

GLACIER BAY & ICY STRAIT HUMPBACK WHALE FACT SHEET
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Individual identification of Glacier Bay & Icy Strait's humpback whales was initiated by Charles Jurasz (of Juneau) in 1974.

Many of the same whales Jurasz identified still return annually to the area today. From 1974 through 2007, approximately 540 different individuals have been identified.

From 1974 through 2007, 201 calves were documented in Glacier Bay/Icy Strait; as of 2007, 58 of these whales are known to have returned to GB/IS in later years.

The oldest of these known-age animals is male #516, Garfunkle, born in 1974 (*i.e.*, 34 years old in 2008).

We collect sloughed skin with a small net and send it to a lab where DNA analysis reveals the whale's sex and other genetic data. The other ways we are able to determine a whale's sex are if the whale returns to the study area with a calf (then we assume it is female) or in the infrequent event that we obtain photographs of the whale's genital area.

Each year 1985-2007, the NPS whale monitoring program has identified 41 to 161 individual whales.

Annual numbers of whales in GB/IS vary widely, although survey effort has been fairly consistent.

Linking whale numbers with vessel traffic has been difficult, although short term changes in behavior due to vessel disturbance have been shown in GB/IS and numerous other studies.

Most humpback whale sightings in Glacier Bay are within ½ mile of shore. Vessel operating restrictions in whale waters are intended to minimize disturbance to feeding whales and lower the risk of whale/vessel collisions.

The most recent population estimate for SE Alaska was 961 individuals in 2000, however this is considered a minimum estimate because no data were collected in southern SE Alaska.

Most mature female humpback whales have a 2-year calving interval.

A mature female humpback is either pregnant or lactating almost all the time. Female humpback whale reproductive spans of at least 17 years have been documented in Hawaii. In the Glacier Bay area, female #535 has the longest reproductive span encompassing 27 years from 1981-2007.

Four GB/IS females have given birth in successive years, and one calved 3 years in a row.

Several Hawaii females have also been observed to give birth in successive years, but the question is whether these calves survived their first migration.

A collaborative study by many North Pacific whale researchers determined the calf survival rate in the first year of life is approximately 80%. Another biologically important question is the average age at which females first give birth. In the North Atlantic, the average age at first calving is 5.9 years but in southeastern Alaska it is much later (11.8 years).

There are seven known, living grandmothers in the GB/IS population. These are females who have had at least one female offspring who we later observed with a calf. There have been a few cases where both grandmother and daughter returned to the study area with new calves in the same year.

Humpback whales are very acoustically oriented.

Mature males sing long songs (~15 minutes) in their tropical breeding grounds as a display related to mating. In quiet acoustic conditions, humpback song can be heard approximately 50 miles away from the singer.

Although male humpback whales were once thought to sing only on their breeding grounds, a number of researchers have recorded humpbacks singing on their feeding grounds, often around the onset of migration. For the past several falls, we have frequently recorded humpback whale song using a hydrophone anchored in Bartlett Cove.

On the feeding grounds, humpbacks produce a variety of vocalizations in many social contexts, including a specialized 'feeding call' which probably either coordinates the whales during group feeding or helps to manipulate the fish.

Humpbacks seem to have very good hearing, but sometimes don't seem to pay much attention to their surroundings when they're feeding. This implies that while they may not always be disturbed by motor boats in their immediate area, the whales

run the risk of colliding with them, if they've 'tuned out' the sound. Whales probably don't detect silent boats (kayaks, sailboats and drifting motorboats, for example) until they are very close or within visual range.

Structure of North Pacific humpback whale stock

Three stocks of humpback whales are recognized in the western, eastern and central North Pacific. Humpback whales in SE Alaska are part of the central North Pacific stock. The most recent population estimate for the CNP stock was 4,005 whales in 1993 with a current rate of increase of 7% per year.

Feeding areas are north of 30 degrees latitude, along the rim of the Pacific Ocean basin from California to Japan. Feeding areas are distinct & individuals tend not to move between feeding areas, although some movement has been documented.

Feeding area cohesiveness is maintained by calves returning to areas where their mother took them in their first year of life.

All whales from a given feeding area do not go to the same wintering area, although trends exist. Hawaii appears to be the main wintering ground for SE Alaska humpbacks. The fastest documented migration between SE Alaska and Hawaii is 36 days (distance = 2,398 nautical miles).

Wintering areas tend to be at around 20 degrees latitude. Hawaii, Mexico, Japan and Costa Rica are the documented North Pacific wintering areas.

Most SE Alaska whales winter in Hawaii, but some have been sighted in Mexico and one whale from British Columbia was identified in Ogasawara, Japan.

Humpback whale use of southeastern Alaska

Humpback whales are present in SE Alaska in all months of the year. Researcher Jan Straley (UAS) has documented at least 10 individuals over-wintering near Sitka. It is unknown how common over-wintering behavior is in most areas because there is minimal or no photographic identification effort in the winter in most parts of SE Alaska.

Late fall and winter whale habitat in SE Alaska appears to correlate with areas that have over-wintering herring (lower Lynn Canal, Tenakee Inlet, Whale Bay, Ketchikan).

In GB/IS, the longest sighting interval recorded was of female whale #1304, who was sighted over a span of 219 days, between April 17 and November 21, 2002, when she was 10 years old.

Whale numbers peak in late summer. Some individuals return to very specific areas of GB/IS year after year.

Individual whales have preferred feeding partners within and between years. Associations among whales are stable within and between years.

Humpback whales move within southeastern Alaska

Collaborative research enables documentation of whale movement between researchers' study areas. Work by Jan Straley, Scott Baker and Glacier Bay National Park documented whales moving within SE Alaska. In addition, we have documented frequent movement of whales between SE Alaska and northern British Columbia.

Many whales that use GB/IS travel to Frederick Sound in late summer. Some of these animals return to GB/IS in late summer or early fall.

Whales frequently move between Glacier Bay and Icy Strait in the spring and summer, treating the area as a single contiguous habitat.

Current threats include habitat degradation, vessel disturbance, vessel strikes and interactions with fishing gear.

Two humpback whales have been found dead in Glacier Bay after being hit by vessels: a pregnant female in July 2001 and a male calf in August 2004. In a world-wide study of whale/vessel collisions, David Laist and colleagues found that most lethal strikes involve vessels >80 meters (262 ft) in length traveling 14 knots or faster.

Based on the results of a 2003/04 entanglement scar study, at least 71% of the humpbacks in northern SE Alaska have been entangled around their tailstock at least once.