

Humpback Whale

MEGAPTERA
NOVAEANGLIAE



Baleen whale (filter feeder);
Two blowholes side-by-side



Long pectoral fins and a
knobby head



35-50 feet long



Group found in the Salish Sea known
as North Pacific humpbacks



Can weigh 50,000
to 80,000 pounds



Known for their intricate
songs and acrobatics



Feeding – higher latitudes
Breeding – lower latitudes (winter)



Prey types: krill, smaller schooling fish
(herring and anchovies)



Humpback Whale

WHAT'S IN A NAME?

This whale's Latin name, *Megaptera novaeangliae*, means "large-winged New Englander" or "big wing of New England". It references the whale's giant pectoral fins, which can reach 16' in length! This is roughly 1/3 of the whale's overall body length! Since humpbacks were first encountered off the coast of New England by European whalers, that is where the "New England" reference comes from.

The common name, "humpback", was also given to *Megaptera novaeangliae*. Do you know why? A hint can be found in the photo, below!



Humpback Whale

WHAT'S A BALEEN WHALE?

The most obvious difference between a toothed whale and a baleen whale is the way that they feed and what's inside their mouth.

Toothed whales (including all dolphins and porpoises) have teeth made of bone, like we do, and actively hunt fish, squid, and other sea creatures, including marine mammals and other small whales, dolphins, and porpoises. In many toothed whale species, their teeth help them capture, bite, and tear their food into smaller pieces before swallowing.

There are exceptions; certain species may only have teeth for part of their lifespan or not use them for feeding purposes, at all.

Baleen whales have several hundred plates that hang from their upper jaw, instead of teeth. These plates are made of keratin, the same substance as our hair and fingernails, and are used to filter food from the water or the sediment. Once the food has been trapped in the baleen plates, the whales will use their massive tongues to scrape the food off and swallow it. Humpback whales are gulp feeders, taking in huge amounts of water into their mouths for straining. The water is pushed out, trapping their prey in their baleen. Lunge feeding, as pictured, and bubble-net feeding are other techniques used to capture prey, though bubble-net feeding does not happen everywhere.



HERRING



Humpback Whale

WHAT'S A BALEEN WHALE?

In addition to the way that baleen whales feed versus the way toothed whales feed, baleen whales also have two blowholes while toothed whales only have one.

Both toothed whales and baleen whales are mammals and must come to the surface to breathe air, like humans do. They inhale and exhale air through their blowholes, located at their top of their heads.

While it isn't entirely known why toothed whales have one blowhole while baleen whales have two, when looking at the evolutionary aspects of the skull in toothed whales versus baleen whales, toothed whales' skulls are more asymmetrical. It is thought that toothed whales' melons (the organ at the front of the head that helps to direct echolocation clicks away from the body) may be the reason for this difference. In contrast, baleen whales' skulls are more symmetrical, as they are not echolocators and do not have a melon.



Humpback Whale

HISTORY OF WHALING

Humpbacks were targeted and killed for their meat, oil, and baleen in the late 1800s through the 1960s. These practices severely reduced humpback whale numbers, and in the North Pacific alone, were thought to be at less than 1500 individuals at the end of this era. Since their endangered listing in 1973, humpbacks have made a remarkable comeback. The population in the North Pacific Ocean has more than tripled in fewer than 20 years and was estimated at around 20,000 individuals in 2004-2006.

Currently, 4 out of the 14 distinct population segments worldwide are still protected as endangered, and one is listed as threatened. Some humpback populations were recently delisted, reflecting recovery being made in certain populations and areas around the world.



Humpback Whale

HUMPBACK “SONGS”

Humpback whale “songs” were first recorded in the early 1950s in Hawaii. Recent research found that their songs can last anywhere between 7-30 minutes, though they are often repeated for hours on end. These intricate callings can be heard from up to 20 miles away.

Only male humpbacks sing, and all males within a breeding ground sing the same song. Their songs are constantly evolving and changing, though the reason is a mystery.

The ability to sing is not something they are born with, rather they learn songs through cultural transmission, like people do. These songs are theorized to be possible courtship rituals but could also be used to establish relationships between males.



Humpback Whale

BEHAVIORS



TOP LEFT: “Spouts” - Humpbacks must surface to breathe; on their exhale they produce a balloon-shaped “spout” that can reach 10-13 feet high.

TOP RIGHT: “Fluking” or “Diving” – Humpbacks will surface repetitiously to breathe after prolonged time under water. The next long “down” time will usually occur after 4-8 subsequent breaths and is indicated by the whale’s “flukes” above the surface, caused when positioning the body for a deeper dive.

LEFT: “Pectoral Slap” - Humpbacks, and many other whales, use their pectoral flippers to slap the surface of the water, creating sounds that can carry for miles underwater. It is thought to be a form of communication but the exact meaning for the behavior is unknown.



Humpback Whale

BEHAVIORS



TOP LEFT: “Lunging” or “Lunge Feeding” - occurs when the whale drives schools of forage fish toward the surface, lunging with its mouth open to trap them inside.

TOP RIGHT: “Breaching” – Humpbacks will project their bodies up and out of the water to come crashing back down on the surface. One theory is that breaching is a long and short-range mode of communication, though exactly what they’re communicating is unknown.

LEFT: “Cartwheel” - Humpbacks can also project their bodies in a spiraling, forward motion, resulting in what appears to be a cartwheel. Like breaching, this can be used as a form of communication, and possibly a foraging behavior, as well.

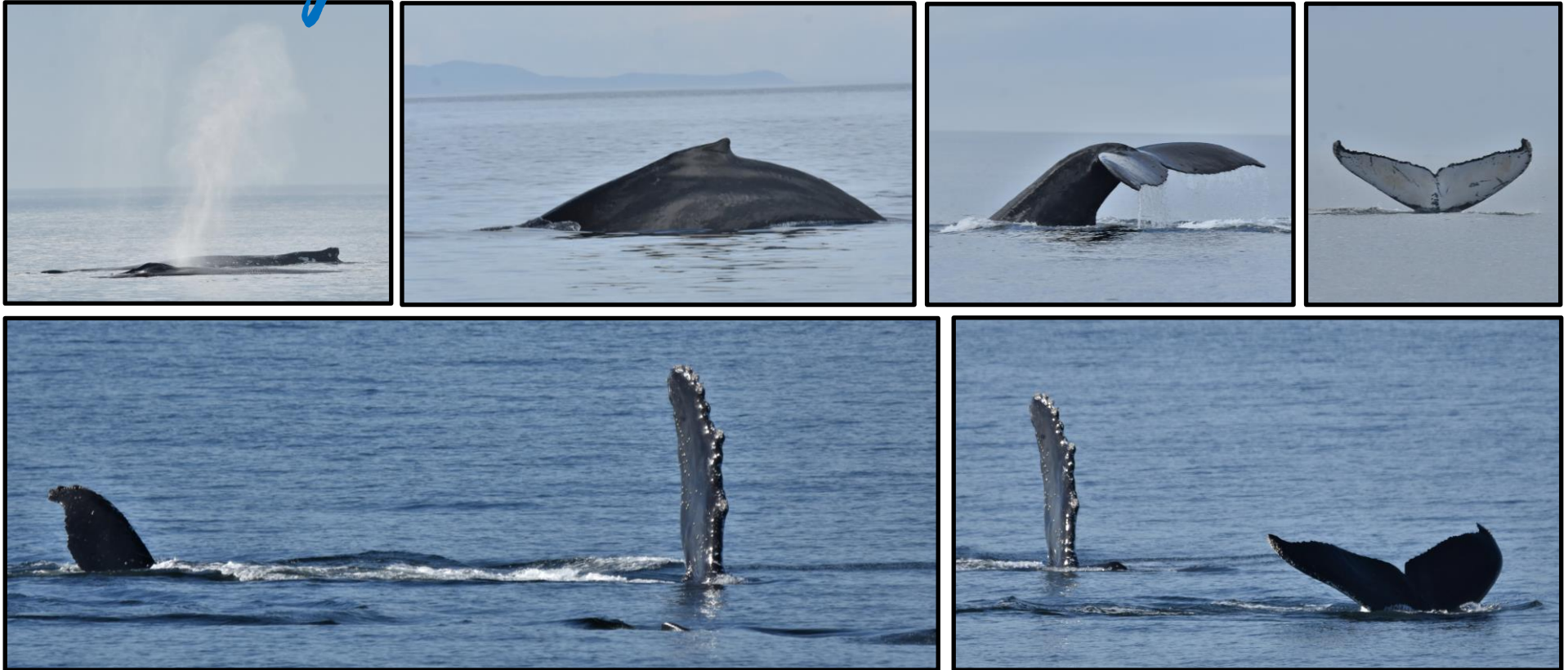


BALEEN WHALES OF THE SALISH SEA



Humpback Whale

COMMON BEHAVIORS SEEN ON THE WATER IN THE SALISH SEA



TOP ROW: A SUCCESSION OF WHAT IT LOOKS LIKE TO SEE AN ACTIVE HUMPBACK IN THE SALISH SEA

TOP LEFT PHOTO: Blows or Spouts – the visible exhalation of a humpback whale as the animal breaks the surface for a breath; **TOP 2nd PHOTO:** Surfacing – after the exhalation and inhalation of air the humpback may submerge itself, revealing its back and dorsal fin in the process. Often, a few successions of breaths are taken before seeing the last behavior. **TOP 3rd & 4th PHOTO:** Fluking or Diving – when a humpback positions to take a deeper dive, showing the underside of the tail flukes before disappearing beneath the surface.

BOTTOM PHOTOS: Possible Feeding, possible percussive communication (if slapping the pec fin on the surface). In these photos, the humpback is pictured on its side, the pectoral fin and the right side of the tail showing above the water. The whale could be filtering water to find food, or could be communicating with the second humpback that was with him (second individual in last photo).



Humpback Whale

NORTH PACIFIC HUMPBACKS

North Pacific humpbacks return annually to the same feeding areas. Individuals then migrate to lower latitude areas in the North Pacific around Mexico, Central America, Hawaii, and the Western North Pacific to “winter.” While there is an intermixing of individuals between breeding and feeding areas, there are some general migratory patterns exhibited. For instance, humpbacks feeding off the California coast tend to migrate to Mexico and Central America, while humpbacks feeding in Southern British Columbia and Washington waters migrate to Hawaii, Mexico, and Central America.

Each of these four wintering areas contain individuals that are now considered Distinct Population Segments under the US Endangered Species Act. The Central American and Western North Pacific segments are considered endangered, the Mexican segment is threatened, and the Hawaiian segment has been delisted.



Humpback Whale

MIGRATION:
SPECIAL POINTS
OF INTEREST

Humpback whales are migratory, spending the winter at breeding and birthing areas in lower latitudes, then traveling to spend the summer in cold water feeding areas in higher latitudes. Their migration is roughly 6,000 miles roundtrip.

There are special areas of interest along the humpback whale migration route. The yellow markers indicate these areas, and the following pages provide more details.

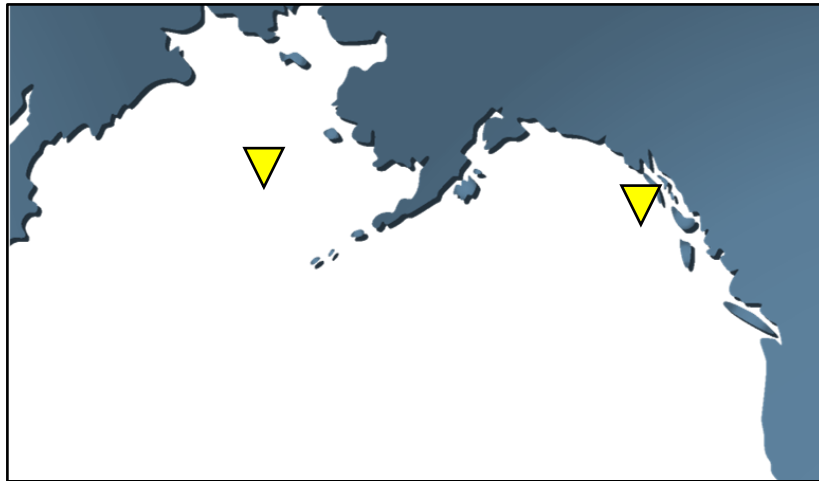


From left to right: Bering Sea; Hawaii; Southeastern Alaska; The Salish Sea, Washington & British Columbia; Central California; Cabo San Lucas, Puerto Vallarta (the Bay of Banderas), Revillagigedo Islands, Mexico; Costa Rica and Panama, Central America.



Humpback Whale

MIGRATION:
ALASKA –
BERING SEA



Thousands of humpback whales in the North Pacific migrate to Alaska each spring/early summer. They gather in large numbers from southeast Alaska to the Bering Sea to feed on krill and forage fish.

Humpbacks have many expandable throat pleats that allow them to take in up to 15,000 gallons of water each mouthful!

In some areas of Alaska, humpbacks are known for an impressive foraging technique called bubble net feeding.

Several individuals work cooperatively to trap fish inside a screen of bubbles, then lunge feed together to feast on the fish.



Humpback Whale

MIGRATION:
SALISH SEA
WASHINGTON & BC

Once common in the Salish Sea, humpbacks were commercially extirpated from the region when more than 5,000 individuals were killed by whalers in the early 1900s off Washington and British Columbia. Since being protected from whaling in 1966, humpbacks began a slow return to the Salish Sea but have now dramatically increased in the last ten years.

The Washington-British Columbia feeding group contains a mix of endangered, threatened, and non-endangered humpbacks. Some identified individuals have been coming back to this area for many years.



Humpback Whale

MIGRATION:
CENTRAL
CALIFORNIA COAST

Hundreds of humpback whales feed off the coast of central California, particularly Monterey Bay, from April to early December. They filter krill and small schooling fish, such as sardines and anchovies, through their baleen plates and can eat up to 1.5 tons per day. They often lunge feed by bringing their heads completely out of the water and can be very active and acrobatic. At the end of the feeding season, most of these whales migrate to Central America where they will breed and give birth in the warm waters there.

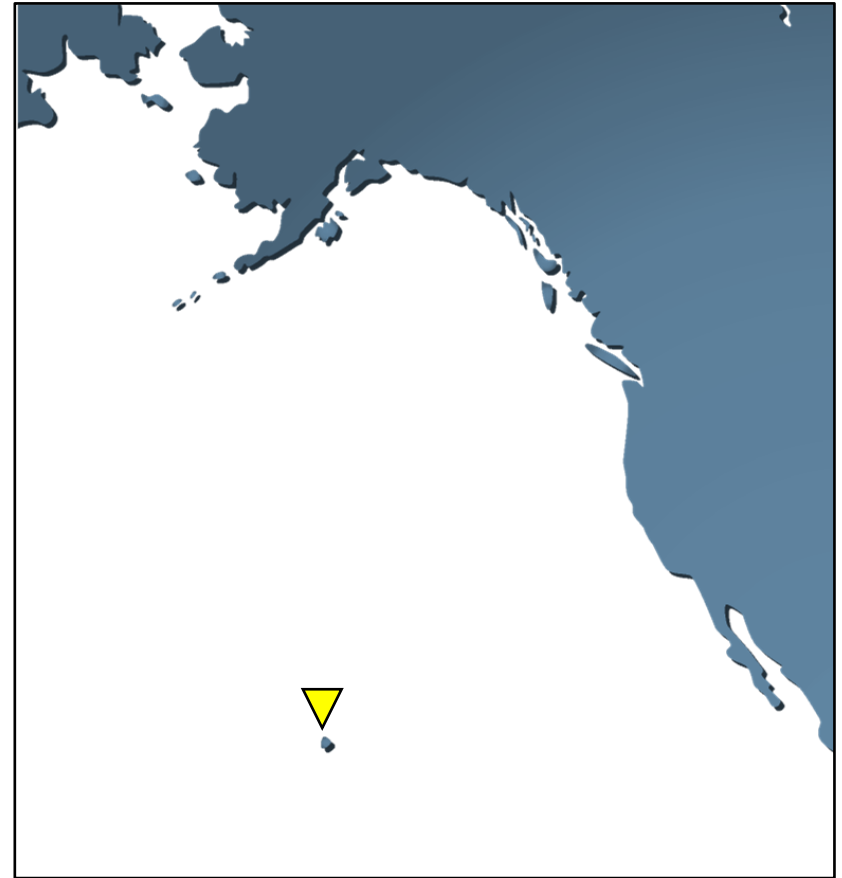


Humpback Whale

MIGRATION:
HAWAII

Each winter thousands of humpbacks gather around the Hawaiian islands to mate and give birth. Females generally have a single calf every two-three years. Newborns are 10-15 feet long and weigh up to one ton. Often, a male “escort” hoping to mate will accompany a mom and calf. Other males may try to displace the escort, and competition groups of several whales are an exciting sight throughout the breeding season.

Congress designated the *Hawaiian Islands Humpback Whale National Marine Sanctuary* in 1992, where the whales would be protected in their winter breeding grounds. Maui, Lanai, Molokai and Kaho’olawe are popular viewing spots during breeding season. As humpback numbers have increased, they are spreading out toward the other Hawaiian islands.



Humpback Whale

MIGRATION:
MEXICO &
CENTRAL AMERICA

Cabo San Lucas, Puerto Vallarta and the Bay of Banderas, Revillagigedo Islands: With shallow, protected bays, the marine environment around Cabo and the Bay of Banderas are ideal breeding and birthing grounds for this threatened population of humpback whales. December and January see the most breeding and birthing activity here. Mother-calf pairs dominate the area during late season.

Central America: Further to the south an endangered population gathers in breeding grounds off Central America, particularly Costa Rica and Panama. This distinct population segment almost exclusively migrates to the US West Coast (primarily California) to feed.

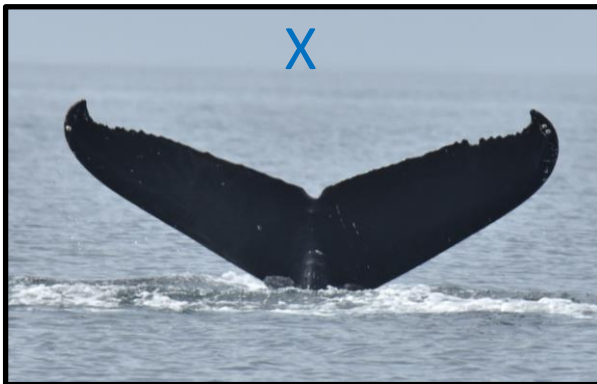


Humpback Whale

IDENTIFYING INDIVIDUALS

Humpback whales are identified as individuals by photographing the underside of their tail flukes. Each individual has unique markings and patterns that are different from one another. Humpbacks have a varying degree of white on their tails, and as such, are sorted into three different categories based on that percentage of white. Whales with mostly black tails (0-20% white) are known as “X” humpbacks. Whales with 20%-80% white markings on their tail are known as “Y” humpbacks, and whales with more than 80% white markings on their tails are “Z” humpbacks!

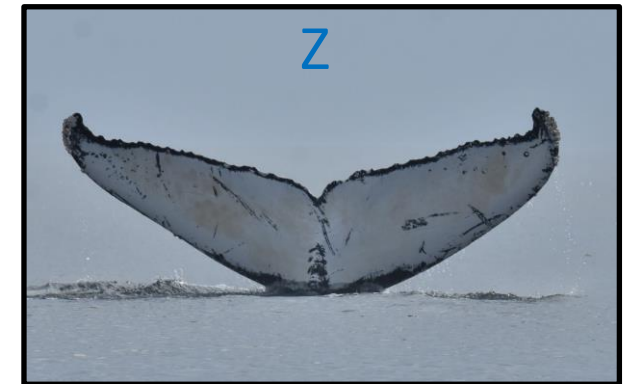
Sometimes, the unique patterns and markings inside the white areas, or divots along the trailing edge of the tail are considered when giving humpbacks their nicknames.



“TRIFECTA”
MMX0077



“CASPIAN”
CRC-15976



CRC-15307
*NO NICKNAME YET



Humpback Whale

INDIVIDUALS:
“BIG MAMA”



One of the humpback whales that started it all, Big Mama was first photographed in 1997 and has been returning faithfully to the Salish Sea since. She has brought at least 6 calves with her to the region including, most recently, “Beak” and “Pop-Tart.” “Big Mama” has been matched to the breeding grounds off Maui and is traditionally one of the first whales to arrive each spring. In addition to her underside fluke, Big Mama can be identified by signature bumps on the right side of her dorsal fin and the top of her tail as well.



● BALEEN WHALES OF THE SALISH SEA ●



Humpback Whale

INDIVIDUALS:
"BIG MAMA"



Humpback Whale

INDIVIDUALS:
“TWO SPOT”



“Two Spot” is a confirmed male seen regularly in the Salish Sea since at least 2015. While most of the local humpbacks feed in the Strait of Juan de Fuca, “Two Spot” is one of a few that seems to frequent Puget Sound near Whidbey Island. “Two Spot” has a reputation for being overly curious, often approaching vessels closely to do some people-watching. While thrilling, it's important that local boaters not try to seek out close encounters with humpback whales and always follow the Be Whale Wise guidelines!



Humpback Whale

INDIVIDUALS:
“TWO SPOT”



Humpback Whale

INDIVIDUALS:
“SCRATCHY”



“Scratchy” was first documented in the Salish Sea in 2016. While relatively new to the area, “Scratchy” has already become a local celebrity, making fast friends with local whales and whale watchers alike, thanks to his or her outgoing personality. The name "Scratchy" was given to this individual due to the extensive scratches and tooth marks on the tail, resulting from encounters with killer whales. “Scratchy” seems to enjoy feeding on the shallow banks to the west of Whidbey Island and his or her spouts can occasionally be seen from shore.



Humpback Whale

INDIVIDUALS:
“SCRATCHY”



Humpback Whale

INDIVIDUALS:
“HEATHER” AKA
“KILLER”



Like “Big Mama”, “Heather”, also known as ‘Killer’, is one of the most well-known humpbacks in the Salish Sea. Some call her "Heather", a name given because of a marking on the left side of her fluke that looks like the letter "H". Others call her "Killer" because of a marking on the left side of her fluke that resembles a killer whale's dorsal fin. “Heather” is mom to BCX1068 "Split Fluke" (2006), and CRC-16008 "Dalmatian" (2015). She is also a grandmother to “Split Fluke’s” two calves, CRC-16820 "Valiant" (2017) and a new calf born in 2019. While “Heather” has not yet been matched to breeding grounds in Mexico, her children and grandchildren have been, leading us to believe she almost certainly travels there in winters as well. “Heather” is known for being a loyal companion. During her summers in the Salish Sea, she tends to travel with the same whales year after year.



Humpback Whale

INDIVIDUALS:
“HEATHER” AKA
“KILLER”



Humpback Whale

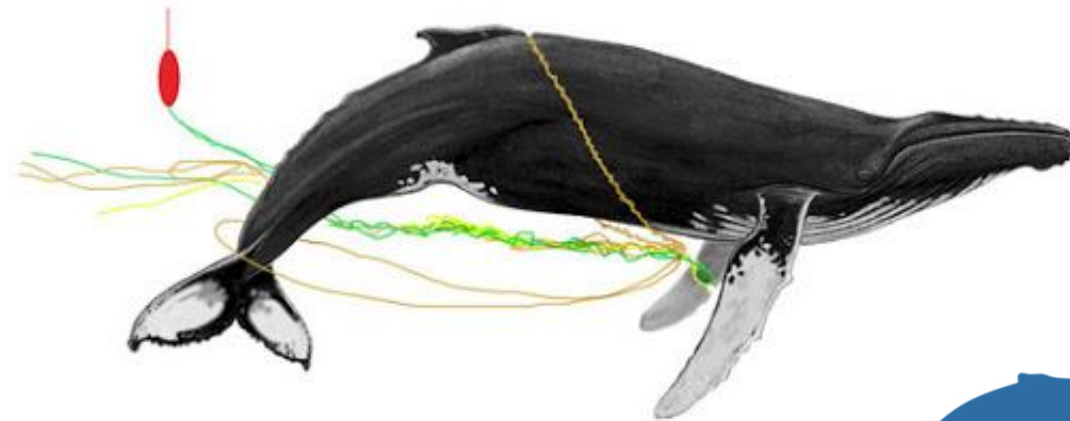
THREATS & HOW YOU CAN HELP

- **Entanglement in Fishing Gear**

Humpback whales can potentially become entangled in moorings, traps, pots, or gillnets. Once entangled, if the whale cannot escape the gear, s/he may drag and swim with this gear, oftentimes over long distances. Dragging fishing gear can ultimately result in fatigue, compromised feeding ability, and/or a severe injury, all which may result in a premature death. Photo evidence of many individual humpbacks exhibiting certain patterns of scarring suggests that most humpback whales will experience entanglement over the course of their lives. Some will escape the gear on their own. However, the portion of whales that become entangled and do not survive is unknown. Crab pots are becoming an increasing threat along the west coast to all baleen whales.

- **How you can help:** Report an entangled whale so a professional team can respond and assist! Entanglement Reporting Hotline: 1-877-SOS-WHAL or U.S. Coast Guard VHF channel 16. If possible, collect any derelict fishing gear you can find and dispose of it properly. If you are unable but know where the gear is located, call the Derelict Gear Hotline: 1-800-853-1964. If you're a fisher yourself, **always return to collect any fishing gear that you've used**. Research potential alternatives in the type of gear used for different fishing practices (there are scientists and technicians currently working on alternatives: <https://www.forbes.com/sites/ariellasimke/2020/03/14/new-pop-up-fishing-gear-could-reduce-whale-entanglements/#207a5f0f2b8c>).

- Report whale sightings to Orca Network: 866-ORCANET or info@orcanetwork.org



Humpback Whale

THREATS & HOW YOU CAN HELP

- **Vessel Strikes**

Inadvertent vessel strikes can injure or kill humpback whales. Humpbacks are vulnerable to vessel strikes throughout their range, but the risk is much higher in some coastal areas with heavy ship and vessel traffic.

- **How you can help:** Purchase American-made items. Shop local and sustainably. These two actions can help reduce the amount of freighters that cross the ocean to bring goods to North America. Also slow your vessel to 7 knots and keep a close watch when transiting through areas where humpback reports have recently been made, or where whales are sighted often.

