will stay around one, and frantically avoid the other.

As hunters of marine mammals, the "transients" off our coast are the ones that prey on gray whales, especially gray whale calves, in April and May. Marine biologist Nancy Black has been studying Killer Whales in the Monterey Bay area since 1987, and according to her, transients hunt in larger, more vocal groups in April and May when stalking gray whales, and up to 32 Killer Whales can feed on one gray. They also share the prey without much fighting. To hunt for a gray, Killer Whales patrol the deep-water canyon off Monterey, which actually comes very close to shore, possibly listening for the clicks the grays make when vocalizing. Grays that try to cross over the canyon, rather than closely hug the coast, are particularly vulnerable. However, if a gray senses a Killer Whale in the area, it will immediately swim towards shore and stop exhaling big blows. Killer Whales hunt cooperatively as they swim faster and chase the grays. They will stalk mother and calf pairs in particular, trying to separate the calf from the protective and dangerous mother. Some Killer Whales then try to ram the underside of the calf to cause injury, or ram it out of the water, in an effort that can take hours. Others will keep the mother away, being wary of her dangerous flukes that can injure a Killer Whale. Killer Whales then drown the calf and feed on the blubber and/or tongue; the rest of the gray whale sinks and feeds other ocean animals. Because other populations of Killer Whale do not seem to prey on grays, it is thought this is a learned source of food, and it is in fact a very important food source. These battles between grays and Killer Whales take place closer to shore in the Monterey area than anywhere else, which is why they are witnessed most often there. Actually Killer Whales can be seen anytime of the year off Monterey as they hunt for a variety of marine mammals.

Not much is known about two other possible groups of Orcas along our eastern Pacific Ocean coast, the "off-shores" and the "LA pod". The "off-shores" seem to be unpredictable and farther out to sea, they travel long ranges and in large groups (100 or more), and there is evidence they eat sharks in addition to squid and fish. The "LA pod" is also unpredictable as to where and when it will be seen. They seem to associate in small numbers, have an apparent range from off the California coast to Mexico, and at least two have been witnessed eating a great white shark off the Farallon Islands.

The Future for Orcas

Much more is yet to be learned about these magnificent animals. It seems the more scientists study Orcas, the more differences they find in physical traits, travel patterns, social groups, calls, and learned behaviors. Although they are (overall) abundant in numbers, there are serious concerns about their future. Some of the pods have suffered dramatic losses, especially in the 1960's, when Orcas were captured by the aquarium industry. Some pods have dramatically decreased in numbers because of slaughter by humans fearing them as a competitor for fish, and countries that continue to hunt whales have seriously affected others. The levels of pollutants they carry are among the highest in any cetacean; it is not yet known what that means to their future well-being. Even the resident and transient populations in the Pacific Northwest are threatened – by pollution,

heavy ship traffic, reduced prey abundance, competition from the salmon industry, and, possibly, even changes in behavior and/or noise pollution caused by well intentioned whale watching operations and the noises of their boats. Hopefully, as passionate stewards of Point Reyes and the wildlife we see here, we will raise awareness about our environment, and we will also have a positive impact on the future of our oceans and all the animals in it.

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