



# Humpback whale

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The **humpback whale** (*Megaptera novaeangliae*) is a species of baleen whale. One of the larger rorqual species, adults range in length from 12–16 metres (39–52 ft) and weigh approximately 36,000 kilograms (79,000 lb). The humpback has a distinctive body shape, with unusually long pectoral fins and a knobby head. An acrobatic animal known for breaching and slapping the water with its tail and pectorals, it is popular with whale watchers off the coasts of Australasia and the Americas. Males produce a complex song lasting 10 to 20 minutes, which they repeat for hours at a time. Its purpose is not clear, though it may have a role in mating.

Found in oceans and seas around the world, humpback whales typically migrate up to 25,000 kilometres (16,000 mi) each year. Humpbacks feed only in summer, in polar waters, and migrate to tropical or subtropical waters to breed and give birth in the winter. During the winter, humpbacks fast and live off their fat reserves. Their diet consists mostly of krill and small fish. Humpbacks have a diverse repertoire of feeding methods, including the bubble net feeding technique.

Like other large whales, the humpback was and is a target for the whaling industry. Once hunted to the brink of extinction, its population fell by an estimated 90% before a moratorium was introduced in 1966. While stocks have since partially recovered, entanglement in fishing gear, collisions with ships, and noise pollution continue to impact the 80,000 humpbacks worldwide.

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## Humpback whale<sup>[1]</sup>



Size compared to an average human

## Conservation status



Least Concern (IUCN 3.1)<sup>[2]</sup>

## Scientific classification

Kingdom:	Animalia
Phylum:	Chordata
Class:	Mammalia
Subclass:	Eutheria
Order:	Cetartiodactyla <sup>[a]</sup>
(unranked):	Cetacea
(unranked):	Mysticeti
Family:	Balaenopteridae
Genus:	<i>Megaptera</i> Gray, 1846
Species:	<i>M. novaeangliae</i>

## Binomial name

*Megaptera novaeangliae*

Borowski, 1781

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## Taxonomy

Humpback whales are rorquals (family Balaenopteridae), a family that includes the blue whale, the fin whale, the Bryde's whale, the sei whale and the minke whale. The rorquals are believed to have diverged from the other families of the suborder Mysticeti as long ago as the middle Miocene.<sup>[9]</sup> However, it is not known when the members of these families diverged from each other.

Though clearly related to the giant whales of the genus *Balaenoptera*, the humpback has been the sole member of its genus since Gray's work in 1846. More recently, though, DNA sequencing analysis has indicated the humpback is more closely related to certain rorquals, particularly the fin whale (*Balaenoptera physalus*), and possibly to the gray whale (*Eschrichtius robustus*), than it is to rorquals such as the minke whales.<sup>[10][11][12]</sup> If further research confirms these relationships, it will be necessary to reclassify the rorquals.

The humpback whale was first identified as *baleine de la Nouvelle Angleterre* by Mathurin Jacques Brisson in his *Regnum Animale* of 1756. In 1781, Georg Heinrich Borowski described the species, converting Brisson's name to its Latin equivalent, *Balaena novaeangliae*. In 1804, Lacépède shifted the humpback from the Balaenidae family, renaming it *Balaenoptera jubartes*. In 1846, John Edward Gray created the genus *Megaptera*, classifying the humpback as *Megaptera longipinna*, but in 1932, Remington Kellogg reverted the species names to use Borowski's *novaeangliae*.<sup>[13]</sup> The common name is derived from the curving of their backs when diving. The generic name *Megaptera* from the Greek *mega*-/μεγα- "giant" and *ptera*/πτερα "wing",<sup>[14]</sup> refers to their large front flippers. The specific name means "New Englander" and was probably given by Brisson due the regular sightings of humpbacks off the coast of New England.<sup>[13]</sup>

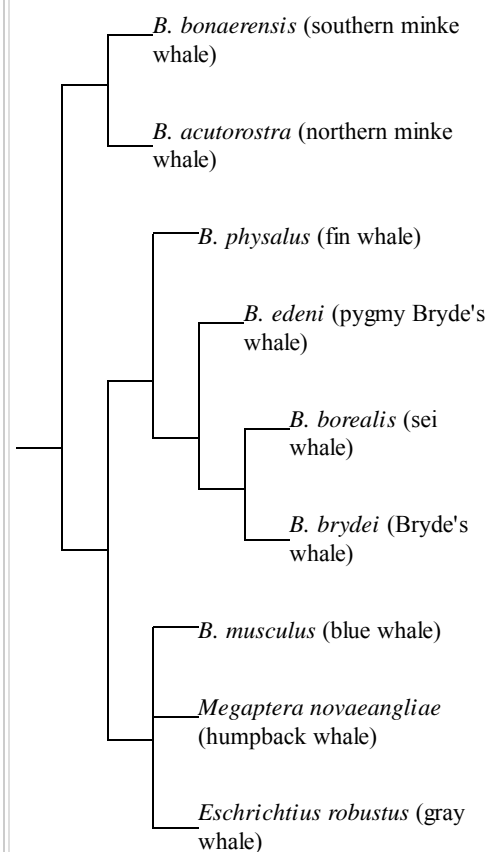
Genetic research in mid-2014 by the British Antarctic Survey confirmed that the separate populations in the North Atlantic, North Pacific, and Southern Oceans are far more distinct than previously thought. Some biologists believe that these should be regarded as separate subspecies of humpback whales,<sup>[15]</sup> and that



Humpback whale range

### Synonyms

- *Balaena gibbosa* Erxleben, 1777
- *B. boops* Fabricius, 1780
- *B. nodosa* Bonnaterre, 1789
- *B. longimana* Rudolphi, 1832
- *Megaptera longimana* Gray, 1846
- *Kyphobalaena longimana* Van Beneden, 1861
- *Megaptera versabilis* Cope, 1869



A phylogenetic tree of animals related to the humpback whale

they are all evolving independently.<sup>[16]</sup>

## Description

A humpback whale can easily be identified by its stocky body with an obvious hump and black dorsal coloring. The head and lower jaw are covered with knobs called tubercles, which are hair follicles, and are characteristic of the species. The fluked tail, which it lifts above the surface in some dive sequences, has wavy trailing edges.<sup>[17]</sup> The four global populations, all under study, are: North Pacific, Atlantic, and Southern Ocean humpbacks, which have distinct populations which complete a migratory round-trip each year, and the Indian Ocean population, which does not migrate, prevented by that ocean's northern coastline.

The long black and white tail fin, which can be up to a third of body length, and the pectoral fins have unique patterns, which make individual whales identifiable.<sup>[18][19]</sup> Several hypotheses attempt to explain the humpback's pectoral fins, which are proportionally the longest fins of any cetacean. The two most enduring mention the higher maneuverability afforded by long fins, and the usefulness of the increased surface area for temperature control when migrating between warm and cold climates.

Humpbacks have 270 to 400 darkly coloured baleen plates on each side of their mouths.<sup>[20]</sup> The plates measure from a mere 18 inches (46 cm) in the front to approximately 3 feet (0.91 m) long in the back, behind the hinge. Ventral grooves run from the lower jaw to the umbilicus about halfway along the underside of the whale. These grooves are less numerous (usually 14–22) than in other rorquals but are fairly wide.<sup>[20]</sup>

The stubby dorsal fin is visible soon after the blow when the whale surfaces, but disappears by the time the flukes emerge. Humpbacks have a 3 metres (9.8 ft), heart-shaped to bushy blow, or exhalation of water through the blowholes. Because humpback whales breathe voluntarily, the whales possibly shut off only half of their brains when sleeping.<sup>[21]</sup> Early whalers also noted blows from humpback adults to be 10–20 feet (3.0–6.1 m) high.

Newborn calves are roughly the length of their mother's head. At birth, calves measure 6 metres (20 ft) at 2 short tons (1.8 t) The mother, by comparison, is about 15 metres (49 ft). They nurse for approximately six months, then mix nursing and independent feeding for possibly six months more. Humpback milk is 50% fat and pink in color.

Females reach sexual maturity at the age of five, achieving full adult size a little later. Males reach sexual maturity at approximately seven years of age. Humpback whale lifespans range from 45–100 years.<sup>[22]</sup> Fully grown, the males average 13–14 m (43–46 ft). Females are slightly larger at 15–16 m (49–52 ft); one large recorded specimen was 19 metres (62 ft) long and had pectoral fins measuring 6 metres (20 ft) each.<sup>[23]</sup> The largest humpback on record, according to whaling records, was the female killed in the Caribbean; she was 27 metres (89 ft) long with a weight of 90 metric tons (99 short tons) although the reliability of this information is unconfirmed due to illogicality of the record.<sup>[24]</sup> Body mass typically is in the range of 25–30 metric tons (28–33 short tons), with large specimens weighing over 40 metric tons (44 short tons).<sup>[25]</sup> The female has a hemispherical lobe about 15 centimetres (5.9 in) in diameter in its genital region. This visually distinguishes males and females.<sup>[20]</sup> The male's penis usually remains hidden in the genital slit.

## Identifying individuals

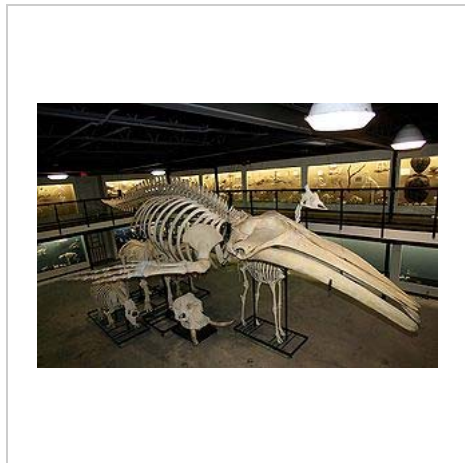


Young whale with blowholes clearly visible



Video of a young singing Humpback whale in the waters of Vava'u, Tonga

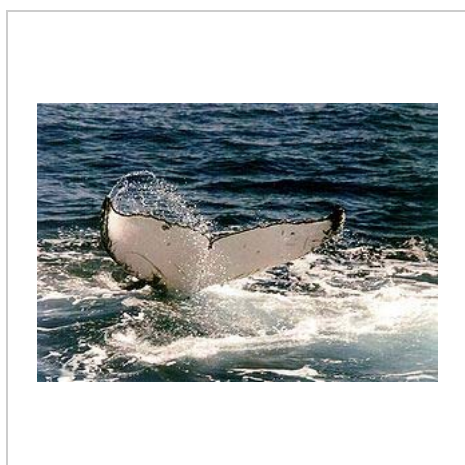
The varying patterns on the tail flukes are sufficient to identify individuals. A study using data from 1973 to 1998 on whales in the North Atlantic gave researchers detailed information on gestation times, growth rates, and calving periods, as well as allowing more accurate population predictions by simulating the mark-release-recapture technique (Katona and Beard 1982). A photographic catalogue of all known North Atlantic whales was developed over this period and is currently maintained by College of the Atlantic.<sup>[26]</sup> Similar photographic identification projects have begun in the North Pacific by Structure of Populations, Levels of Abundance and Status of Humpbacks, and around the world.



Humpback whale skeleton on display at The Museum of Osteology, Oklahoma City, Oklahoma



Mother and calf in Boston Harbor



A humpback whale tail displaying wavy rear edges



A tail from a different individual—the tail of each humpback whale is visibly unique.

## Life history

### Social structure

The humpback social structure is loose-knit. Typically, individuals live alone or in small, transient groups that disband after a few hours. These whales are not excessively social in most cases. Groups may stay together a little longer in summer to forage and feed cooperatively. Longer-term relationships between pairs or small groups, lasting months or even years, have rarely been observed. Some females possibly retain bonds created via cooperative feeding for a lifetime. The humpback's range overlaps considerably with other whale and



dolphin species—for instance, the minke whale. However, humpbacks rarely interact socially with them, though one individual was observed playing with a bottlenose dolphin in Hawaiian waters.<sup>[27]</sup>

## Courtship and reproduction

Courtship rituals take place during the winter months, following migration toward the equator from summer feeding grounds closer to the poles. Competition is usually fierce, and unrelated males, dubbed escorts by researcher Louis Herman, frequently trail females, as well as mother-calf dyads. Males gather into "competitive groups" and fight for females.<sup>[28]</sup> Group size ebbs and flows as unsuccessful males retreat and others arrive to try their luck. Behaviors include breaching, spyhopping, lob-tailing, tail-slapping, fin-slapping, peduncle throws, charging and parrying. Whale songs are assumed to have an important role in mate selection; however, they may also be used between males to establish dominance.<sup>[29]</sup>

Females typically breed every two or three years. The gestation period is 11.5 months, yet some individuals have been known to breed in two consecutive years. The peak months for birth are January, February, July, and August, with usually a one- to two-year period between humpback births. Recent research on humpback mitochondrial DNA reveals groups living in proximity to each other may represent distinct breeding pools.<sup>[30]</sup>

## Interspecies interactions

Humpbacks, known to be a friendly species, often interact with other cetacean species such as bottlenose dolphins. Right whales are often seen to interact with humpbacks<sup>[31]</sup> and these behaviors have been recorded in all oceans. A record of a Humpback and a Southern right demonstrating what was thought to be a mating behaviors was documented off the Mozambique coast.<sup>[32]</sup> Humpback whales are also known to appear in mixed groups with other species, such as the blue whale, fin whale, minke whale, gray whale, and sperm whale.<sup>[33]</sup> Teams of researchers including Nan Hauser observed a male humpback whale singing an unknown type of song and approaches a fin whale at Rarotonga in 2014.<sup>[34]</sup>

## Song

Both male and female humpback whales vocalize, but only males produce the long, loud, complex "songs" for which the species is famous. Each song consists of several sounds in a low register, varying in amplitude and frequency, and typically lasting from 10 to 20 minutes.<sup>[35]</sup> Humpbacks may sing continuously for more than 24 hours. Cetaceans have no vocal cords, so whales generate their songs by forcing air through their massive nasal cavities.

Whales within a large area sing the same song. All North Atlantic humpbacks sing the same song, and those of the North Pacific sing a different song. Each population's song changes slowly over a period of years without repeating.<sup>[35]</sup>

Scientists are unsure of the purpose of whale songs. Only males sing, suggesting one purpose is to attract females. However, many of the whales observed to approach a singer are other males, often resulting in conflict. Singing may, therefore, be a challenge to other males.<sup>[36]</sup> Some scientists have hypothesized the



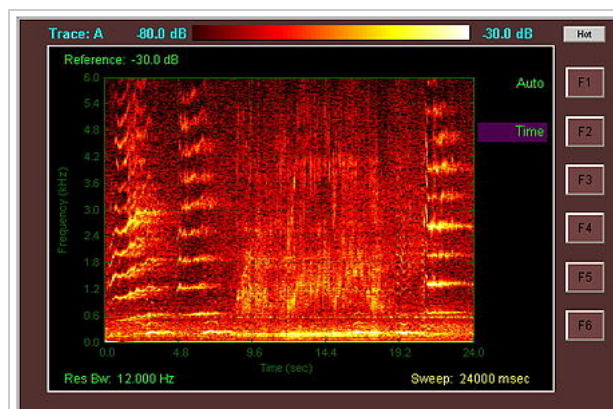
Humpbacks frequently breach, throwing two-thirds or more of their bodies out of the water and splashing down on their backs.



A humpback in the waters of the Abrolhos Archipelago

song may serve an echolocative function.<sup>[37]</sup> During the feeding season, humpbacks make altogether different vocalizations for herding fish into their bubble nets.<sup>[38]</sup>

Humpback whales have also been found to make a range of other social sounds to communicate, such as "grunts", "groans", "thwops", "snorts" and "barks".<sup>[39]</sup>



Spectrogram of humpback whale vocalizations: detail is shown for the first 24 seconds of the 37-second recording "Singing Humpbacks". In this recording, the ethereal whale "songs" are heard before and after a set of echolocation "clicks" in the middle.

Singing Humpbacks

0:00 MENU

Recording of Humpback Whales singing and Clicking.

*Problems playing this file? See media help.*

## Ecology



Humpback swimming on its back in Antarctica

### Feeding and predation

Humpbacks feed primarily in summer and live off fat reserves during winter.<sup>[40]</sup> They feed only rarely and opportunistically in their wintering waters. The humpback is an energetic hunter, taking krill and small

schooling fish such as Atlantic herring, Atlantic salmon, capelin, and American sand lance, as well as Atlantic mackerel, pollock, and haddock in the North Atlantic.<sup>[41][42][43]</sup> Krill and copepods have been recorded as prey species in Australian and Antarctic waters.<sup>[44]</sup> Humpbacks hunt by direct attack or by stunning prey by hitting the water with pectoral fins or flukes.

The humpback has the most diverse feeding repertoire of all baleen whales.<sup>[45]</sup> Its most inventive technique is known as bubble net feeding; a group of whales swims in a shrinking circle blowing bubbles below a school of prey. The shrinking ring of bubbles encircles the school and confines it in an ever-smaller cylinder. This ring can begin at up to 30 metres (98 ft) in diameter and involve the cooperation of a dozen animals. Using a crittercam attached to a whale's back, researchers found that some whales blow the bubbles,



A group of 15 whales bubble net fishing near Juneau, Alaska



Humpback whale lunging in the center of a bubble net spiral.

some dive deeper to drive fish toward the surface, and others herd prey into the net by vocalizing.<sup>[46]</sup> The whales then suddenly swim upward through the "net", mouths agape, swallowing thousands of fish in one gulp. Plated grooves in the whale's mouth allow the creature to easily drain all the water initially taken in.

A study published in the April 26, 2013 issue of *Science* documents a new form of bubble-net feeding called lobtail feeding among a population of whales in the Northern Atlantic Ocean. This technique involves the whale slapping the surface of the ocean with his tail between one and four times before creating the bubble net.<sup>[47]</sup> Using network-based diffusion analysis, the authors argue that the whales in this group learned the behavior socially from other whales in the group over a period of 27 years in response to a change in the primary form of prey.<sup>[48]</sup>

Given scarring records, killer whales are thought to prey upon juvenile humpbacks, though this has never been witnessed. The result of these attacks is generally nothing more serious than some scarring of the skin, but young calves likely are sometimes killed.<sup>[49]</sup>

## Range and habitat

Humpbacks inhabit all major oceans, in a wide band running from the Antarctic ice edge to 77° N latitude. Whales were once thought not to be present in the eastern Mediterranean or the Baltic Sea, but there have been increased appearances in both waters in recent years<sup>[50]</sup> along within the waters of Skagerrak and Kattegat,<sup>[51]</sup> as well as in Scandinavian fjords such as the Kvænangen where they had not been observed for long periods.<sup>[52][53]</sup> They are migratory, spending summers in cooler, high-latitude waters and mating and calving in tropical and subtropical waters.<sup>[35]</sup> An exception to this rule is a population in the Arabian Sea, which remains in these tropical waters year-round.<sup>[35]</sup> Annual migrations of up to 25,000 kilometres (16,000 mi) are typical, making it one of the mammals' best-traveled species.

A large population spreads across the Hawaiian Islands every winter, ranging from the island of Hawaii in the south to Kure Atoll in the north.<sup>[54]</sup> A 2007 study identified seven individuals wintering off the Pacific coast of Costa Rica as having traveled from the Antarctic—around 8,300 kilometres (5,200 mi). Identified by their unique tail patterns, these animals made the longest documented mammalian migration.<sup>[55]</sup> In Australia, two main migratory populations have been identified, off the west and east coasts, respectively. These two populations are distinct, with only a few females in each generation crossing between the two groups.<sup>[56]</sup> Camden Sound was newly established as a sanctuary for humpbacks.

In Panama and Costa Rica, Humpback whales come from both the Southern hemisphere, July–October with over 2,000 whales, and the Northern hemisphere, December–March with about 300 whales to breed and give birth.<sup>[57]</sup>

South Pacific populations migrating off mainland New Zealand, Kermadec Islands and Tasmania are increasing, but in slower speeds than in Australian waters because of illegal whaling by the Soviet Union in the 1970s.

Some re-colonizing habitats are confirmed especially in North and South Atlantic (e.g. English and Irish coasts, North Sea and Wadden Sea<sup>[58]</sup> etc.), South Pacific (e.g. New Zealand coasts and Niue), southern fiords of Chile and Peru (e.g. Gulf of Penas, Strait of Magellan, Beagle Channel<sup>[59]</sup>), and in Asia. Various



A whale off Australia on the spring migration, feeding on krill by turning on its side and propelling through the krill



A humpback straining water through its baleen after lunging.

areas in Philippines such as in Babuyan Islands and Pasaleng Bay, Ryukyu Islands the Volcano Islands in Japan, Northern Mariana Islands, have been re-established as stable/growing wintering grounds while Vietnamese, Taiwanese, and Chinese coasts show slow or no obvious recovering yet. As the populations recover, concerns of entanglements and ship strikes are increasing such as off Japanese coasts where whales began to migrate off Japanese archipelagos and into Sea of Japan. Connections between these stocks and whales seen in Sea of Okhotsk, on Kamchatka coasts, and around Commander Islands have been studied.<sup>[60]</sup>

## Whaling

Humpback whales were hunted as early as the 18th century, but distinguished by whalers as early as the first decades of the 17th century. By the 19th century, many nations (the United States in particular), were hunting the animal heavily in the Atlantic Ocean, and to a lesser extent in the Indian and Pacific Oceans. The late-19th-century introduction of the explosive harpoon, though, allowed whalers to accelerate their take. This, along with hunting in the Antarctic Ocean beginning in 1904, sharply reduced whale populations. During the 20th century, over 200,000 humpbacks were estimated to have been taken, reducing the global population by over 90%, with North Atlantic populations estimated to have dropped to as low as 700 individuals.<sup>[61]</sup> In 1946, the International Whaling Commission was founded to oversee the whaling industry. They imposed rules and regulations for hunting whales and set open and closed hunting seasons. To prevent extinction, the International Whaling Commission banned commercial humpback whaling in 1966. By then, the population had been reduced to around 5,000.<sup>[62]</sup> That ban is still in force.

Prior to commercial whaling, populations could have reached 125,000. North Pacific kills alone are estimated at 28,000.<sup>[17]</sup> The full toll is much higher. It is now known that the Soviet Union was deliberately under-recording its catches; the Soviet catch was reported at 2,820, whereas the true number is now believed to be over 48,000.<sup>[63]</sup>

As of 2004, hunting of humpback whales was restricted to a few animals each year off the Caribbean island Bequia in the nation of St. Vincent and the Grenadines.<sup>[45]</sup> The take is not believed to threaten the local population. Japan had planned to kill 50 humpbacks in the 2007/08 season under its JARPA II research program, starting in November 2007. The announcement sparked global protests.<sup>[64]</sup> After a visit to Tokyo by the chairman of the IWC, asking the Japanese for their co-operation in sorting out the differences between pro- and antiwhaling nations on the Commission, the Japanese whaling fleet agreed no humpback whales would be caught for the two years it would take for the IWC to reach a formal agreement.<sup>[65]</sup>

In 2010, the International Whaling Commission authorized Greenland's native population to hunt a few humpback whales for the next three years.<sup>[66]</sup>

In Japan, not only humpback, minke, sperm, and many other smaller Odontoceti, but also including critically endangered species such as North Pacific right, western gray, and northern fin have been targets of illegal captures utilizing harpoons for dolphin hunts or intentionally drive whales into nets, and later reports to administrative organs or research institutions as cases of *entanglements where fishermen tried their best to save whales*. Humpback's meat can also be found on markets even today, and there had been a case in which it was scientifically revealed that humpbacks of unknown quantities with other species were illegally hunted in EEZ of anti-whaling nations such as off Mexico or South Africa, and so on.<sup>[67]</sup>

## Conservation

The worldwide population is at least 80,000 humpback whales, with 18,000–20,000 in the North Pacific,<sup>[68]</sup> about 12,000 in the North Atlantic,<sup>[69]</sup> and over 50,000 in the Southern Hemisphere,<sup>[70]</sup> down from a prewhaling population of 125,000.<sup>[17]</sup>



In August 2008, the IUCN changed humpback's status from Vulnerable to Least Concern, although two subpopulations remain endangered.<sup>[71]</sup> The United States is considering listing separate humpback populations, so smaller groups, such as North Pacific humpbacks, which are estimated to number 18,000–20,000 animals, might be delisted. This is made difficult by humpback's extraordinary migrations, which can extend the 5,157 miles (8,299 km) from Antarctica to Costa Rica.<sup>[30]</sup> In Costa Rica, the Ballena Marine National Park is specially designed for protections of humpbacks.

This species is considered "least concern" from a conservation standpoint, as of 2008. This is an improvement from vulnerable in 1996 and endangered as recently as 1988. Most monitored stocks of humpback whales have rebounded well since the end of commercial whaling,<sup>[2][72]</sup> such as the North Atlantic, where stocks are now believed to be approaching levels similar to those before hunting began. However, the species is considered endangered in some countries, including the United States.<sup>[73][74]</sup>

Although much was learned about humpbacks from whaling, migratory patterns and social interactions were not well understood until two studies by R. Chittleborough and W. H. Dawbin in the 1960s.<sup>[75]</sup> Roger Payne and Scott McVay made further studies of the species in 1971.<sup>[76]</sup> Their analysis of whale songs led to worldwide media interest and convinced the public that whales were highly intelligent, aiding the antiwhaling advocates.

The Calambokidis et al. 2001 report provided the "first quantitative assessment of the migratory structure of humpback whales in the entire North Pacific basin."<sup>[77]</sup>

The United States initiated a status review of the species on August 12, 2009, and is seeking public comment on potential changes to the species listing under the Endangered Species Act.<sup>[78]</sup> Areas where population data are limited and the species may be at higher risk include the Arabian Sea, the western North Pacific Ocean, the west coast of Africa and parts of Oceania.<sup>[2]</sup>

The U. S. Department of Commerce's commissioned 2008 report entitled "SPLASH: Structure of Populations, Levels of Abundance and Status of Humpback Whales in the North Pacific," noted that there are many challenges to determining the recovery of the previously over-harvested population of the Humpback Whale (North Pacific) because of the lack of accurate abundance estimates, the unexpected complexity of the structure of whale populations and their migratory movements between feeding and wintering areas. According to the 2008 SPLASH report, which was based on data collected between 2004 to 2006, there were between about 18,302 Humpback Whales in the entire North Pacific (Splash 2008:2-3).<sup>[79]</sup> The SPLASH estimate is consistent with a moderate rate of recovery for a depleted population (SPLASH 2008:3) although it also considered to be a "dramatic increase in abundance" from other postwhaling period estimates" (post-1960s. In comparison to the estimate of 9,819 in the Calambokidis et al. 1997 report<sup>[80]</sup> covering the period 1991-1993 this represents a four percent increase in population from 1993 to 2006 (SPLASH 2008:3).<sup>[79]</sup>

Off the west coast of Canada, the Gwaii Haanas National Marine Conservation Area Reserve which covers 3,400 square kilometres, is "a primary feeding habitat" of the Humpback Whale (North Pacific population) protected by Canada's Species at Risk Act (SARA).<sup>[81]</sup> Humpback Whale's critical habitat off the coast of British Columbia overlaps with tankers shipping route between Canada and its eastern trade partners.<sup>[81]</sup> In



A dead humpback washed up near Big Sur, California



Humpback whale species in Uramba Bahía Málaga National Natural Park, in Colombia, considered the favorite place for whales to give birth to their young, making it a tourist destination

2005 the Humpback Whale (North Pacific population) was listed as threatened under Canada's Species at Risk Act (SARA). In April 19, 2014 the Department of the Environment recommended an amendment to (SARA) to downgrade the status of the Humpback Whale off the coast of British Columbia from "threatened" to "species of special concern."<sup>[82]</sup> According to Committee on the Status of Endangered Wildlife in Canada (COSEWIC), the Humpback Whale (North Pacific population) has been increasing at about four per cent each year from 1992 to 2008. Although socio-economic costs and benefits were considered in their decision to downgrade the status of the whales, according to the University of British Columbia's North Pacific Universities Marine Mammal Research Consortium's research director, the decision was based on biology not politics.<sup>[81]</sup>

The United Kingdom, among other countries, designated the humpback as a priority species under the national Biodiversity Action Plan. The sanctuary provided by US National Parks, such as Glacier Bay National Park and Preserve and Cape Hatteras National Seashore, among others, have also become major factors in sustaining populations.<sup>[83]</sup>

Today, individuals are vulnerable to collisions with ships, entanglement in fishing gear, and noise pollution.<sup>[2]</sup> Like other cetaceans, humpbacks can be injured by excessive noise. In the 19th century, two humpback whales were found dead near sites of repeated oceanic sub-bottom blasting, with traumatic injuries and fractures in the ears.<sup>[84]</sup>

Saxitoxin, a paralytic shellfish poisoning from contaminated mackerel has been implicated in humpback whale deaths.<sup>[85]</sup>

## Whale-watching

Humpback whales are generally curious about objects in their environments. Some individuals, referred to as "friendlies", approach whale-watching boats closely, often staying under or near the boat for many minutes. Because humpbacks are often easily approachable, curious, easily identifiable as individuals, and display many behaviors, they have become the mainstay of whale-watching tourism in many locations around the world. Hawaii has used the concept of "ecotourism" to use the species without killing them. This whale-watching business brings in a revenue of \$20 million per year for the state's economy.<sup>[86]</sup>



Humpback breaching near coast

	<b>North Atlantic</b>	<b>North Pacific</b>	<b>Southern Hemisphere</b>
Summer	New England, Nova Scotia and Newfoundland, the northern St. Lawrence River, the Snaefellsnes peninsula in the west of Iceland.	Bahía Solano and Nuquí in Colombia, California, Alaska, Oregon, Washington, British Columbia, Isla Iguana in Panama.	Antarctica.
Winter	Samaná Province of the Dominican Republic, the Bay of Biscay France, Mona Passage off the coast of Puerto Rico	Hawaii, Baja, the Bahía de Banderas off Puerto Vallarta	Sydney, Byron Bay north of Sydney, Hervey Bay north of Brisbane, North and East of Cape Town, New Zealand, the Tongan islands, Victor Harbor and outlying beaches, Saint Helena in the South Atlantic.

## Famous humpbacks

### The Tay whale

In December 1883, a male humpback swam up the Firth of Tay in Scotland, past what was then the whaling port of Dundee. The whale was exhibited to the public by a local entrepreneur, John Woods, both locally and then as a touring exhibition which travelled to Edinburgh and London. The whale was dissected by professor John Struthers, who wrote seven papers on its anatomy, and then in 1889, a monograph on the humpback.<sup>[87][88][89][90]</sup>



Professor John Struthers about to dissect the Tay whale, Dundee, photographed by George Washington Wilson in 1884

### Migaloo

An albino humpback whale that travels up and down the east coast of Australia became famous in the local media on account of its extremely rare, all-white appearance. Migaloo is the only known all-white humpback whale<sup>[91]</sup> and is known to be a true albino.<sup>[92]</sup> First sighted in 1991, and believed to be three to five years old at that time, Migaloo was named for an indigenous Australian word for "white fella". Migaloo was shown to be male in 2004 by analysis of sloughed skin samples. Because of the intense interest, environmentalists feared he was becoming distressed by the number of boats following him each day. In response, the Queensland and New South Wales governments introduce legislation each year to create a 500 m (1600-ft) exclusion zone around the whale.

### Humphrey

Humphrey the Whale was twice rescued by The Marine Mammal Center and other concerned groups in California.<sup>[93][94]</sup> In 1985, Humphrey swam into San Francisco Bay and then up the Sacramento River towards Rio Vista.<sup>[95]</sup> Five years later, Humphrey returned and became stuck on a mudflat in San Francisco Bay immediately north of Sierra Point below the view of onlookers from the upper floors of the Dakin Building. He was pulled off the mudflat with a large cargo net and the help of the Coast Guard. Both times, he was successfully guided back to the Pacific Ocean using a "sound net" in which people in a flotilla of boats made unpleasant noises behind the whale by banging on steel pipes, a Japanese fishing technique known as *oikami*. At the same time, the attractive sounds of humpback whales preparing to feed were broadcast from a boat headed towards the open ocean.<sup>[96]</sup> After leaving San Francisco Bay in 1990, Humphrey was seen only once, at the Farallon Islands in 1991.

## Media

Common humpback whale vocalizations on a windy day

0:00

MENU

Recorded by the National Park Service, using a hydrophone that is anchored near the mouth of Glacier Bay, Alaska for the purpose of monitoring ambient noise.



A humpback whale song

0:00

MENU

Also recorded by the National Park Service, as above.

Another humpback whale song

0:00

MENU

Made by the National Oceanic and Atmospheric Administration

*Problems playing these files? See media help.*

## See also

- List of whale and dolphin species
- List of whale vocalizations

## Footnotes

- The use of Order Cetartiodactyla, instead of Cetacea with Suborders Odontoceti and Mysticeti, is favored by most evolutionary mammalogists working with molecular data <sup>[3][4][5][6]</sup> and is supported the IUCN Cetacean Specialist Group<sup>[7]</sup> and by Taxonomy Committee <sup>[8]</sup> of the Society for Marine Mammalogy, the largest international association of marine mammal scientists in the world. See Cetartiodactyla and Marine mammal articles for further discussion.

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## External links

### General

- US National Marine Fisheries Service Humpback Whale web page (<http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/humpbackwhale.htm>)
- ARKive - images and movies of the humpback whale (*Megaptera novaeangliae*) ([http://www.arkive.org/species/GES/mammals/Megaptera\\_novaeangliae/](http://www.arkive.org/species/GES/mammals/Megaptera_novaeangliae/)).
- Photos and information about humpback whales and other cetaceans in Mayumba National Park (<http://www.mayumbanationalpark.com/cetaceans.htm>)
- Humpbacks of Hervey Bay, Queensland, Australia (<http://www.oceania.org.au/whales/whales.html>)
- The Dolphin Institute Whale Resource Guide ([http://www.dolphin-institute.org/resource\\_guide/gettingtoknowhumpbackwhales.htm](http://www.dolphin-institute.org/resource_guide/gettingtoknowhumpbackwhales.htm)) and scientific publications ([http://www.dolphin-institute.org/our\\_research/whale\\_research/whaleresearchpublications.htm](http://www.dolphin-institute.org/our_research/whale_research/whaleresearchpublications.htm))
- Humpback Whale Gallery (Silverbanks) ([http://www.ecoresearch.net/index.php?q=gallery&g2\\_itemId=227](http://www.ecoresearch.net/index.php?q=gallery&g2_itemId=227))
- **(French)**Humpback whale videos ([http://www.cetace.info/videos/Baleine\\_a\\_bosse/videos\\_baleine\\_a\\_bosse.php](http://www.cetace.info/videos/Baleine_a_bosse/videos_baleine_a_bosse.php))
- Book about the two humpback whales lost in the Sacramento River in May 2007 (<http://www.bigtomatopress.com/>) -
- The Humpback Whales of Hervey Bay (<http://www.oceania.org.au/iwhales/portal/home.php>)
- Epic humpback whale battle filmed ([http://news.bbc.co.uk/earth/hi/earth\\_news/newsid\\_8318000/8318182.stm](http://news.bbc.co.uk/earth/hi/earth_news/newsid_8318000/8318182.stm))



Wikimedia Commons has media related to *Megaptera novaeangliae*.



Wikispecies has information related to: *Megaptera novaeangliae*

### Humpback whale songs

- The Whalesong Project (<http://whalesong.net/>)

- Article from PHYSORG.com on the complex syntax of whalesong phrases (<http://www.physorg.com/news11980.html>)
- Analysis of the form and function of the humpback whale song ([http://www.acsu.buffalo.edu/~emiii/mercado\\_et\\_al\\_03.pdf](http://www.acsu.buffalo.edu/~emiii/mercado_et_al_03.pdf)) from the University at Buffalo
- Voices of the Sea - Sounds of the Humpback Whale ([http://cetus.ucsd.edu/voicesinthesea\\_org/species/baleenWhales/humpback.html](http://cetus.ucsd.edu/voicesinthesea_org/species/baleenWhales/humpback.html))
- Songlines - Songs of the Eastern Australian Humpback whales (<http://www.songlinesofthewhales.org>)

## Conservation

- Recovery plan in Australia: 2005–2010 (<http://www.environment.gov.au/biodiversity/threatened/publications/recovery/m-novaeangliae/index.html>)
- Humpback Whales in the Sacramento River ([http://www.incidentnews.gov/attachments/7639/517872/Sacramento\\_Humpback\\_Whales-051807-1355.pdf](http://www.incidentnews.gov/attachments/7639/517872/Sacramento_Humpback_Whales-051807-1355.pdf)) by the NOAA
- The Oceania Project, Humpback Whale Research, Hervey Bay (<http://www.oceania.org.au/expedition/research.html>)

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Categories: IUCN Red List least concern species | Animals described in 1781 | Baleen whales  
| Cetaceans of Australia | Fauna of the Atlantic Ocean | Fauna of the Pacific Ocean  
| Mammals of Greenland | Marine mammals of Hawaii | Megafauna | Arctic cetaceans

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