

## **The Gray Whale Watch Program Of Oregon**

### ***Gray Whale: Eschrichtius robustus***

*By Gloria Koch, Oregon ZooGuide and Whale Watch Docent*

Every October, 18,000 Eastern Pacific gray whales begin leaving their summer feeding grounds in the Arctic seas above Russia and Alaska and migrate south along the western coast of North America to the warm-water Pacific lagoons along the coast of Baja, Mexico. There the pregnant mothers give birth (about a 12-month gestation period) and mating occurs. All the whales migrate, even the juveniles, as the winters in the Arctic are harsh. This migration is one of the longest of all mammals, averaging 6,000 miles one way.

### **The Gray Whale**

Gray whales grow to be about 45 feet long and weigh between 30 and 40 tons, with females being slightly larger than males. They live to an average age of 50. Their tail flukes measure as much as 10 feet across in mature whales and they do not have a dorsal fin. Instead, there is a series of 6 to 12 small humps along the dorsal ridge of the tail stock. They are medium-sized, baleen whales and, since they are the only whales that actually bury their mouths into the mud at the ocean bottom to get their food, they have the thickest baleen of all whales. Baleen is made up of thick, stiff hair-like strands of keratin which hangs from the upper jaw. The whale uses its tongue to force the mud and water out through the baleen, leaving the small animals that live in the water and mud behind, to be licked off the baleen with the whale's tongue and then swallowed. I always want to say "slurp" when talking about baleen.

Each whale must eat about 2,000 pounds of these tiny animals, called amphipods, per day, although the whales have been proven to be somewhat opportunistic in their feeding. The holes gray whales leave in the mud on each feeding dive are about the size of a standard desk and 1 foot deep. They are solitary creatures who live alone, but sometimes form short associations of 2, 3, or 4 whales during migration. Once they reach their destination, these small, temporary groups separate and go their solitary ways.

### **The Whale Watch Spoken Here Program**

Docents for the whale watch seasons are trained by the Oregon State Parks Department and instructors of marine biology, specializing in gray whales, from Oregon State University and the Hatfield Marine Science Center, an extension of OSU. Training is available 3 times a year and consists of a weekend of lectures and other activities. Our teachers are among the foremost experts on gray whales, including world renowned instructors and researchers Bruce Mate and Carrie Newell. Experienced volunteers are encouraged to attend training once a year to stay current with the latest in gray whale research. My husband and I took our initial training in 2006, with our first watch December of 2006. After training, a docent/volunteer is expected to complete 2 watch shifts. However, many of us have fallen in love with these amazing creatures and volunteer for many more shifts, sometimes daily during the watch period.

Twenty-eight sites along the Oregon coast are manned by these trained docents, who number about 250, during whale watch seasons. We are told it is the largest volunteer whale watching program of its kind in the world. In addition to counting the whales and helping coast visitors see them, we also teach, using interpretative techniques, the gray whales' behavior, migration, mating and birthing, feeding techniques and what it eats. We also talk to them about whale conservation and the International Whaling Commission that oversees commercial whaling. We have special stickers that we give visitors who have seen their first gray whale with us, upon which we write the date and where the whale was seen. It is a real joy to the heart to watch a wide-eyed child run to the table where our materials are set up, yelling, "I saw my first whale, I saw my first whale!" The parks system provides each site with a box of interpretative tools, including a sample of baleen, as well as other information that we use and put out for visitors to see and take home. At our own expense, my husband and I provide take-home information and printed learning activities sheets for children. Many adults ask for them also to take home to their grandchildren or teachers ask for a packet for their class. So our program is far reaching and hopefully the message is getting through to more and more people all the time about these wondrous creatures and how important it is to continue to work for their conservation.

In addition to counting whales, we also count visitors and maintain a visitor log asking people to put down the last name of their group, how many are in the group, and where they are from. Some days our log reads like a world map as visitors come from all over the world to see the whales. The watch sites during the winter and spring watch weeks are visited by as many as 40,000 tourists annually.

Watches are scheduled from 10:00 a.m. to 1:00 p.m. daily during watch weeks. Three hours may not seem like a long time but it can be very long when standing in the rain and cold winds on promontories along the coast. Our training also gives us tips in how to survive the cold weather of the winter watch season! Some days, especially during the winter migration, the weather is very bad, the visitors are very scarce, and the whales are too far out to sea to observe. At these times we huddle in our cars and jump out to talk to visitors when they drive up. Sometimes that “talk” consists of telling them that: “No, we haven’t seen any whales today, the weather is too bad, but we know they are out there!” Then we offer bundles of the activity sheets for the children through the barely open windows of the visitor’s car. Visitors are always glad to receive these for their children and the kids are happy with the crossword puzzles, word find sheets, and information sheets that teach them about gray whales, humpback whales, and orcas. We also have origami instructions and even gray paper for folding.

The 28 sites keep in touch by cell phone so if we are having a non-whale sighting day where we are stationed, we can tell the visitors where to go to more likely see the whales. We also encourage them to visit the new State Park Whale Center in Depoe Bay where there are videos running all day, artifacts to see and touch, indoor and outdoor viewing areas, and a small whale-related gift shop. The Whale Center is manned by State Park personnel as well as volunteers. The winter and spring whale watch weeks occur during school holidays and so are quite busy weeks for the Whale Watch Center.

### **Southern Migration**

While gray whales spend the summer feeding in the cold Arctic waters, they migrate south to the warm, shallow lagoons of Baja to give birth, mate, and avoid the harsh conditions of the Arctic winter. The migration is lead in mid- to late-October by the pregnant females who have been carrying their calves for 12 months. Following the females are the males, non-pregnant females, and juveniles. The whales swim continuously at up to 5 miles per hour and it takes about 2 or 3 months for them to reach Baja.

The peak of the southern migration passes along the Oregon coast the last week of December, the first week of January. At that time, approximately 30 whales per hour will pass any given point on the coast. Therefore, our winter watch week is the week between Christmas and New Years. By mid-February all the south bound whales have left Oregon waters.

The gray whale prefers shallow water as it is a bottom feeder and therefore travels close enough to shore along the coast of Oregon that it can be seen with the help of spotting scopes, binoculars, and even the naked eye.

During the southern migration, the gray whales swim off shore between half way to the horizon and at the horizon. At Boiler Bay Park, where my husband and I volunteer, the horizon is about 11 miles. Your first indication that there is a whale swimming past is the observation of a “blow.” The grays, as do all baleen whales, have 2 blow holes. They exhale the old air from their lungs, shooting a combination of air and water vapor 6 to 12 feet into the air, expelling the equivalent of about 106 gallons in a single blast from lungs about the size of a VW Beetle. Migrating whales have a distinctive dive pattern, making 3 to 5 shallow dives, blowing each time they come to the surface, about every 45 seconds. After these shallow dives, the whales dive deeper, going down for 3 to 5 minutes during which they cover between 300 and 400 yards. Then the series of 3 to 5 shallow dives before a deeper dive begins again. As a general rule, there will be a shallow dive and blow for every minute of the deeper dive. It is at the beginning of these deeper dives that you are most likely to see the whale’s back and tail fluke, a very exciting moment.

During this southern migration the whales do not eat. The small anthropoids which they eat in Arctic waters are not available off the coast of Canada, Washington, Oregon, California, and Baja Mexico. Whales also do not sleep. Although they have the largest brain of any animal on earth, they do not have an autonomic breathing system as we humans do. Therefore, to sleep or rest, the whale must keep half of his brain awake to tell his lungs to breathe while he lays at the surface of the water. Otherwise he would suffocate. This process is sometimes called logging. Rest periods generally last about 20 minutes. Also, they do not “haul out” of the water at night as other marine mammals do. They spend their entire lives in the water. A whale on the beach, or stranded, is an animal in trouble. We provide visitors with information on what to do if they sight an animal stranding.

### **Calving and Mating**

Gray whales reach sexual maturity between 4 and 11 years old. In the shallow, warm waters of the Pacific Baja lagoons of Mexico, the females give birth to a 15-foot, 2,000 pound calf. Most females bear a calf every 2 to 3 years. Born tail first, the high salinity content of the lagoons allows the calf to float easily, sometimes with a little help from mom, to the surface of the water to take his first breath. Within 30 minutes, they have learned to swim and no longer need to be supported by mother. Birthing begins about Christmas and continues until mid-February. The calves drink mothers' milk but they do not actually nurse. They drink about 50 gallons of 53% fat milk every day. The milk is very thick, about the consistency of yogurt, and the calf nudges the mother's mammary gland which caused the mother to pump the thick milk into the calf's mouth. During this period the adult whales are not eating and a mother whale can lose as much as 1/3 of her body weight by the time she returns to the summer feeding grounds, while the calf is putting on as much weight as 9 pounds an hour! Calves are weaned at about 7 to 9 months.

Other gray whales use this time in the Baja lagoons to breed. Breeding activity occurs between December and April; therefore it can continue during the northern migration. Females are not monogamous, and will copulate with several males, sometimes more than one a day. Other than mating season and the mother/calf relationship, the gray whales remain solitary and do not form family groups as orcas do. Therefore the word pod does not apply to gray whales.

### **The Northern Migration**

The northern migration begins about mid-February. It used to be thought that the gray whales did not start to eat again until they reached their summer feeding grounds in the Arctic seas. However, in recent years the whales have been observed doing feeding behaviors as far south as the Washington coast and the San Juan Islands. The males, newly impregnated females, and juveniles leave the birthing lagoons first. The peak of this migration reaches the Oregon Coast about the last week of March and the spring watch swings into action. Again, 28 sites are manned along the Oregon coast to help visitors see and learn about the gray whales. At this time, the whales are swimming closer to shore and viewing is better. They pass along the coast at the rate of about 15 an hour. Mothers whose calves were born early in the season can sometimes be seen at this time. The northern migration of these animals takes about 2 to 3 months.

The mothers with calves stay in the birthing lagoons until the calves are 2 to 3 months old. The calves are born without blubber and therefore must build up a thick layer of insulation before heading out into the open sea. They must also develop their swimming muscles, which the mothers help them to do by swimming them against the currents in the lagoons. By the time the calves are ready for the northern migration, they are about 19 feet long and weigh about 3,000 pounds. Calves stay with their mother until about mid-October, when the whole migration/birthing/breeding cycle begins again.

In the open ocean, the mothers swim with their calves very close to the shoreline, placing themselves between the calves and the open water. It is not sure why they do this; it could be to try to shelter them from rough water conditions or from harm. It is at this time that orcas appear along the Oregon coast. They swim south to prey on gray whale calves. Whalers used to refer to gray whales as “devil fish” because the mothers fight so hard to protect their babies from attack. However, orcas travel in pods and hunt like wolves. A targeted mother/calf

pair doesn't stand much of a chance against these odds. The mothers are not as strong on the northern migration due to the birthing and nursing process while being deprived of food for 6 months or more. Still, it has been documented that one mother gray whale has fought orcas up to eight hours to try to save her calf. Another tactic that has been observed is a mother gray whale trying to steer the calf toward shore and into more shallow water while fighting off the orca attack. Orcas do not like shallow water and they have been known to break off an attack if a mother and calf can reach shallow enough water. The only natural predators of gray whales are orcas and sharks.

The peak of the mother/calf northern migration passes along the Oregon coast about the last week of April, the first week of May.

### **The Oregon Summer Whales**

In summer, about 200 gray whales stay along the Oregon coast to feed rather than continue on to the Arctic seas. We call these the "smart whales." It was one of our instructors, Carrie Newell, who discovered that these summer whales feed primarily on mysid shrimp, tiny creatures that live in swarms at the base of kelp beds. Since the ocean floor at the Oregon coast is basalt, the whales do not dig in the mud for these shrimp. Instead, they turn on their sides and grab mouthfuls of the shrimp from the base of the kelp beds.

If you visit the mid-Oregon coast from mid-July to mid-September, I can almost guarantee, with a little patience, you will see at least one gray whale. The biggest mistake visitors make when trying to see whales in the summer is to look out at the sea instead of down to the base of the cliffs. Even in Depoe Bay, where the Whale Center is located, you may not see a whale if you do not get out of your car and look down along the cliff. Whales are frequently diving at the very edge of the rocks. Last summer they spent so much time in the port channel that the boats had to wait for the whales to move off before the boats could proceed out to sea.

The whale watch docents are on duty again the last week of September at 4 locations, including our favorite work site, Boiler Bay Park, about a mile north of the Whale Watch Center in Depoe Bay. In this area 56 whales regularly spend the summer. Each whale has spent enough time in the area for enough summers that they have been photo identified and named by Carrie.

This is the very best time to see the whales because they may feed for hours in the same location. When you can hear a whale blow, you know you are close! At this time of year they usually swim only 50 feet off the rocks. We have been known to drag picnickers away from their lunches by telling them there is a whale right below them. Sometimes they are so close to us at Boiler Bay that you cannot see the whale, only the blow! Sometimes we can look straight down on them on the bay side of the park. Their nearness to land gives us a "captive" audience while we educate visitors about the whales, what conservation measures are in place, and how our visitors can help the Eastern Pacific Gray Whale.

Although we stop counting whales and visitors at 1:00 p.m., we docents are also a captive audience of these magnificent beasts and it is not unusual for us to stay as much as 2 hours past our shift, basking in the warm summer sun and talking to visitors while we enjoy watching the whales ourselves. Our aquarium is not inside a building and you cannot find a bigger one for gray whales anywhere else in the world!

### **Gray Whale Status**

At one time there were three populations of gray whales. The North Atlantic population went extinct, possibly due to over hunting. The Eastern Northern Pacific population along the Pacific coast of North America was near extinction until whaling was prohibited by the International Whaling Commission in 1947. This population rebounded to estimated pre-hunting numbers of about 26,000. The number has since fallen back to about 18,000, what marine scientists believe is their natural, sustainable number. The Western Northern Pacific population along the coasts of Russia and Asia, where they are still hunted, numbers only 125 animals, only 25 of which are estimated to be reproducing females. The Japanese are leading whaling countries in trying to get the International Whaling Commission to legalize commercial whaling again.

The International Whaling Commission is made up of 50 member nations, one of which is the United States. It is the only regulatory body with the authority to manage the world's whale populations. It meets in a different host member nation annually. Most countries send 3 to 4 delegates to the annual meetings. Japan sends 50 to 60! Japan is pushing hard for permission to hunt whales, yet most of the whale meat they hunt ends up as dog food and is not consumed by humans. Still, they want the IWC to allow them to hunt whales as far away from Japan as Antarctica. The Australians are in an uproar according to Aussie friends.

Perhaps the biggest barrier to the resumption of commercial whaling is the whale watching tourist trade, which has become a billion-dollar industry around the world. Once you have experienced these awe-inspiring animals in their natural habitat, the idea of them being hunted commercially is abhorrent. A movement is afoot by whale watchers world wide to pledge to not take their tourist dollars to countries which seek to restart commercial whaling operations, countries such as Iceland; popular pro-whaling Caribbean resort destinations like St. Vincent and the Grenadines, Antigua and Barbuda, St. Kitts, St. Nevis, St. Lucia, and Dominica; as well as Japan.

Most former whaling countries have found that whaling is no longer profitable. Most of the products that were once obtained by commercial whaling have been replaced by alternate means.

In addition to commercial whaling, all whales are under threat because of what humans are doing to their natural habitats, such as offshore development and pollution of our oceans. What can we do to help? Keep our beaches and shores clean of litter. Use less plastic. Although recycling of plastic has increased in recent years, most of the plastic that cannot be made into usable products is ground up fine and dumped in the ocean. We need to teach more people about whales and share our feelings about whales with our government officials. To quote Bruce Mate: "We made them endangered. Now we must discover their needs and change our behavior to ensure their survival."

### **Whale Information Web Sites**

Continually updated information about whales can be found at:

The US Humane Society – [www.hsus.org](http://www.hsus.org) (then select marine mammals)

The International Whaling Commission – [www.iwcoffice.org](http://www.iwcoffice.org)

The National Oceanic and Atmospheric Administration – [www.noaa.gov/whales](http://www.noaa.gov/whales)

### **Bibliography**

Whale Watch Spoken Here, in conjunction with The US Department of the Bureau of Land Management, The Whale Watching Center at Depoe Bay, Oregon, The Hatfield Marine Science Center in conjunction with the Oregon State University, Oregon State Parks

<http://www.oregon.gov/OPRD/PARKS/WhaleWatchingCenter/index.shtml>

The San Luis Obispo County Office of Education

<http://www.slocoe.org/resources/whale>

The American Cetacean Society

<http://www.acsonline.org/factpack/graywhl.htm>