

Killer Whale

Orcinus Orca

By: Anonymous author and Ashley Good

Killer Whales are not whales at all – they are actually the largest and fastest members of the dolphin family. The Killer whale is also known as Orca, Great Killer Whale, and Grampus, but its scientific name is *Orcinus Orca*. The term ‘Orca’ is derived from the Latin word *Orcinus*, meaning “of or belonging to the kingdom of the dead.” Despite their name and reputation, Orcas are not aggressive towards each other and do not attack humans. They live in all of the world’s oceans and seas, from the Arctic to the Antarctica making them the second most widely distributed mammal on earth after humans.

Killer Whales have long been a part of legends and myths. For many years, Killer Whales were not understood and were considered killing machines that would attack on a whim. Since the 1960’s, scientists have taken a concentrated effort to learn more about these amazing animals. The stories and misconceptions of the past have been replaced by genuine research to understand these animals and help them. Killer Whales are no longer considered to be wild, killing animals; they are now considered to be very complex and intelligent creatures.

Most of what we know about Orcas has been through the research of scientists in the Northeast Pacific Ocean, off the coast of British Columbia and Washington State.

Characteristics:

Killer Whales have the very distinctive countershading colouration of jet black backs and bright white fronts that makes them easy to identify. Countershading is a common and effective form of camouflage for sea life such as sharks, dolphins and whales who need to keep hidden from creatures looking down at them into the dark sea as well as up at them towards the light surface. They also have a conspicuous, elliptical white patch behind each eye and a gray marking in front of their dorsal fin known as a ‘saddle patch’. Killer Whales have a crescent-shaped blowhole near the top of their head and their mouth is filled with large cone-shaped teeth.

Killer Whales have a powerful tail that moves up and down propelling them through the water, a triangular-shaped dorsal fin on their back, and large paddle-like flippers. They have excellent eyesight both under water and on the surface and a thick layer of blubber that keeps them warm in icy cold waters.

The male Orca Whale is larger than the female. The males are usually 6-8 meters (19-25 feet) in length and weigh 3,600-5,400 kilograms (8,000-12,000 pounds). The male’s dorsal fin is upright and can grow up to 1.8 meters (six feet) tall. The largest Killer Whale

ever recorded was a 10 meter (32 feet) long male, weighing 10,000 kilograms (22,000 pounds).

The female Orca, on average, is 5 -7 meters (17-32 feet) long and weighs about 1,360 – 3,630 kilograms (3,000-8,000 pounds). The female's dorsal fin grows only half as tall as the male's to about 0.9 meters (3 feet) tall.

Baby Orca Whales are called calves and are born tail first. At birth they are about 2.5 meters (8 feet) long and weigh about 200 kilograms (440 pounds).

Life Cycle

Males reach maturity by 21 years of age. The average lifespan of a male Killer Whale is about 30 years. Females reach maturity by 15 years of age and have one calf at a time. An average female will give birth to 4 to 6 surviving offspring over a 25-year period. The average lifespan of female Killer Whales is about 50 years but some have been known to live for over 90 years.

Killer Whales have been known to mate throughout the year but a peak occurs in late summer far offshore in the relatively warm waters near the surface. The gestation period is somewhere between 16 and 17 months, with the majority of calves being born in the winter.

Killer Whales typically do not mate within their own pod and do not leave their pod to stay with their mate. The mating whales will only stay together for a short time before separating to go back to swim with their pod meaning that the father does not help raise his offspring but will help raise the offspring of the women in his pod.

When the female gives birth, she helps her newborn swim to the surface for its first breath. Within a short time of birth, the calves can swim independently. Calves nurse for about a year before learning to catch their own food. Killer Whales do not generally leave their mothers - they swim with their family group for their entire life.

Habitat

Orca Whales can be found in all of the world's oceans and most of the seas. They can live in tropical and arctic waters, coastal and deep oceanic waters. However, their distribution is patchy with the majority of Orca Whales living in cooler, continental shelf waters of mid to high-latitudes such as off the West Coast of British Columbia.

The Orca Whales that are being studied in the BC, Washington State, and Alaskan coastal areas belong to two main groups, the residents and the transients. These two groups live in the same waters yet they never interact. It is still believed the two groups are physically capable of interbreeding, however, genetic research has shown that this probably hasn't happened for thousands of years.

Resident whales have a strict, matriarchal social structure linked through the genealogy of the mothers. They are very vocal and tend to form large pods of 5 to 25 animals. Their pods generally stay in the same area during the summer months, with a range of about 400 kilometers (250 miles) along the coast. They are seen frequently during the summer as they often swim along the shore to feed on fish such as salmon and herring. In the winter most residents swim further offshore.

Transients have a looser social structure and tend to form smaller pods (1-7 individuals). They do not swim near the coast as often, maintaining a roaming distance as far as 1448 kilometers (900 miles) from the land. They tend to hunt for larger prey with a diet based mostly on other marine mammals such as seals and sea lions. Because their prey have ears and can hear them, transients vocalize far less frequently than resident killer whales. These two groupings of pods have very different hunting styles due to the type of prey each pod hunts.

Killer Whales hunt strategically within their pod with various members working as a team to trap the prey. For instance, transient whales have been known to swim up to one side of an exposed rock where seals or sea lions are resting in order to scare them into jumping into the water on the other side where another transient whale is waiting in silence. Transients typically share their catch whereas sharing has only been observed between a mother and her calf within the resident communities. An adult Orca Whale can eat about 227 kilograms (500 pounds) of food per day.

Killer Whales do not make seasonal migrations, but may travel hundreds of miles in search of food. The record speed for an Orca was 55km/h (34 mph) making them the fastest marine mammal.

Behaviour

There are two categories of noises made by the killer whale: Ecolocation and vocalizations.

Many whales, porpoises, and dolphins use ecolocation to obtain information about their surroundings. A rapid, high-frequency, sonar click is produced that echoes off objects in the whale's path. The killer whale can interpret that echo to "see" their surroundings. This behaviour is very advantageous as it means the whale can "see" their surroundings clearly day or night and in clear or murky water.

Vocalizations are most common for the resident whales. Each resident pod has its own unique set of underwater communication calls known as their *dialect*. The calls are made by repeating patterns of whistles, squeals, squawks, and screams and are used for social communication.

Resident Killer Whale behaviour has been divided into four classifications: Travelling, Resting, Foraging, and Socializing.

Travelling: Characterized by swimming in one direction at an average speed of 5 knots. Residents are usually quite vocal and often surface and dive in unison with other members of their pod.

Resting: Resting is a Killer Whale's version of sleep. The whales can not sleep like humans do because they need to be at least semi-conscious in order to swim to the surface to breathe. They accomplish this like other dolphin species by taking turns turning off each side of their brain. They use the "awake" side to continue swimming and breathing while allowing the "asleep" side to rest and then they switch. Resting behaviour is easily identifiable as the whales slow down, travelling at less than 2 knots. Frequently, the entire pod will clump closely together with children surrounding their mothers and they will all rest at the same time. It is beautiful to watch as all the whales in the pod, which can be over 20 individuals, will surface in unison, taking a few breaths before diving underwater for 3-5 minutes. The whales are generally silent while resting. Periods of resting can last anywhere from less than an hour to over 7 hours with an average duration of about 2 hours. It has been estimated that the whales spend about 13% of their time resting.

Foraging: The most common of Orca behaviours is foraging which encompasses the time spent eating or looking for food. The whales will spread out to cover a larger area but remain travelling in the same general direction with the other members of the pod. Eco-location clicks can often be heard and Residents tend to vocalize frequently where as the Transients are silent until they catch their prey after which the successful pod of transients produces quite a bit of noise in apparent celebration. While the duration of this behaviour varies considerably depending on the availability of food, the killer whale spends an estimated 65% of its time foraging.

Socializing: Socializing is used to describe the physical interactions and displays of the Orca. A whole pod can socialize simultaneously or a small group may decide to socialize while others forage or rest. Not surprisingly, socializing probably represents a form of play and tends to be more vigorous and frequent for the juvenile whales than for the mature whales.

The following are examples of common socializing behaviours:

- **Spyhopping:** The Orca comes to the surface bringing its head completely out of the water. This behaviour is for scanning the shoreline for prey, keeping in contact with other whales, or checking for boats or other objects on the water's surface.
- **Breeching:** The Orca Whale leaps out of the water and lands with an enormous splash. This behaviour may be used to surprise prey or for fun.
- **Lobtailing:** The Killer Whale slaps its powerful tail against the surface of the water the function of which may be to scare the salmon below into grouping closer together to facilitate foraging.

- Beach Rubbing: Some Orcas, British Columbia's Northern resident pods in particular, have been known to rub their body on small smooth pebbles on beaches. The exact purpose of which has not been determined but researchers have two main guesses 1. The removal of skin parasites 2. The whales like a good back massage as much as us humans.
- Logging: The Orca Whale rises to the surface of the water and floats motionless. This behaviour may simply be a way of lounging and relaxing for the Orca Whale.

Threats

It is virtually impossible to estimate the number of killer whales in the world because of their extensive distribution. For this reason individual clusters of whale populations are evaluated separately. For example in the Northeast Pacific the southern resident whales are endangered while the transient whales and the northern residents are threatened.

Killer Whales have no natural predators except humans. Until the 1980s, they were hunted commercially for their meat and oil. There was also widespread fear amongst fisherman that the whales were decimating their fish stocks and so killing them was actually encouraged in some areas. However, since the 1980s Canada and the United States have implemented laws to protect these great whales. Other countries still engage in whale hunting, but the hunters must follow government restrictions.

Non-natural threats include pollution and chemical contamination. The Killer Whale is the most contaminated marine mammal in the world. They consume large amounts of contaminated food which leads to PCB and synthetic chemical bio-accumulation in their blubber. The effects of this contamination can be a weakened immune system and impaired reproductive capacity.

Entanglement in fishing nets and collisions with boats and other water vessels pose additional threats. Moreover, the degradation of spawning habitats and over fishing has greatly decreased the whale's food supply.

What We Can Do To Help

- Dispose of toxic substances such as antifreeze, batteries, and paint responsibly. Municipalities usually provide special disposal facilities for these types of things, as putting them down drains can be extremely toxic as many cities, including Victoria and Vancouver, only minimally treat their sewage before releasing the effluents into the water where the Orcas swim.
- Go to see the Killer Whales in the wild. A Killer Whale in the wild lives on average 10 times longer than those in captivity.

- If going whale watching, make sure to go with an accredited commercial tour whose operators follow the regulations in place which minimize disturbance to the whales.
- If you come across whales while boating, stay at least 100 metres (328 feet) away approaching them from the side as opposed to head on or from behind. Keep noise levels down and limit the time spent observing them.
- Support fish conservation and the protection of fish habitats

Other Interesting Facts

Most of the Killer whales living in captivity are descendants of whales that were taken from the Northeast Pacific resident populations in the 1960s and 70s. Whales no longer need to be removed from the wild for aquariums and zoos because they can be successfully bred in captivity.

25% of the whales taken in the 60s and 70s for aquariums had bullet hole scars.

There has only ever been one reported attack of an Orca on a human. Ecolocation allows the whale to tell the difference between its food and humans. They can even tell if another whale is sick, pregnant, or hungry with ecolocation.

Where & When to view the Killer Whale

In North America Killer whales are frequently spotted in the summer months off the coast of British Columbia and Washington. Because of this, plenty of commercial whale watching operations can be found in Victoria and Vancouver, British Columbia as well as a few operating out of Seattle, Washington. Norwegian waters also have an abundant Orca population with an equally abundant number of whale watching companies operating mostly out of Tysfjord, Norway.

Bibliography:

Web Resources:

http://www.nationalgeographic.com/kids/creature_feature/0105/orcas2.html

<http://www.orcanetwork.org/>

<http://www.wdcs.org/>

<http://www.raincoastresearch.org/orca.htm>

<http://www.kidsplanet.org/factsheets/orca.html>

http://www.npca.org/marine_and_coastal/marine_wildlife/orca.asp

<http://www.bbc.co.uk/nature/wildfacts/factfiles/91.shtml>

<http://whales.gn.apc.org/dolphin7.shtml>

Book references:

Carwardine, Mark, **Whales Dolphins and Porpoises**, 2000, Dorling Kindersley Publishing, Inc.

Ford, John, Graeme Ellis, Kenneth Balcomb, **Killer Whales**, 2000, UBC Press.

Gordon, David G. & Chuck Flaherty, **Field Guide to the Orca**, 1990, Sasquatch Books.

Hand, Douglas, **Gone Whaling: A search for Orcas in Northwest Waters**, 1994, Simon & Schuster.

Heimlich, Sara & James Boran, **Killer Whales**, 2001, Voyageur Press, Inc.