



## Threats to Whales

**Marine debris** is the leading killer of whales and all marine mammals. Discarded nets or line may entangle and drown whales. Whales that swim long distances while dragging entangled lines or buoys may become weakened and fall prey to sharks or drown.

**Vessel collisions** are another threat, especially in areas where very large vessels are traveling fast. Pacific Whale Foundation urges all boaters to follow the "Be Whale Aware" guidelines to prevent collisions.

**Whaling** is practiced by Norway, Japan and Iceland, in open defiance of the International Whaling Commission (IWC) ban on commercial whaling. Japan continues whaling through a loophole in the IWC ban allowing for lethal "scientific whaling," although it is not necessary to kill whales in order to learn about them. Japan and other nations also continue to lobby the IWC to end the ban on commercial whaling.

**Climate change and pollution** threaten to reduce populations of small, schooling fish, plankton and small invertebrates that humpback whales rely upon for food.

**Acoustic harassment** by the use of low-frequency sonar as part of military operations can also cause disturbances to whales.

### Learn How You Can Make a Difference:

Visit [www.pacificwhale.org](http://www.pacificwhale.org)

Pacific Whale Foundation is a non-profit, tax-exempt IRS 501(c)(3) organization. We've studied whales in Hawai'i and throughout the Pacific for over 32 years.



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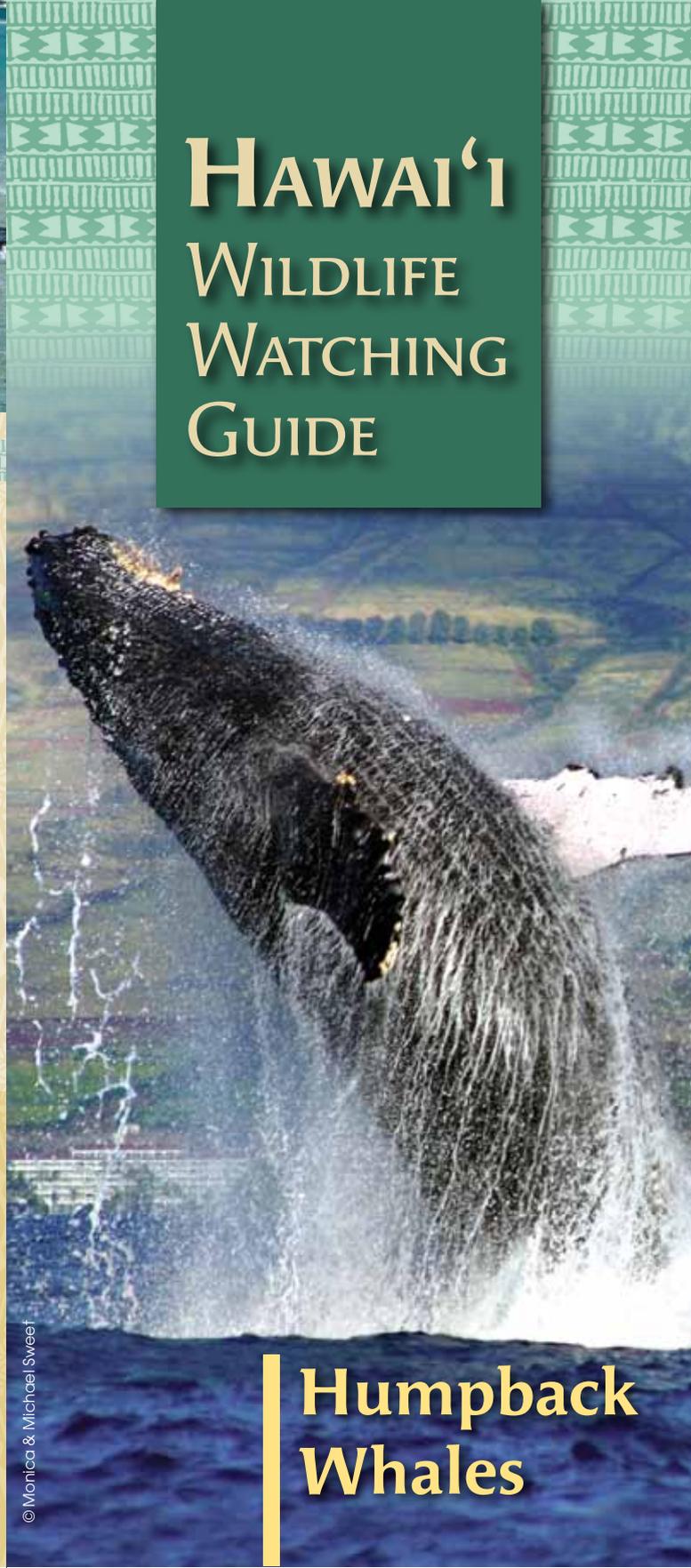
Protecting our oceans through science and advocacy

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# HAWAI'I WILDLIFE WATCHING GUIDE



## Humpback Whales

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# Protecting Whales

Scientists estimate that the current North Pacific humpback whale population numbers over 21,000 humpback whales, with approximately 60 percent visiting Hawai'i each winter.

Can you see the differences in the markings and pigmentation patterns on these tail flukes?

Humpback whales are protected in Hawai'i by the Marine Mammal Protection Act and the Endangered Species Act. The Hawaiian Islands Humpback Whale National Marine Sanctuary was created in 1996 to further highlight the plight of the humpback whale.

Thanks to these protective measures, the North Pacific humpback whale population is increasing at a rate of about 7% each year. However, these whales have not yet recovered to their original population levels and remain an endangered species in the United States.

Federal laws protect humpbacks from being harmed or harassed. Approaches by any means – from kayaks to large ferries – to within 100 yards of a humpback whale are prohibited in Hawai'i. Aircrafts may not enter a 1,000 foot overflight "bubble" around whale pods. To report a situation where a whale is being approached closer than legally allowed, please call NOAA Fisheries Enforcement toll free at 888-256-9840.

Pacific Whale Foundation's Be Whale Aware program works with vessel operators to help prevent disturbances or collisions to whales during the winter mating and calving season. Vessel operators are asked to reduce speeds to 15 knots or less in whale waters (100 fathoms or less), reduce speeds to 6 knots or less (no wake) within 440 yards of a whale or dolphin group and avoid abrupt course changes.

- To learn more about Pacific Whale Foundation's Be Whale Aware program, visit [www.pacificwhale.org](http://www.pacificwhale.org).

## Identifying Individual Whales

Each humpback whale has a unique pattern of marks and coloration on its tail flukes. Scientists can identify individual animals using these marks and develop long-term case histories of known whales.

Adopt one of the whales that have been identified in Hawai'i through Pacific Whale Foundation's Adopt A Whale program. Visit [www.pacificwhale.org](http://www.pacificwhale.org) for more info.



Heaven



Maka'ala



Kama'aina



Kulla





© Bryant Austin

## Feeding

During the summer feeding season, humpback whales can consume a ton of food in a day!

Humpback whales have no teeth. Instead, they have rigid strips of baleen (made of keratin, a material similar to human fingernails) hanging from their upper jaws.

Humpback whales take in large amounts of both food and water, and then strain the water through the baleen, thus catching thousands of small fish and planktonic organisms. North Pacific humpback whales feed on small schooling fish such as capelin, mackerel and herring and larger forms of plankton.

Generally, humpback whales do not feed while in Hawai'i, although they may feed opportunistically during their migration.

## Mating

The act of mating by humpback whales has never been documented. During the mating and calving season, large groups of whales form when males pursue one or more females. These "competition groups" often display high energy behaviors such as breaching, head lunging, peduncle throws and rapid swimming at the surface. Competition groups often gain or lose members and can persist for many hours, as the strongest males strive to hold the closest positions to the female. Males and females do not form long-term pair bonds.

## Calving

A humpback whale's gestation period is nearly a year. A whale conceived in Hawai'i one winter may be born here the following winter.

Mothers and their newborn calves generally remain close to shore to rest and nurse. A calf survives on its mother's fat-rich milk for 6 to 8 months, drinking about 100 gallons per day. The calf nearly doubles in length during the first year. Calves begin to feed on fish at around 6 months and are usually weaned after about 10 to 12 months.

Sometimes, a mother and calf will be accompanied by a third whale, called an escort. This escort, often a male (but unlikely the father), is often observed in close proximity to the mother and calf, with most associations lasting only a few hours.





## Singing Photography Tips

Place your head underwater during the winter months in Hawai'i and chances are you will hear the song of a humpback. Sometimes described as resembling "barnyard" noises, these sounds are actually complex, orderly components of a song that are repeated for extended periods. A song generally lasts between six and eighteen minutes.

Only males "sing" – and this singing primarily occurs in breeding and calving areas. The exact function of the song is not known. It may signal fitness or readiness to mate or it may be a form of acoustic challenge to other males.

Different populations of humpback whales around the world sing different songs. All the males within a population appear to sing the same song. The specific sequence and structure of a population's song changes slowly over a series of years, with all the males within a breeding population imitating that season's version.

When photographing whales, always hold your camera steady. Slowly depress the shutter release. Never follow the whale through its movements while taking a picture as this will blur the image. Set your shutter speed for at least a five-hundredth of a second; this will freeze the movement of the whale, the vessel, the ocean and your body.

If you have access to a 70mm – 300 mm zoom lens, you'll be able to photograph whales either close-up or at some distance without loss of quality due to the vibration of the boat.

## How Big Are Hawaii's Humpback Whales?

### Adults

Length: 42 - 45 feet

Weight: 35 - 40 tons

### Newborn calves

Length: 10 - 15 feet

Weight: 1.5 - 2 tons



# Whale Behaviors

Humpback whales engage in a variety of high-energy behaviors. To understand the significance and purpose of whale behaviors, scientists consider factors such as the season, the other whales in the vicinity and the location.



## Blow

A blow occurs as a whale exhales and inhales at the surface. A bushy cloud of water vapor is produced above the animal's head during exhalation. It can be up to 15 feet tall!



## Peduncle Arch

As a whale dives, it may arch its body high above the water, so that its caudal peduncle appears. This may help the whale dive more deeply.



## Fluke Up Dive

Following a peduncle arch, the humpback will usually bring its tail flukes above the surface of the water. It is called a "fluke up" dive if the flukes are brought straight into the air, so that the entire ventral (underneath) surface of the flukes is exposed.



## Pec Slap

The whale rolls sideways at the surface, slapping a pectoral fin against the water. Sometimes whales lay on their backs slapping both fins down on top of the water.

Humpback whales in Hawai'i are sometimes observed accompanied by dolphins and toothed whales.



## Breach

The whale propels itself out of the water, clearing the surface with two-thirds of its body or more. As

the whale rises above the water, it throws one pectoral fin out to the side and turns in the air about its longitudinal axis. Following a breach, whalewatchers often observe other whales breaching in the distance, indicating it may be a form of communication.



## Spy Hop

The whale rises relatively straight up out of the water rather slowly, maintains its head above the surface to just below the eye, often turns 90-180 degrees on its longitudinal axis, and then slips back below the surface.



## Peduncle Throw

The rear portion of the body, including both the caudal peduncle and the flukes, is thrown up out of the water then brought down sideways, either on the surface of the water or on top of another whale.



## Head Slap

Lunging head first out of the water, the whale pounds its massive, sometimes partially engorged mouth, on the water's surface. The head can rise up to 20 feet above the water at the peak of the display.



## Tail Slap

This forceful slapping of the tail flukes against the surface of the water can be carried out while the whale is lying either upright or inverted in the water. The resulting sound can be heard underwater, and may be a form of communication.

# Hawai'i

## One of the world's finest whalewatch locations

Each year, starting in late-September and continuing through early June, Hawai'i is home to humpback whales. Our island chain is the primary place in the North Pacific where humpback whales come to mate, give birth and nurse their young. While humpbacks can be seen off all islands, the four-island area of Maui, Moloka'i, Lana'i and Kaho'olawe, and Penguin Banks near Moloka'i are two of their preferred habitats.



## What's in a Name?

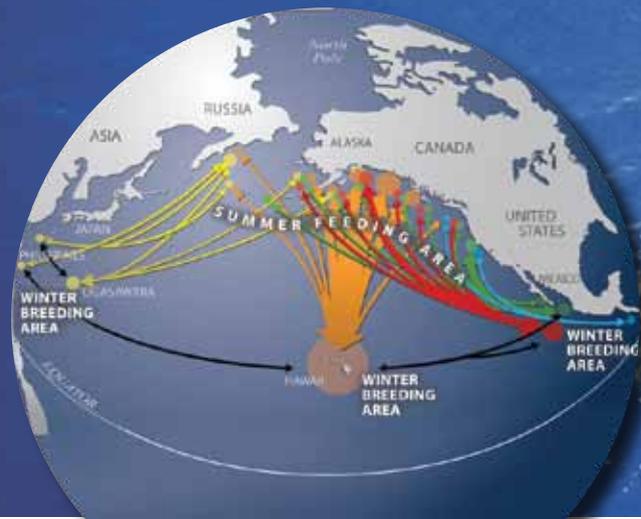
The humpback's scientific name, *Megaptera Novaeangliae* ("great wings of New England") refers to its huge 15-foot pectoral fins. These fins are used to turn and steer.

The name "hump-backed" (now considered "hump-back") was coined by early whalers, due to the 'humped' appearance of the whale's back and the prominent dorsal fin.

In Hawaiian, the word "kohola" refers to "whale" in general. There's no specific name for the humpback whale.

## Long Distance Travelers

Summer: The humpback whales that you see in Hawai'i spend summers feeding off the West Coast, in an area that extends from Northern California to the Bering Sea.



Winter: The whales migrate to Hawai'i to mate, give birth and care for their young.

There are other groups of humpback whales living in the North Pacific. Some of these whales move between different breeding areas in winter.

Based on data provided in "SPLASH: Structure of Populations, Levels of Abundance and Status of Humpback Whales in the North Pacific", Cascadia Research, May 2008.

