CONTENTS

BOWHEAD WHALE

Balaena mysticetus Linnaeus, 1758

The only large whale found exclusively in the Arctic, the bowhead is well adapted to life in its freezing home. With a layer of blubber up to 50cm thick and the ability to create its own breathing holes by breaking through thick ice, it can live at higher altitudes than any other baleen whale. Known to live to at least 200 years old.

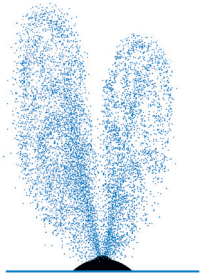
IUCN status Least Concern (2018). Sea of Okhotsk sub-population Endangered (2018); East Greenland–Svalbard–Barents Sea sub-population Endangered (2018).
Population Minimum 10,000 mature individuals, likely 20,000–30,000 total (best estimates 16,800 Bering–Chukchi–Beaufort; low hundreds Sea of Okhotsk; 6,400 Eastern Canada–West Greenland; low hundreds East Greenland–Svalbard–Barents Sea). Pre-commercial whaling population 71,000–113,000. Increasing.
Classification Mysticeti, family Balaenidae.
Taxonomy No recognized forms or subspecies (though four separate stocks).
Other names Greenland/Arctic whale, Greenland/Arctic right whale.

DISTRIBUTION Circumpolar in the Arctic and sub-Arctic, mainly 54–85°N. Closely associated with the pack ice and its seasonal movements, migrating to the High Arctic in summer and retreating southward in winter with the advancing ice edge (the winter range is poorly known, but it is believed to live in areas near the ice edge, in polynyas and unconsolidated pack ice). May travel long distances (up to 200km per day) between high-productivity feeding areas. Mainly pelagic, but does occur in coastal waters. There is some geographic segregation by sex. Warming Arctic waters, due to climate change, are affecting seasonal distribution and timings.

Four 'stocks' (sub-populations) are currently recognized (mainly based on geographical separation): Bering–Chukchi–Beaufort (Alaska, Canada and Russia); Sea of Okhotsk (Russia); Eastern Canada–Western Greenland (formerly considered two stocks: Hudson Bay–Foxe Basin, Canada, and Baffin Bay–Davis Strait, Canada and Greenland); and East Greenland–Svalbard–Barents Sea (Greenland, Norway and Russia).

BEHAVIOR Generally a slow, deliberate swimmer, but capable of bursts of speed up to 21km/h. Frequently breaches, flipper-slaps, lobtails and spyhops, and may inspect or play with objects in the water. During breaches, up to 60 per cent of the body leaves the water and the whale usually falls back into the water on its back or side. Often quite approachable by boat and may closely investigate people standing on the floe edge. It can swim beneath ice, making breathing holes by breaking through ice up to 60cm thick with the raised part of its massive head. Often seen in association with belugas and narwhal.

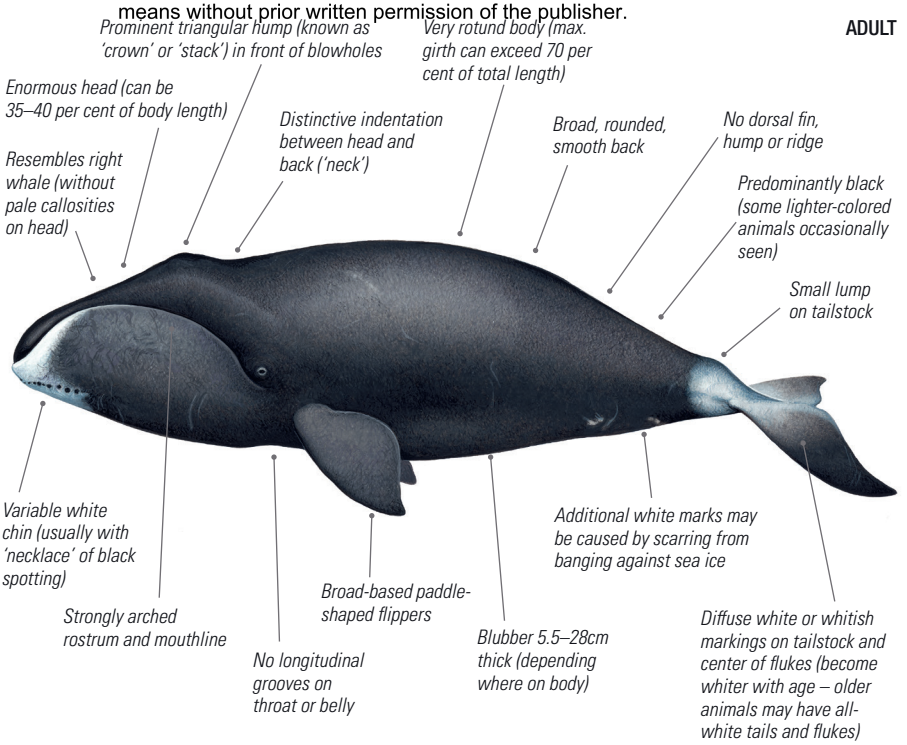
FOOD AND FEEDING Catholic diet (more than 100 prey species known) but prefers small to medium-sized crustaceans (mostly 3–30mm-long), especially copepods and euphausiid krill; also feeds on mysids and gammarid amphipods. Feeds throughout water column, anywhere from surface to seabed, under ice as well as in open water (where may 'skim' through concentrated prey at surface, swimming slowly with mouth open).

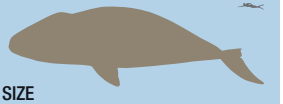


DIVE SEQUENCE Frequently flukes before deep dive (tail may tip to right).
• **DEPTH** Frequently less than 30m when foraging in summer; dives deeper during winter (often 250+m) and when traveling; maximum recorded 582m (West Greenland, 2011). • **DURATION** Typically 1–20 minutes (depending on behavior – foraging dives in Beaufort Sea average 3.4–12.1 minutes); tends to dive for longer under heavy pack ice than in open water; maximum documented 61 minutes under natural conditions (80 minutes when harpooned and being chased by whalers).

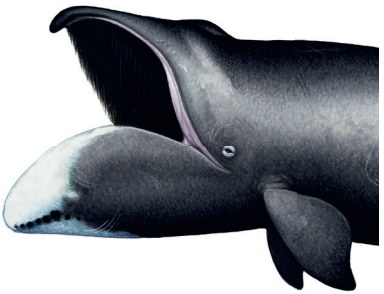
BLOW Tall, bushy, V-shaped blow up to 7m (typically 5m, but height highly variable). • Jets usually different heights. • May appear as a single blow if seen from side or in wind.

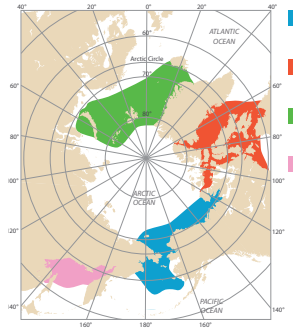
ADULT





SIZE
L: ♂ 14–17m, ♀ 16–18m;
WT: 60–90t; **MAX:** 19.8m, 107t
Calf – L: 4–4.5m (max. 5.2m);
WT: 900kg



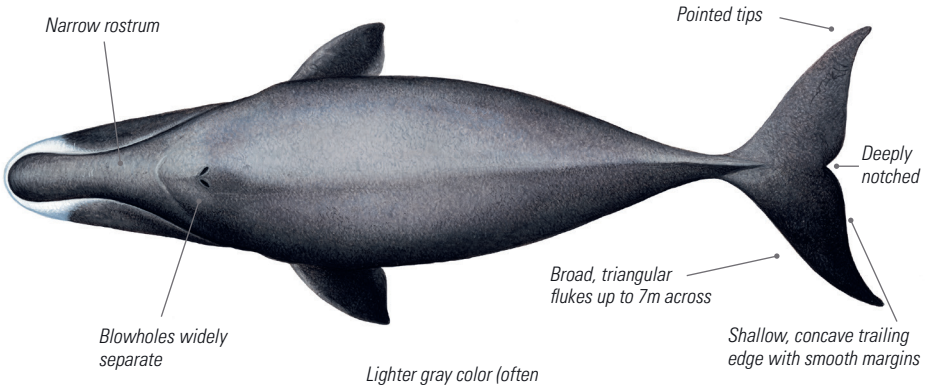


AT A GLANCE Arctic and sub-Arctic • Extra-large size • Predominantly black • Smooth back with no dorsal fin or ridge • Enormous head • V-shaped bushy blow • Two distinct humps in profile • No callosities or barnacles

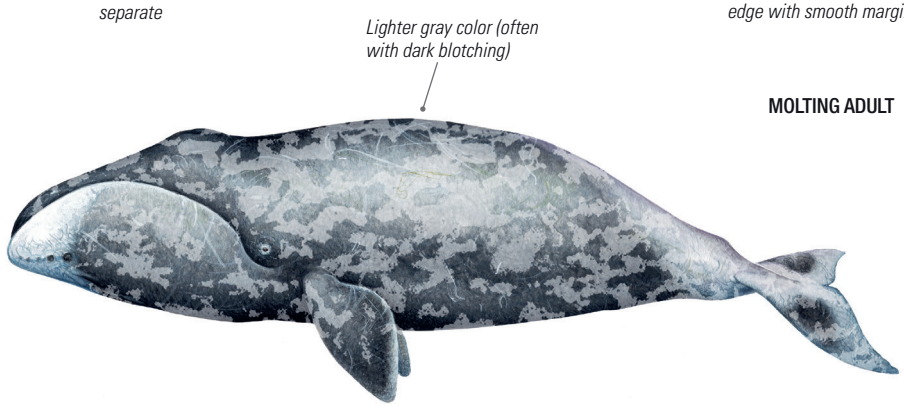
BALEEN 230–360 plates (each side of the upper jaw). Baleen plates are up to 4m (maximum 5.2m) long – the longest of any whale; dark gray to brownish black, usually with lighter fringes.

GROUP SIZE AND STRUCTURE Bowheads are usually solitary, but are sometimes seen in small groups of two to three (up to 14). There are occasional loose aggregations of as many as 60 at productive feeding grounds and during migration. In summer, groups are often segregated by sex and age. Behavior synchronized acoustically within a range of up to 100km.

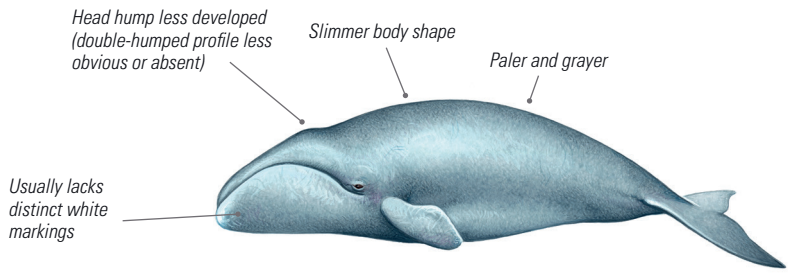
ADULT

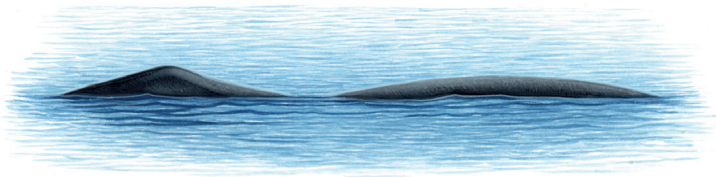


MOLTING ADULT



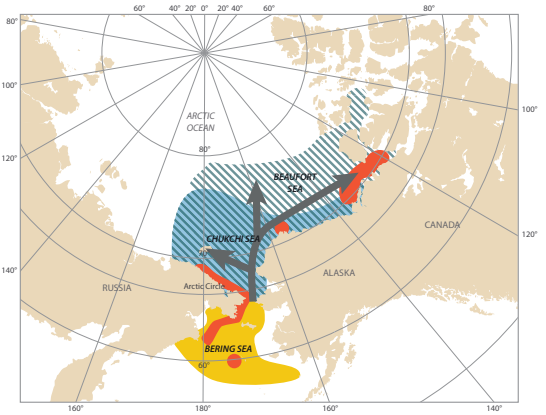
CALF



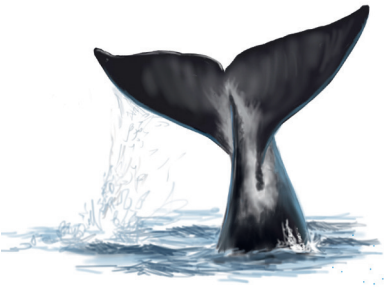


Bowhead whale baleen plate

BOWHEAD MIGRATIONS: BERING–CHUKCHI–BEAUFORT STOCK



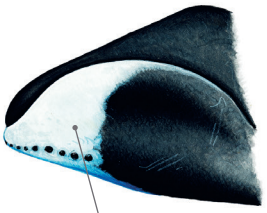
- ⟷ Apr–May: migrate north (most to eastern Beaufort Sea, some Chukotka coast)
- May–Jul: most in Cape Bathurst region in Amundsen Gulf (some as far west as Chaunskaya Bay, Chukotka)
- Mid-Jul–Oct: Beaufort sea whales migrate west to Chukotka coast, then all slowly move south into Bering Sea as winter approaches
- Nov–Mar: over the continental shelf and north of southern boundary of sea ice
- Primary feeding areas



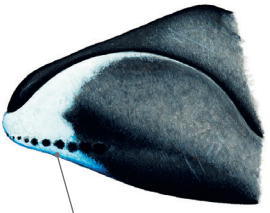
FLUKES

BREACHING

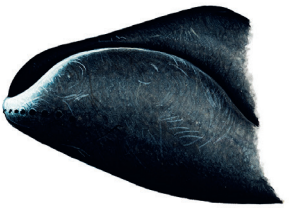
CHIN VARIATIONS



Variable amounts of white



'Necklace' of black spotting variable



GRAY WHALE

Eschrichtius robustus (Lilljeborg, 1861)

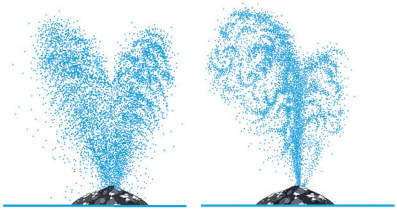
The gray whale is an inveterate traveler: the round-trip distance between its winter breeding grounds and summer feeding grounds can exceed 20,000km. Among the world's most-watched whales, it is instantly recognizable thanks to its mottled gray coloring and the small hump instead of a dorsal fin.

IUCN status Least Concern (2017). Western North Pacific sub-population Endangered (2018).
Population 19,260 (2024), 14,526 (2023) following an 'unusual' mortality event; 26,960 (2016). Western North Pacific population *c.* 175 (2020). Pre-whaling levels uncertain, but the most widely accepted estimate is 15,000–24,000 (although one DNA study estimated 76,000–118,000). Population stable (but fluctuates extensively).
Classification Mysticeti, family Eschrichtiidae.
Taxonomy No recognized forms or subspecies; two sub-populations (Eastern North Pacific or ENP and Western North Pacific or WNP), though there are no anatomical differences and there is evidence of mixing on the Mexican breeding grounds (more than 50 are known to have migrated from Russian summer feeding grounds to Baja winter breeding grounds).
Other names Grey whale (alternative spelling), grayback, California gray whale, Pacific gray whale; historically – mussel-digger, mud-digger, scrag whale, hardhead, devilfish.

DISTRIBUTION Mainly over shallow continental shelf waters of the North Pacific and adjacent seas. Primarily coastal, but does feed far from shore on the shallow flats of its feeding grounds and can navigate deep oceans on migration. The ENP population migrates between winter breeding grounds in Baja California, Mexico, and summer feeding grounds predominantly in the Bering, Chukchi and Beaufort seas; it appears to be expanding north-west as Arctic ice opens up. The WNP population migrates between winter breeding grounds (probably in the South China Sea), and summer feeding grounds in the Sea of Okhotsk and off southern and southeastern Kamchatka, Russia. There is evidence of some mixing between stocks during the winter breeding and summer feeding seasons. Historically, gray whales also occurred in the North Atlantic (see p. 47). There is one record from the South Atlantic – an individual spent nearly five weeks in Walvis Bay, Namibia, in 2013.

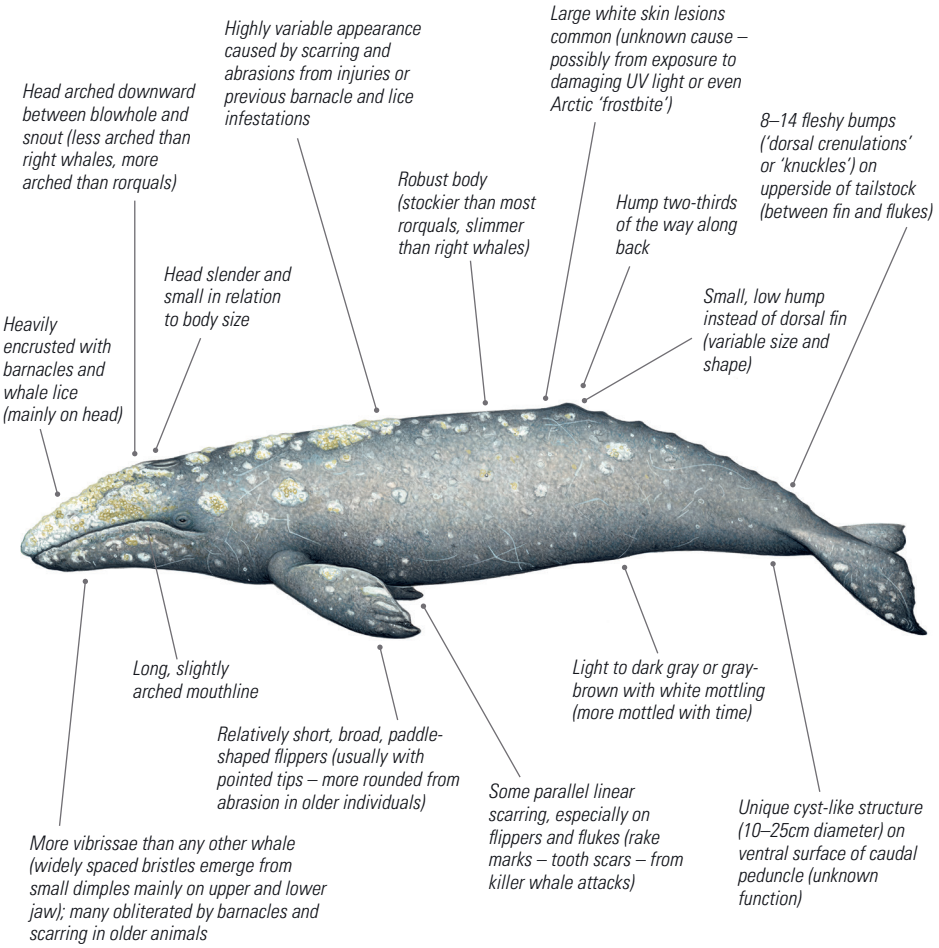
Migration Breeding and feeding grounds are widely separated, demanding long coastal migrations (spanning up to 50° of latitude). The ENP population makes an exceptionally long migration, hugging the length of the North America coast, usually within 10km of shore. The shortest return journey – between San Ignacio Lagoon, Mexico, and Unimak Pass, Alaska – is *c.* 12,000km, but many individuals swim considerably further; the longest documented migration of any mammal (excluding lost individuals) was a female gray whale that completed a 22,511km round trip between Sakhalin Island, Russia, and Baja California, Mexico. Since 2011, some individuals have remained in the Arctic for longer – exceptionally even year-round – to obtain sufficient food. This is presumed to result from reduced ice cover (due to global warming) affecting prey distribution and availability. With the retreat of sea ice, the summer distribution has also expanded in recent decades, especially to more northerly feeding areas (to at least 71°N); observations as far east

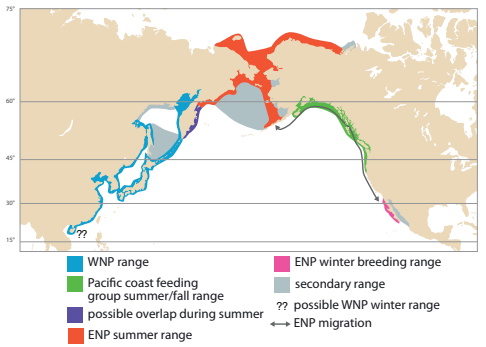
DIVE SEQUENCE On initial surfacing, head appears to slope downward from blowholes (giving appearance of shallow triangle); 'knuckles' clearly visible as back arches slightly to dive; flukes raised high into air before deep dive. • **DEPTH** Mainly seafloor feeder (prefers 30–60m; range of 3–120m, maximum known 170m) but feeds opportunistically in mid-water and at surface.
• **DURATION** On migration, 3–7 minutes; feeding dives typically 5–8 minutes; in breeding lagoons, 50 per cent of dives less than 1 minute; when resting, up to *c.* 26 minutes.



BLOW Bushy blow up to 5m (highly variable height). • May be V-shaped, tall and bushy, tree-shaped or heart-shaped (when spray falls inward) when seen from front or rear.

ADULT





AT A GLANCE Coastal or shallow waters of North Pacific and adjacent seas • Light to dark gray or gray-brown with white mottling • Large size • Low hump (instead of dorsal fin) • Head (and other parts of body) encrusted with barnacles and lice • 'Knuckles' on upper side of tailstock (between fin and flukes) • Low V-shaped or heart-shaped bushy blow • Frequently flukes upon deep dive

as the Canadian Beaufort Sea and as far west as Wrangel Island in the Chukchi Sea (and even into the East Siberian Sea) are now common. There was also a sighting in Hawai'i in 2022. The southernmost record in the North Pacific is a stranded adult in El Salvador (*c.* 14°N) in 2010.

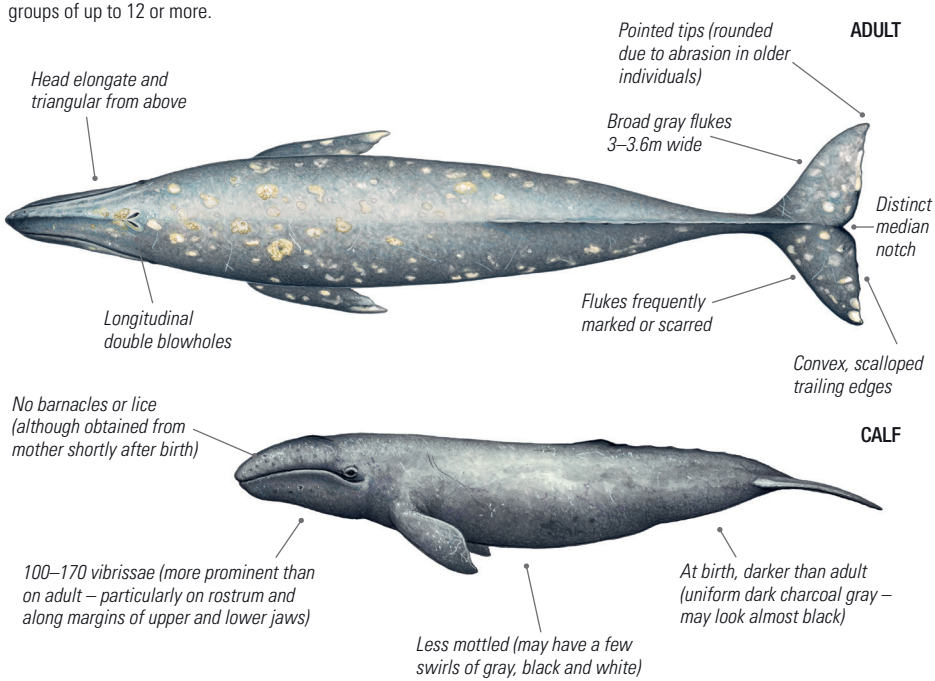
PACIFIC COAST FEEDING GROUP Some 200–240 gray whales – known as the Pacific Coast Feeding Group (Canada) or the Pacific Coast Feeding Aggregation (USA) – do not migrate all the way to the Arctic, and instead spend the summer and fall feeding in a well-defined coastal region between northern California and south-east Alaska.

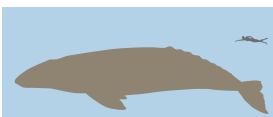
BEHAVIOR One of the most active large whales at the surface, frequently breaching (often several times in a row, exceptionally 40–50 times), spyhopping, and waving tail or flippers in the air. May appear to 'play' in the surf and rub against pebble beaches, rocks, piers and boats, possibly to ease skin irritations caused by ectoparasites. Often inquisitive and may approach boats. 'Friendly' or 'curious' behavior is most common in Mexican breeding lagoons.

FOOD AND FEEDING Variety of benthic and planktonic prey; in northern seas, benthic amphipods usually account for 90 per cent of diet; south of Aleutian Islands, main prey often planktonic mysids but also benthic amphipods and other species. Will opportunistically take pelagic species such as red crabs and crab larvae, mysids, fish eggs and larvae, baitfish and squid. Most feeding during summer, fasting thereafter (except opportunistically on migration or by pregnant or lactating females in winter). Swims slowly along seabed, sucking up sediment, then filters out prey. May also skim-feed like right whales or gulp-feed like rorquals, to exploit free-swimming prey.

BALEEN 130–180 plates (each side of the upper jaw). Among the shortest and coarsest baleen plates of any whale, just 5–50cm long.

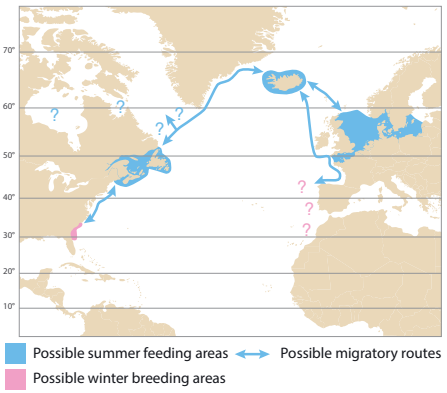
GROUP SIZE AND STRUCTURE Gray whales usually migrate alone or in twos or threes, but up to 16 can be seen in unstable groups. Mother–calf pairs tend to migrate alone. More than 1,000 can congregate in a single winter aggregation area and breeding lagoon. On summer feeding grounds, usually alone or in pairs, but several hundred may be scattered across food-rich areas. Towards the end of the feeding season, recently weaned young animals may form groups of up to 12 or more.





SIZE
L: ♂ 11–14.6m, ♀ 11.6–15m;
WT: 16–30t; late-term pregnant females can weigh an additional 5t;
MAX: 15.6m, 40t
Calf – L: 4.2–4.9m; **WT:** *c.* 1.1t

A reduction in body size has been documented in recent years, in response to climate change.



GRAY WHALE HYPOTHETICAL HISTORICAL RANGE IN NORTH ATLANTIC

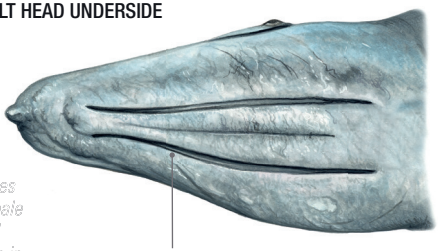
Gray whales once occurred on both sides of the North Atlantic (indeed, Lilljeborg's original description of the species in 1861 was from a subfossil skeleton found in Sweden). There is little information on their range or migratory routes, but there were possibly two discrete sub-populations (partly overlapping in Iceland). The population was predominantly extinct by the late 17th or early 18th centuries, probably due to (or at least hastened by) hunting by Basque, Icelandic and Yankee whalers. There have been five exceptional sightings of lone individuals in the Atlantic in recent years: Israel/Spain in 2010; Namibia in 2013; Morocco/Italy/France/Spain/Gibraltar in 2021; Florida in 2023; and Massachusetts in 2024.

ADULT HEAD

right side

Most gray whales are right-dominant feeders and right side of head often differs from left side due to abrasion during seafloor feeding: more heavily scarred, fewer barnacles and whale lice, shorter and more worn baleen plates

ADULT HEAD UNDERSIDE



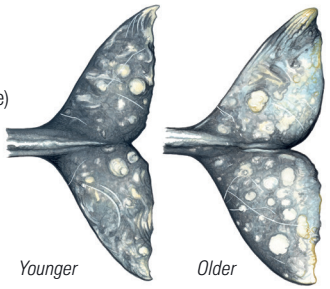
Baleen plates creamy to pale yellow (and shorter than in any other whale)

Throat has 2–7 (usually 2–3) short, deep grooves (c. 1.5m long)

FLUKES

ADULT FLUKES

(showing shape change with age)



Younger *Older*

BARNACLES AND LICE

Cryptolepas rhachianecti (whale barnacle)

Cyamus scammoni (found only on grays)

Cyamus kessleri (found only on grays)

Cyamus ceti (also found on bowheads)

Cyamus eschrichtii (found only on grays)

Gray whale calves are born free of external parasites, but rapidly acquire them as they grow. Adults have more than any other cetacean: consisting of one species of barnacle (up to 5.5cm in diameter and host-specific to gray whales) and four species of whale louse (1–2.7cm long).

BLUE WHALE

Balaenoptera musculus (Linnaeus, 1758)

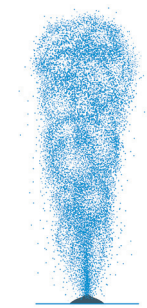
The largest animal known to have existed on Earth, the blue whale can be remarkably inconspicuous and difficult to see. But a close encounter with this true gargantuan is unforgettable. It was hunted relentlessly worldwide, until every population was severely depleted, and came dangerously close to extinction.

IUCN status Endangered (2018). Antarctic blue whale Critically Endangered (2018).
Population *c.* 10,000–25,000. Pre-whaling population *c.* 300,000, including 239,000 Antarctic blue whales. During the period 1868–1978, 382,595 were killed by commercial whalers. Increasing.
Classification Mysticeti, family Balaenopteridae.
Taxonomy Four subspecies are currently recognized: northern blue whale (*B. m. musculus*), Antarctic or 'true' blue whale (*B. m. intermedia*), northern Indian Ocean blue whale (*B. m. indica*), and pygmy blue whale (*B. m. brevicauda*); the Chilean blue whale (*B. m. chilensis*) has been proposed (but not formally accepted) as a fifth. The first two share a similar external form (though they differ genetically and acoustically).
Other names Sulphur-bottomed whale or sulphur-bottom (after the diatom film that can form on its body), Sibbald's rorqual.

DISTRIBUTION Occurs from the tropics to the edge of the pack ice in both hemispheres, though distribution is patchy and it is rare in most equatorial waters and in the center portions of major ocean basins. Most populations are migratory – moving between productive, higher-latitude summer and early fall feeding areas, and lower-latitude winter breeding and feeding areas – but at least one population (in the northern Indian Ocean) is largely resident year-round. Unlike most other baleen whales, blue whales feed year-round so food availability probably dictates distribution for the majority of the year; they will forage in productive areas anywhere. Seasonal movements can be extensive, but they are complex and poorly understood.

No specific breeding grounds have been discovered conclusively in any ocean (they do not appear to be as well defined as for humpback, gray and right whales) but they are believed to be in tropical and sub-tropical waters. One probable breeding ground is the Costa Rica Dome (or Papagayo upwelling) in the eastern tropical Pacific; there is another in the Galapagos Islands. The Gulf of California, Mexico, appears to be a nursing area and possible calving area (though far fewer have been seen in the Gulf in recent years).

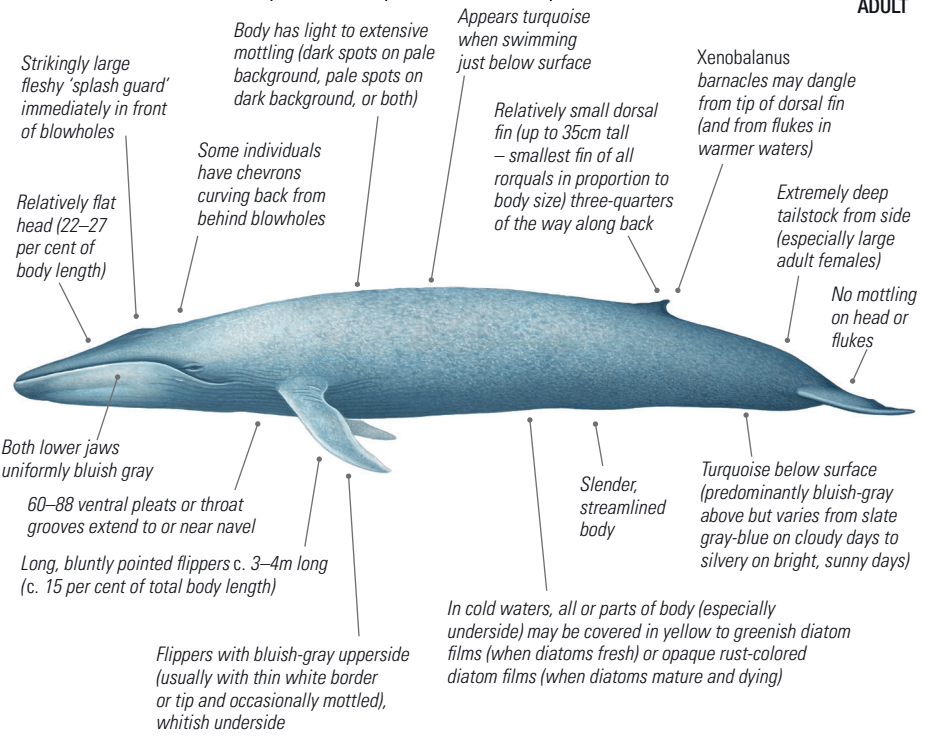
The species is mainly oceanic and associated with waters deeper than the continental shelf, roaming widely across ocean basins, but also inhabits some shelf and coastal waters (such as in Mexico's Gulf of California, the southern California Bight in the US, Canada's Gulf of St Lawrence, and Iceland's Skjalfandi Bay). It prefers habitats marked by steep submarine topographic features that enhance upwelling. There are still many gaps in our knowledge of any overlap in distribution between different subspecies, especially in the southern hemisphere.



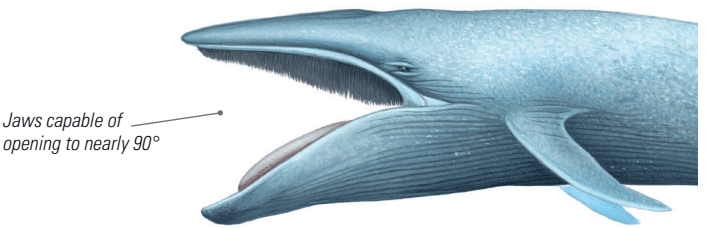
DIVE ('true' blues) SEQUENCE Distinctive blowhole 'splashguard' appears as rounded hump; massive elongated expanse of back rolls into view; many individuals raise flukes before a sounding dive. • **DEPTH** Foraging dives typically to maximum 250m but capable of 300+m (deepest recorded 370m off Isla Monserrat, Baja California); dives deeper during middle of the day, following diel vertical movements of prey to feed at shallower depths up to surface later in the day and at night; non-foraging dives typically shallower than *c.* 70m. • **DURATION** Feeding dives typically 8–15 minutes, but 20 minutes not uncommon (considerably shorter – average 3 minutes – in New Zealand); occasionally up to 30 minutes (maximum recorded 36 minutes).

BLOW Slender, columnar blow can be at least 12m high (highly variable height). • Denser and broader than that of fin or sei whale.

ADULT



ADULT ANTARCTIC/NORTHERN



AT A GLANCE Worldwide (though patchy distribution) • Extra-large size • Streamlined body shape • Mottled bluish-gray color • Turquoise underwater (when viewed from surface) • Relatively small dorsal fin three-quarters of the way along back • Prominent blowhole 'splash guard' • Extremely deep tailstock • Often raises flukes on diving

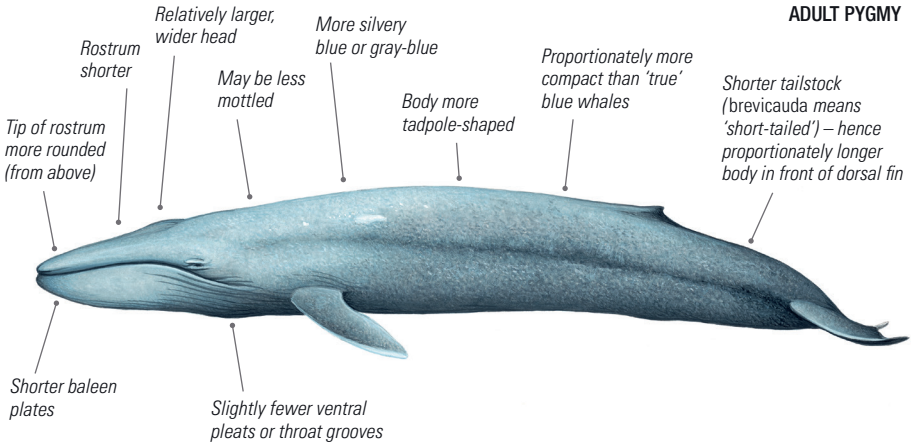
BEHAVIOR Some blue whales raise their flukes when diving (*c.* 18 per cent in the north-west Atlantic and north-east Pacific, 25 per cent in Mexico's Gulf of California and 55 per cent off Sri Lanka). Capable of burst speeds of up to 35km/hr if being chased by boats or killer whales (when swimming very fast, it sometimes almost porpoises above the surface, throwing up a large rooster-tail and pushing a mass of water in front as it flees). There have been a few observations of breaching blue whales – usually youngsters – leaping out of the water at a *c.* 45° angle, but this is very rare. Behavior around boats varies from avoidance through indifference to inquisitiveness.

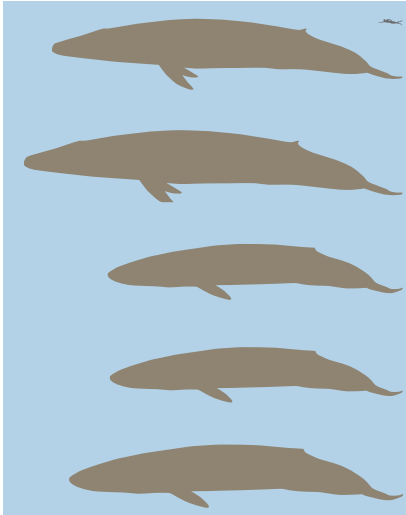
FOOD AND FEEDING Mainly euphausiid crustaceans (i.e. krill); some other crustaceans (including copepods, mysids and amphipods); occasionally small schooling fish and cephalopods. Unlike most baleen whales, probably does not fast during winter (continues to feed on breeding grounds); dives below dense layer of krill, turns upwards and lunges, rolling sideways or doing full barrel-roll and opening mouth, then drifts slowly forward as closes mouth; typically up to 6–7 lunge-feeds per dive (maximum 15); when feeding near surface, often surfaces slowly on one side or upside down (with one flipper and part of flukes above water).

BALEEN 260–400 plates (each side of the upper jaw). Baleen plates are black, broad-based, and each *c.* 1m long (slightly longer in 'true' blues, cf. pygmy blue).

GROUP SIZE AND STRUCTURE Usually alone or in pairs, though groups of 3–6 are known in some areas during summer. May be scattered in loose aggregations of 50+ on good feeding grounds.

ADULT PYGMY





SIZE – NORTHERN
L: ♂ 23–26m, ♀ 24–27m; **WT:** 70–135t; **MAX:** 28.1m, 150t
Calf – L: 6–7m; **WT:** 2–3t
Female longer than male (in all subspecies).

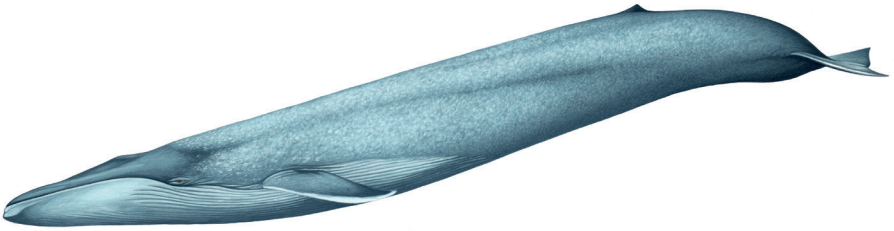
SIZE – ANTARCTIC
L: ♂ 24–27m, ♀ 24–29m; **WT:** 75–150t; **MAX:** 33.58m, 190t (though these max. sizes were estimated by non-standard measurements at whaling stations)
Calf – L: 7–8m; **WT:** 2.7–3.6t

SIZE – NORTHERN INDIAN OCEAN
L: ♂ 20–22m, ♀ 21–23m; **WT:** 70–95t; **MAX:** 24m, 130t

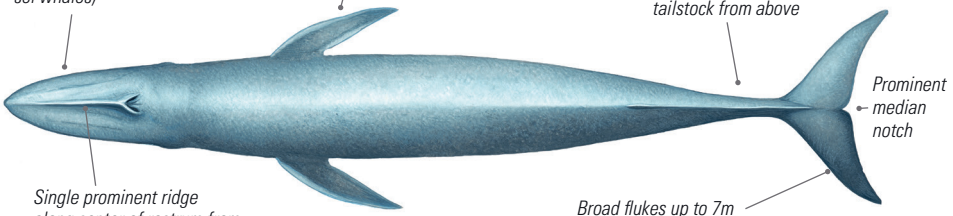
SIZE – PYGMY
L: ♂ 20–22m, ♀ 21–23m; **WT:** 70–95t; **MAX:** 24m, 130t
Tends to be shorter than 'true' blues, but with a relatively heavier body weight.

SIZE – CHILEAN
L: ♂ 22–24m, ♀ 22–24m; **WT:** unknown; **MAX:** 25.6m
Intermediate in size between pygmy and Antarctic blue whales.

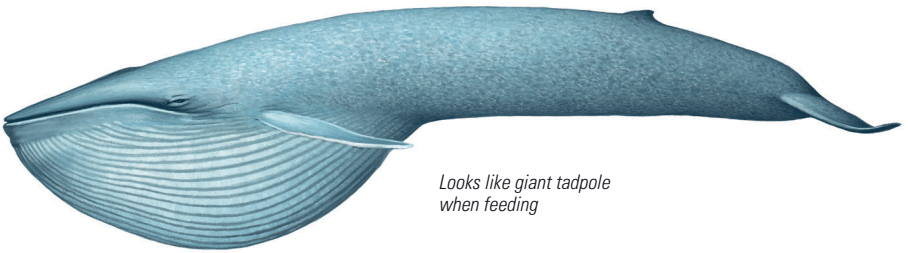
ADULT ANTARCTIC/NORTHERN



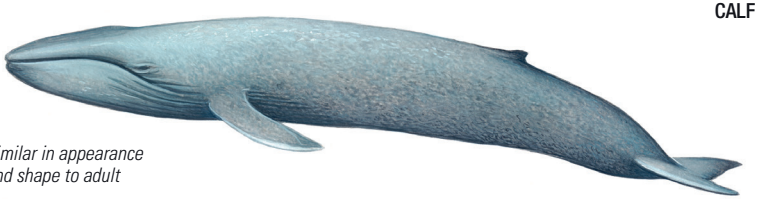
ADULT ANTARCTIC/NORTHERN

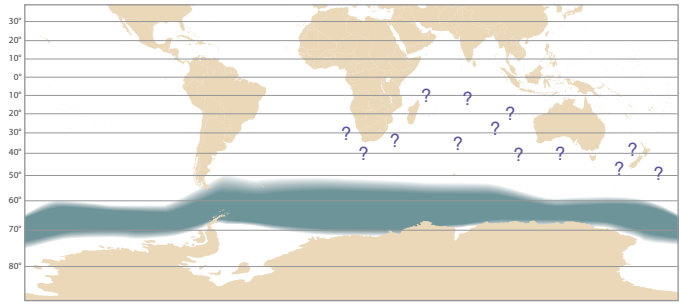


ADULT ANTARCTIC/NORTHERN



CALF

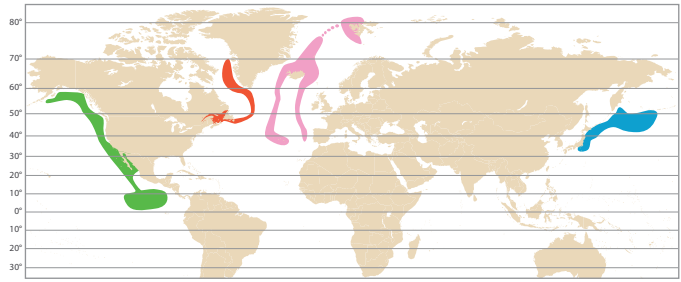




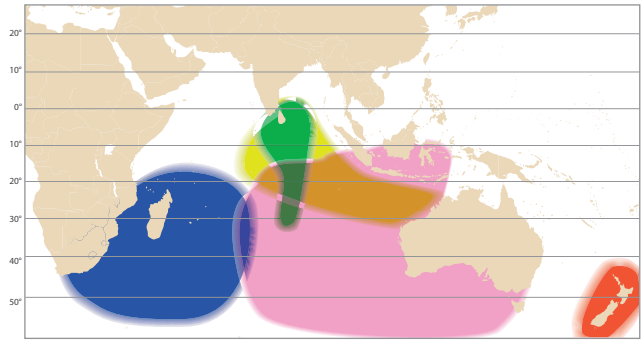
Antarctic blue whale distribution

summer range

? possible/probable winter range (present year-round in southern Indian Ocean, with peaks during winter and spring, and off west coast of South Africa)



Known and possible key ranges of the four recognized populations of northern blue whales (distinguishable acoustically but not morphologically)



Known and possible key ranges of recognized populatons of pygmy blue whales (defined by song type and range)

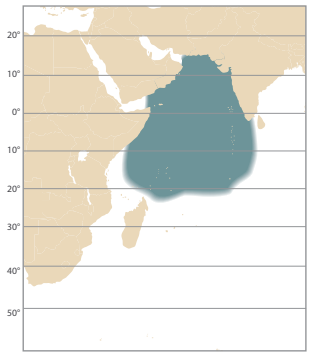
Madagascan pygmy blue whale

Possible Chagos pygmy blue whale

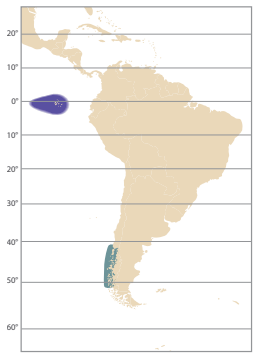
Sri Lankan pygmy blue whale

Australian pygmy blue whale

New Zealand pygmy blue whale



Northern Indian Ocean blue whale distribution



Chilean blue whale distribution

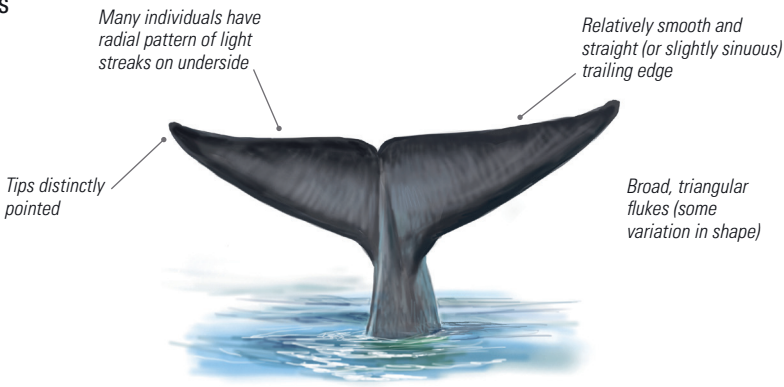
summer feeding range

possible winter range (though small numbers present in summer as well)

WHY ARE BLUE WHALES SO BIG?

Blue whales feed on krill – small animals that swarm in mind-boggling numbers (up to 1,500 individuals per square meter) but live in patches that might be hundreds or thousands of kilometers apart. Anything that feeds on krill needs to be able to swim great distances quickly and efficiently (the relative energy cost of traveling declines as body size increases); able to store energy for days, weeks or even months at a time, to fill the gaps between krill patches (about a quarter of a blue whale's body mass consists of blubbery fat reserves); and able to ingest huge numbers of the tiny prey when it is available (feeding on a few krill at a time would be far too inefficient). Therefore, the ultimate krill-eating predator is a large-bodied, big-gulping, filter-feeding whale. And there are no size constraints thanks to the buoyancy of water.

FLUKES



DORSAL FIN VARIATIONS

Highly variable dorsal fin (from small nubbin to triangular, hooked or falcate)

PSEUDO-STALKED BARNACLE *Xenobalanus globicipitis*

This curious dark, worm-like animal (up to 5cm long) hangs from the trailing edges of the tails, dorsal fins, and flippers of at least 34 cetacean species – especially baleen whales such as blues – in tropical, sub-tropical and temperate waters worldwide. It is sometimes on the rostrum, and even on baleen plates and teeth, as well. There can be just one or as many as 100 in a cluster. They burrow into the skin (and blubber) to various depths and, once attached with the shell base embedded in the host, do not move.

FIN WHALE

Balaenoptera physalus (Linnaeus, 1758)

The second-longest whale, after the blue, the fin whale is also one of the fastest (it's been dubbed the 'greyhound of the sea'). The distinctive asymmetrical pigmentation on its lower jaw – largely dark on the left and white on the right – has never been satisfactorily explained (it is also a feature of Omura's whale, and some sei and dwarf minke whales, but is more marked on the fin whale).

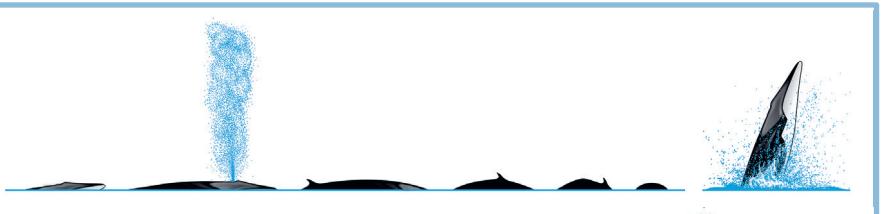
IUCN status Vulnerable (2018); Mediterranean sub-population Endangered (2021).
Population Minimum 150,000. At least 915,000 killed by commercial whalers. Increasing.
Classification Mysticeti, family Balaenopteridae.
Taxonomy Three subspecies are recognized: North Atlantic fin whale (*B. p. physalus*) in the North Atlantic, North Pacific fin whale (*B. p. velifera*) in the North Pacific, and southern fin whale (*B. p. quoyi*) in most of the southern hemisphere; pygmy fin whale (*B. p. patachonica*) off the west coast of South America has been proposed (but not formally accepted) as a fourth.
Other names Finback, finner, razorback, common rorqual, herring whale, finfish.

DISTRIBUTION In summer, found in cool temperate to polar waters worldwide, in all major oceans in both hemispheres. It is rarely found in the tropics (except in certain cool-water areas such as off Peru) or in high latitudes near the ice edge. Movements are complex: some populations appear to be migratory (especially in the southern hemisphere), with a general shift to higher latitudes for feeding in summer and lower latitudes for breeding (and less feeding) in winter, but they do not follow a simple pattern and breeding grounds remain uncertain (assuming such areas exist). Resident or semi-resident populations occur in the Gulf of California (Mexico), the Gulf of Alaska (USA), the East China Sea (off Japan), southern California and the central and western Mediterranean Sea (where there appears to be some mixing with seasonal visitors from the North Atlantic).

Density tends to be higher near or seaward of the continental shelf edge, but it is frequently seen over the shelf and close to shore where the water is deep enough. Typically, it frequents water deeper than 200m (100m in some regions) wherever topographic and oceanographic conditions concentrate prey.

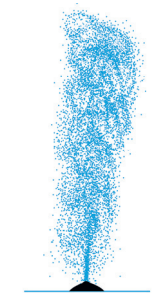
BEHAVIOR Capable of swimming exceptionally fast, reaching 37km/h for short bursts. Rarely breaches. Often forms mixed schools with blue whales and sometimes associates with pilot whales and dolphins; often seen in large feeding aggregations with humpback whales, minke whales, and other species. Typically, neither avoids boats nor approaches them, but it can be quite approachable and is sometimes curious.

FOOD AND FEEDING Opportunistic, depending on locality, season and availability. Northern hemisphere: mainly krill, also copepods, schooling fish (including herring, mackerel, cod, pollock, capelin, sardines, sand lance and blue whiting), some small squid. Southern hemisphere: almost exclusively krill, but also other planktonic crustaceans. Feeds

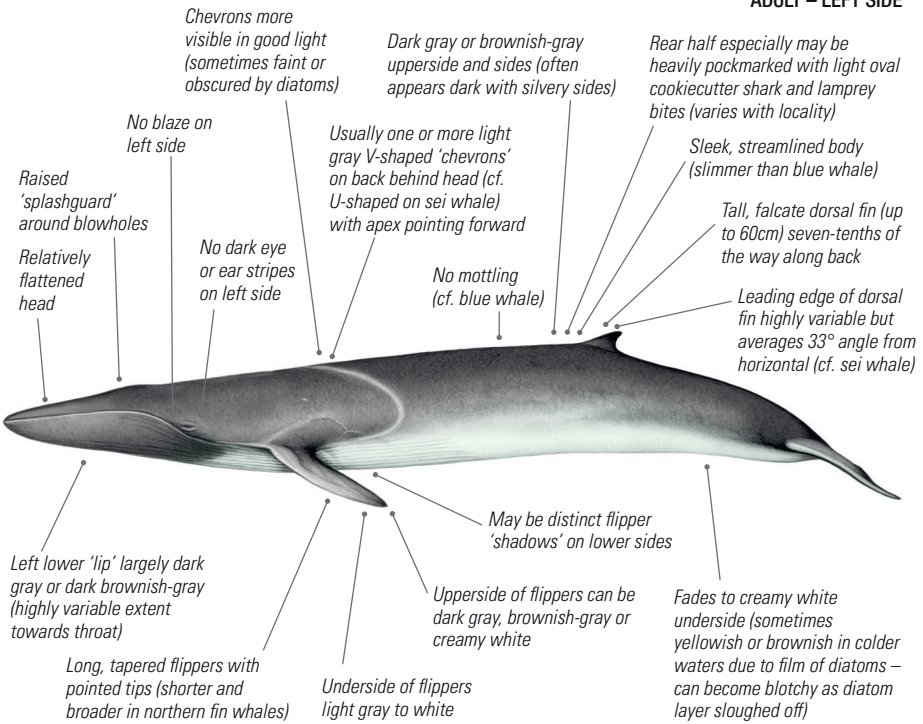


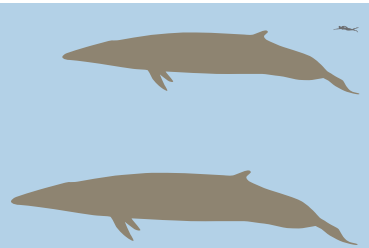
DIVE SEQUENCE Body remains low in water; dorsal fin normally appears after blow has dissipated (though blowholes and fin sometimes visible at same time, especially in younger animals); rarely shows flukes. • **DEPTH** Frequently dives to 100m (in Ligurian Sea, frequently to 180m); maximum recorded 474m; some feeding at surface. • **DURATION** Typically 3–10 minutes; maximum 25 minutes.

BLOW Very tall, columnar blow up to 10m high (highly variable height). • Typically more dense than sei whale blow. • Only blue whale blow is regularly taller (humpback and sei whale blows can occasionally be as tall).



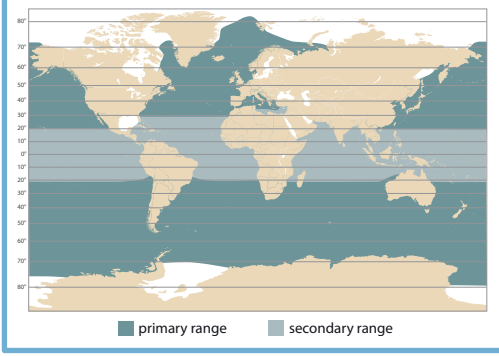
ADULT – LEFT SIDE





SIZE (NORTHERN)
L: ♂ 18–22m, ♀ 20–23m;
WT: 40–50t; **MAX:** 24m, 90t
Calf – L: 6–6.5m; **WT:** 1–1.7t

SIZE (SOUTHERN)
L: ♂ 23–25m, ♀ 24–26m;
WT: 60–80t; **MAX:** 27m, 120t
Calf – L: 6–7m; **WT:** 1–1.9t
Females are 5–10 per cent longer than males; northern hemisphere animals are smaller.



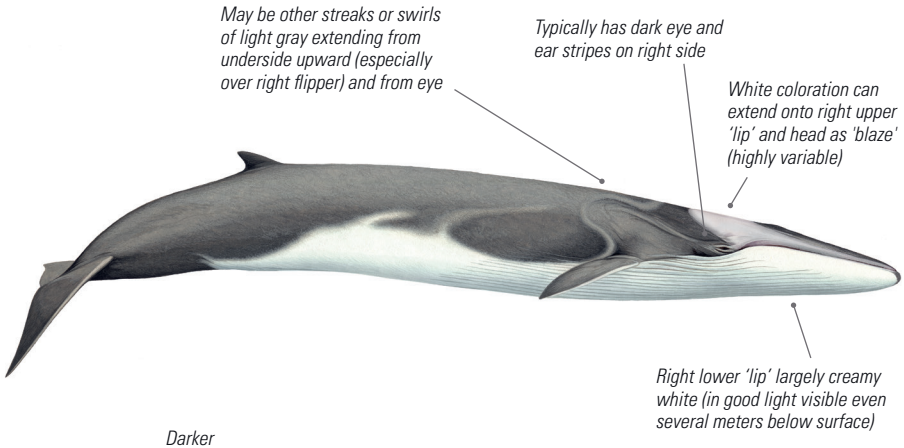
AT A GLANCE Worldwide • Dark gray or brownish-gray upperside • Extra large size • Light gray V-shaped chevrons on back • Asymmetrical lower 'lip' coloration • Single prominent ridge on rostrum • Backward-sloping dorsal fin • Rarely raises flukes on diving • Alone or in pairs or small groups

intensively in summer, consumes much less in winter; lunge-feeder (often rolling on side – typically to the right); mouth opens to almost 90° angle; no evidence of cooperative feeding.

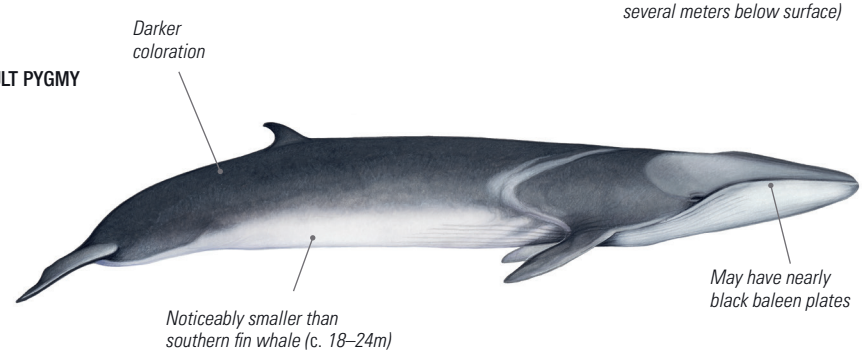
BALEEN 260–480 (average *c.* 350–390) plates (each side of the upper jaw). Northern fin whales have slightly more plates on average. Longest plates *c.* 80cm.

GROUP SIZE AND STRUCTURE Frequently seen alone, but often in small groups of 2–7; large, loose aggregations of several dozen (up to 100 in exceptional cases) may occur in highly productive areas. Group composition tends to be dynamic (with individuals frequently moving between groups).

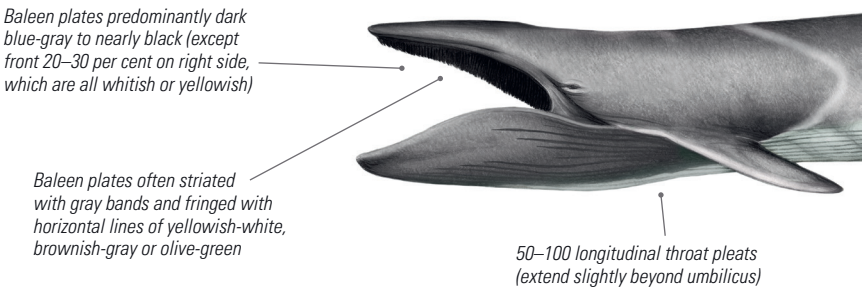
ADULT – RIGHT SIDE



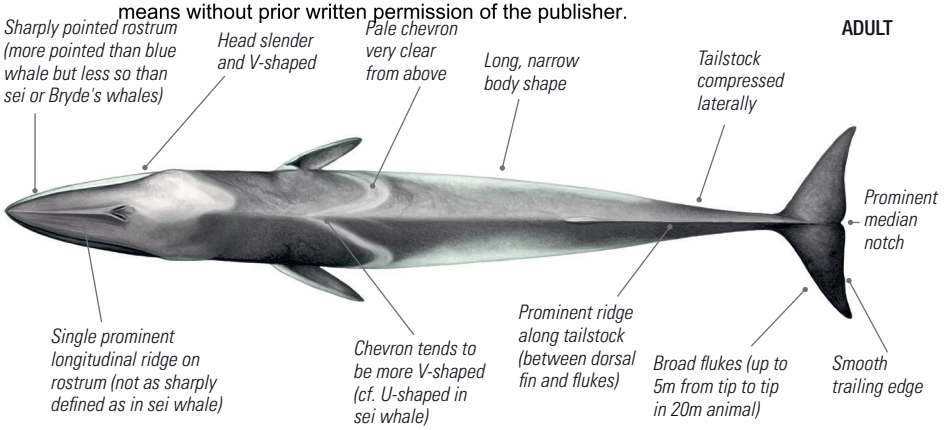
ADULT PYGMY



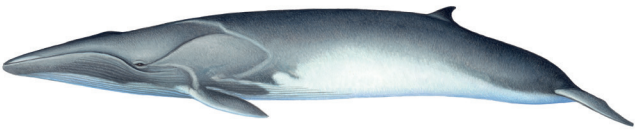
ADULT



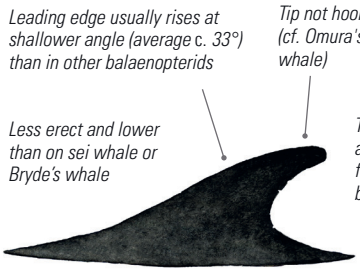
ADULT



CALF



DORSAL FIN



Shape varies from falcate and rounded to triangular and pointed (tip always strongly directed backward)

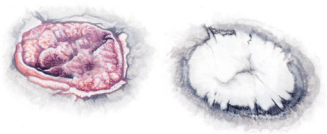
FLUKES

Underside of flukes light gray to white with dark gray border (rarely raised above surface)

FIN/BLUE HYBRIDIZATION

Hybrids between fin whales and blue whales have been reported since the 19th century, most originating from the successful mating of male fin whales with female blue whales. The offspring share characteristics from both species. Fin/blue hybridization is believed to be more common than the limited genetic evidence suggests, likely due to reduced population sizes causing a significant disruption to the whales' reproductive dynamics. There is limited evidence that, in certain circumstances, some first-generation hybrids might be fertile and able to breed with one of the parental species.

COOKIECUTTER SHARK BITES



Raw bite wound *Healed bite wound*

SEI WHALE

Balaenoptera borealis Lesson, 1828

The enigmatic sei whale is the third-longest whale, yet it is surprisingly poorly known. This is partly because in the past it was often confused in whaling records and scientific accounts with Bryde's (and possibly Omura's) whales.

IUCN status Endangered (2018).
Population *c.* 80,000. Pre-whaling population *c.* 230,000. At least 325,000 killed by whalers. Increasing.
Classification Mysticeti, family Balaenopteridae.
Taxonomy Two subspecies are recognized: northern sei whale (*B. b. borealis*) and southern sei whale (*B. b. schlegelii*).
Other names Coalfish whale, sardine whale, lesser fin whale, pollack whale, northern rorqual.

DISTRIBUTION Ranges from the tropics to the poles in both hemispheres, but most abundant in mid-latitude temperate zones (20–55° latitude). Distribution is poorly documented and most information comes from whaling catches. Migrates between higher-latitude (cold temperate to sub-polar) summer and fall feeding grounds and lower-latitude (warm temperate to sub-tropical) winter breeding grounds. Compared with some other rorquals, migrations are less extensive, feeding and breeding grounds are less distinct, and it generally does not range as far north or south. It tends to be less predictable than other rorquals. It may abruptly disappear from areas where it had occurred regularly for years, and suddenly appear in other areas where it had been absent for years (or even decades); irruptions of sei whales are known as 'sei whale years' or 'invasion years'.

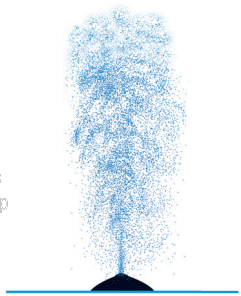
Generally considered a pelagic species with an offshore distribution along and beyond the continental shelf edge, especially in areas characterized by complex submarine topography such as seamounts and ridges. However, in some areas (e.g. Chile and the Falkland Islands) it regularly enters shelf waters and can be found at relatively shallow depths (less than 40m) and close to shore, including inside inlets and channels. Prefers sea surface temperatures of 8–18°C (occasionally up to 25°C).

BEHAVIOR One of the swiftest of the rorquals, capable of swimming at 25km/h (even 55km/h in short bursts, according to some whaling records). Breaching is rare but usually at a low angle and ends in a belly-flop. The sei whale has been seen in association with Peale's dolphins in the Falkland Islands. Most individuals avoid boats, or are indifferent, but some can be curious, repeatedly approaching and swimming alongside.

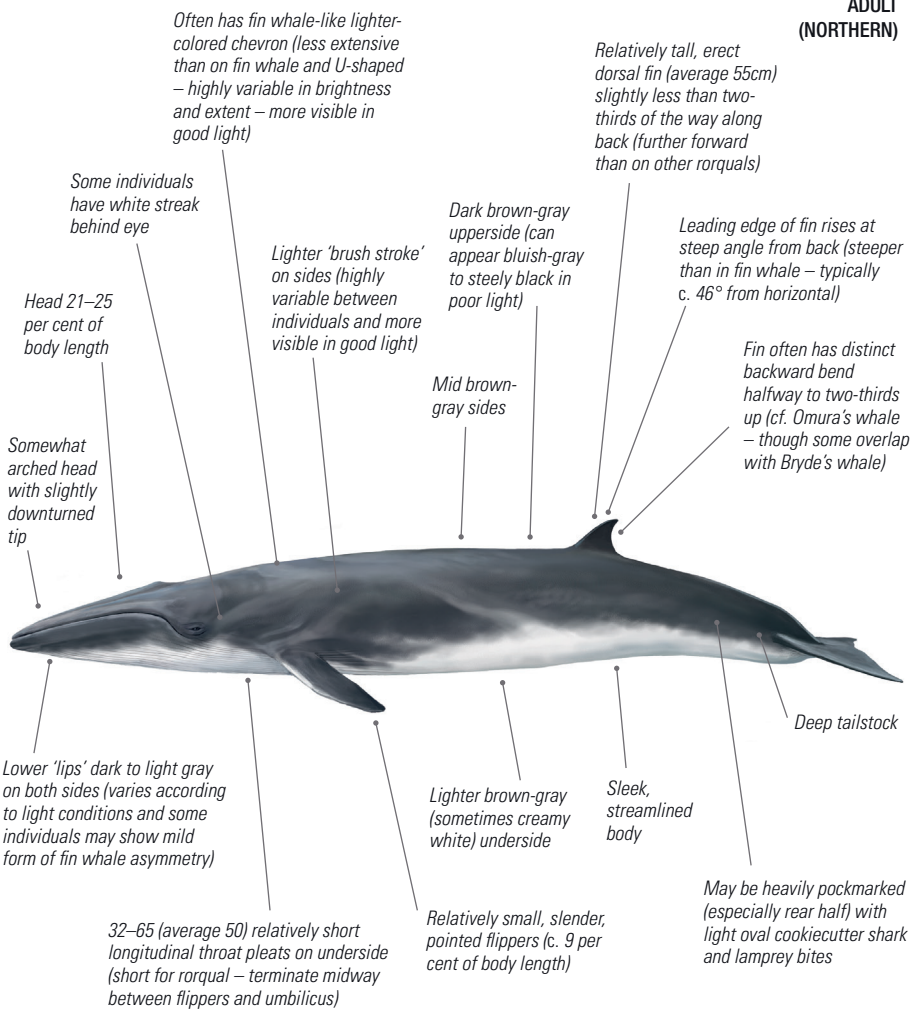
FOOD AND FEEDING Diverse diet varies regionally; mainly dense concentrations of minuscule copepods and krill, but also amphipods, squid, schooling fish (including sand lance, lumpfish, capelin, anchovy, herring, saury, lanternfish); in the North Atlantic it prefers pelagic copepods; around the Falkland Islands, mainly lobster krill. In some areas, especially when feeding near the surface, often associated with large flocks of feeding seabirds. Unusually among baleen whales, has two modes of feeding: normally 'skims' like right whales, but sometimes 'lunges and gulps' like

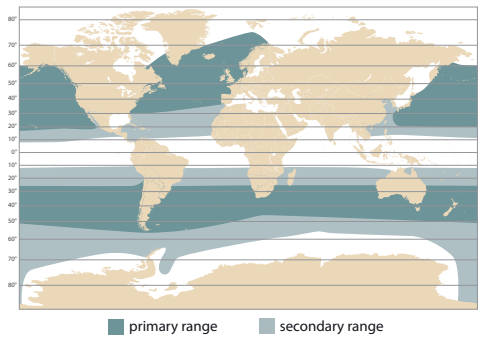
DIVE SEQUENCE Surfaces at shallow angle; tip of rostrum usually just breaks the surface; blowhole and dorsal fin often (but not always) visible at same time; tends to sink below surface (back relatively flat, though sometimes arches before deep dive); fin disappears last; very rarely, if ever, raises flukes; sometimes dives and surfaces in predictable line (remaining visible just below surface), frequently leaving long series of flukeprints on surface – but often impossible to predict and can be erratic in surfacing behavior. • **DEPTH** Varies according to vertical migrations of prey: limited evidence from Japan suggests averages *c.* 10–12m at night, *c.* 16–19m in day. • **DURATION** On feeding grounds typically 1–3 breaths at the surface over 20–30 seconds, then longer dives of up to 13 minutes.

BLOW Blow up to 9–10m high and columnar to bushy (highly variable height – typically 3–5m). • Generally more diffuse than fin whale blow.



ADULT (NORTHERN)



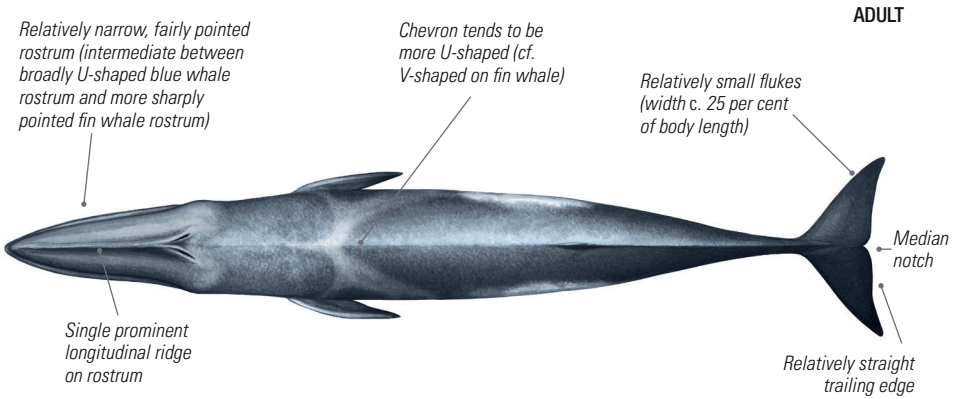


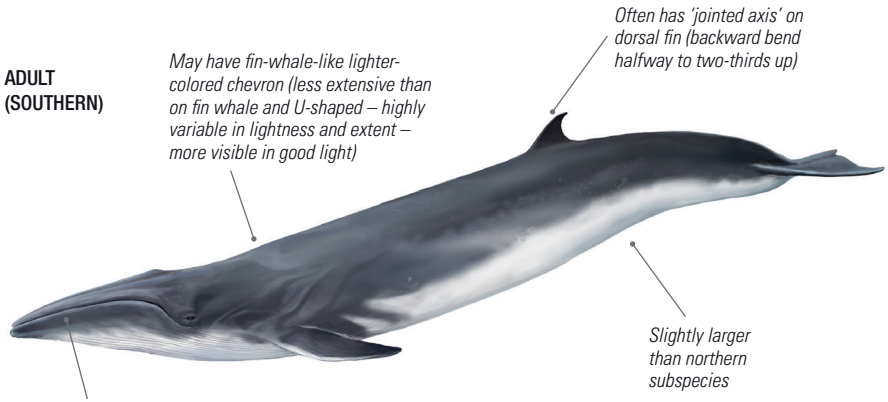
AT A GLANCE Sub-tropical to sub-polar offshore waters worldwide • Large size • Sleek body • Dark upperside, lighter underside • Pale 'brush strokes' on sides • May have fin-whale-like chevron (U-shaped) • Single prominent ridge on rostrum • Rostrum has downturned tip • Tall and erect dorsal fin (highly variable) • Symmetrical head coloring • Dorsal fin and blowholes may be visible simultaneously

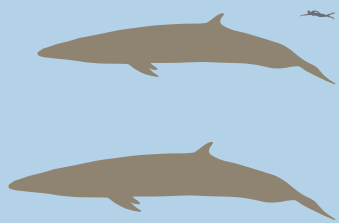
other rorquals; most feeding occurs during summer (winter consumption is low); individuals may remain in a specific feeding area for several weeks if prey densities are sufficient; there are no reports of cooperative feeding.

BALEEN 219–402 (average *c.* 350) plates (each side of the upper jaw). Longest plates *c.* 80cm; tend to be narrower than in other rorquals.

GROUP SIZE AND STRUCTURE Varies according to location and season – often seen alone or in small, fluid groups of 2–5. Larger groups may travel together, and loose aggregations numbering tens of individuals can form in productive feeding areas. Sightings of apparent social groups have been recorded, perhaps engaged in courtship behavior, involving high-speed chases and swimming on their sides with tail flukes emerging from the water.





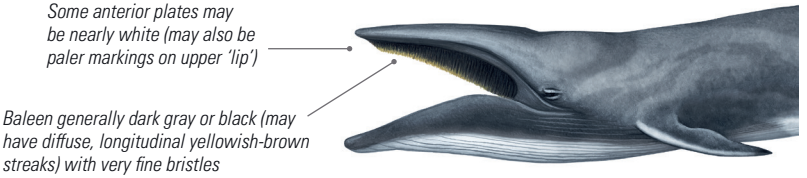


SIZE (NORTHERN)
L: ♂ 12–15m, ♀ 13–16m;
WT: 16–27t; **MAX:** 19.5m, 30t
Calf – L: *c.* 4.4–4.6m; **WT:** 600–700kg
North Pacific slightly larger than North Atlantic; female slightly larger than male.

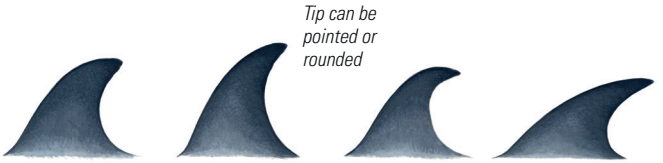
SIZE (SOUTHERN)
L: ♂ 13–16m, ♀ 14–17m;
WT: 22–38t; **MAX:** 20m, 46t
Calf – L: *c.* 4.5–4.8m; **WT:** 650–780kg
Female slightly larger than male.

CALF

ADULT



FIN VARIATIONS



FLUKES

WHAT'S IN A NAME?

'Sei whale' comes from the Norwegian 'seihval' – 'seje' for a fish known in English as pollock, saithe, coley or coalfish (a close relative of codfish) and 'hval' for 'whale'. The two species often appeared off northern Norway at the same time (presumably feeding on the same prey). It is normally pronounced 'say' or 'sigh' (the Norwegian pronunciation is halfway between the two).

BRYDE'S WHALE

Balaenoptera edeni Anderson, 1879

One of the least known and more elusive of the large baleen whales, 'Bryde's whale' is actually a complex of subspecies and possible species with taxonomic issues that are yet to be resolved. They all have one particular characteristic in common: three parallel longitudinal ridges on the rostrum (all other rorquals, except Rice's whale and some Omura's whales, have a single ridge). The name is pronounced 'bree-duss' (the correct Norwegian pronunciation) or, frequently, 'broo-duss'.

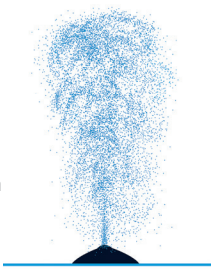
IUCN status Least Concern (2017).
Population No overall global estimate, though broad guesstimate might be 90,000–100,000. Whalers killed at least 30,000 during 1911–87. Trend unknown.
Classification Mysticeti, family Balaenopteridae.
Taxonomy Two subspecies are recognized: the larger, more pelagic and globally distributed Bryde's whale (*B. e. brydei*), otherwise known as the 'large-form Bryde's whale', 'offshore Bryde's whale' or 'ordinary Bryde's whale'; and the smaller, predominantly coastal Eden's whale (*B. e. edeni*), of the western Pacific and Indian Oceans. Given strong genetic and morphological differences, and habitat partitioning, it is highly likely that these should be given full species status (as Bryde's whale and Eden's whale, respectively). The term 'pygmy Bryde's whale' was erroneously used for whales now known to be Omura's whale, described as a new species in 2003 (but originally considered part of the Bryde's whale complex).
Other names Eden's whale, tropical whale, sittang.

DISTRIBUTION Circumglobal distribution in tropical, sub-tropical and some warm temperate waters in the Atlantic, Pacific and Indian oceans, primarily between 40°N and 40°S. Tends to concentrate in water warmer than 16°C, in areas with exceptionally high productivity. It occurs in some semi-enclosed seas, such as the Red Sea and Persian Gulf, but is not found in the Mediterranean. Primarily pelagic or coastal, depending on the subspecies (albeit with exceptions – e.g. the New Zealand coastal population is confirmed as *brydei* subspecies). No extensive north–south migrations are known, although at least some offshore animals make shorter, general movements towards lower latitudes in winter and mid-latitudes in summer. Other populations – especially inshore in mid-latitudes – remain year-round in highly productive waters (e.g. Mexico's Gulf of California, New Zealand's Hauraki Gulf and the Gulf of Thailand).

BEHAVIOR Occasionally breaches (typically coming out of the water vertically), sometimes multiple times in a row (70 times on one exceptional occasion off Ogata, Japan). When feeding, it typically makes sudden changes in direction, both underwater and at the surface. Behavior around vessels ranges from taking flight to unconcerned, or even sometimes curious.

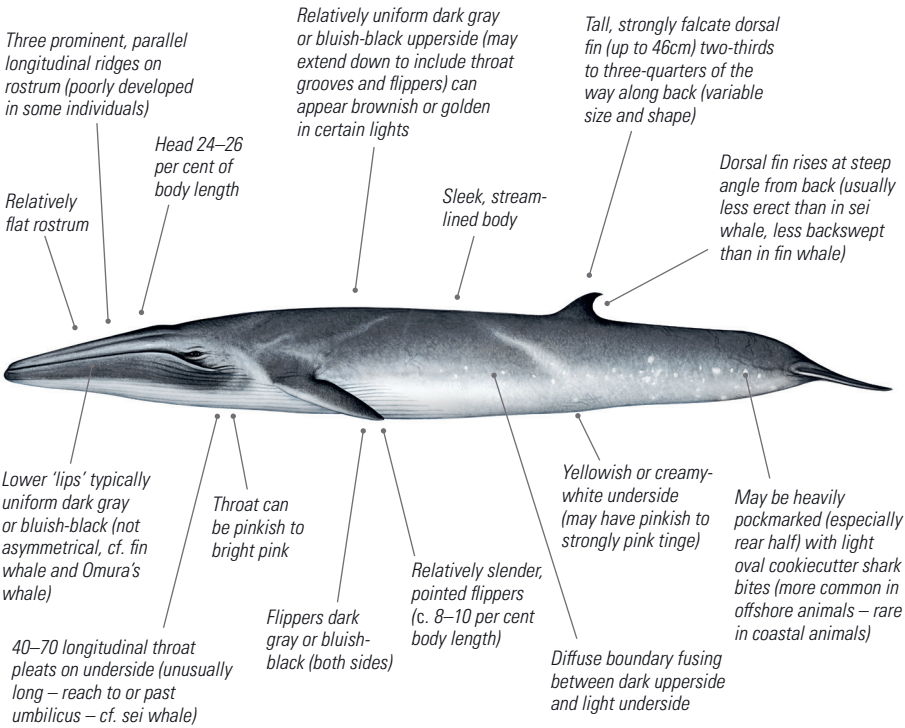
FOOD AND FEEDING Mainly small schooling fish (including pilchard, anchovy, mackerel, herring, sardine, lanternfish);

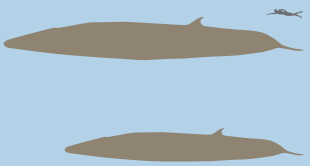
DIVE SEQUENCE Surfaces at shallow angle, tip of rostrum usually breaks surface first; dorsal fin usually seen after blowholes submerged (sometimes simultaneously, especially in younger individuals); tends to arch back before deep dive (cf. sei whale); does not raise flukes; often impossible to predict and can be erratic in surfacing behavior; frequently does not leave telltale flukeprints behind on surface (cf. sei whale). • **DEPTH** Often feeds at or close to surface; maximum 300m. • **DURATION** 5–15 minutes; maximum 20 minutes.



BLOW Blow up to 9–10m high and columnar to bushy (highly variable height – often only 3–4m and even shorter in Eden's); tends to be lower in coastal *edeni* than pelagic *brydei*. • Often exhales under water, then surfaces with little or no visible blow (especially if frightened by killer whales or vessel approaching too close).

ADULT

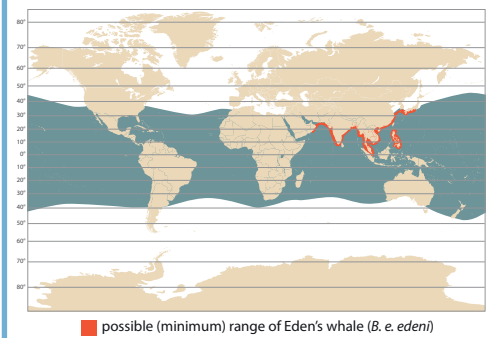




SIZE (LARGER, PELAGIC FORM – BRYDE'S)
L: ♂ 12–14.5m, ♀ 12.5–15m;
WT: *c.* 15–25t; **MAX:** 15.6m, 25t
Calf – L: 3.8–4m; **WT:** 600–750kg

SIZE (SMALLER, COASTAL FORM – EDEN'S)
L: ♂ 10–11.5m, ♀ 11–13m;
WT: 12–17t; **MAX:** 11.7m, 17t
Calf – L: 3.4–4m; **WT:** 600–700kg

Female slightly larger than male in both forms.



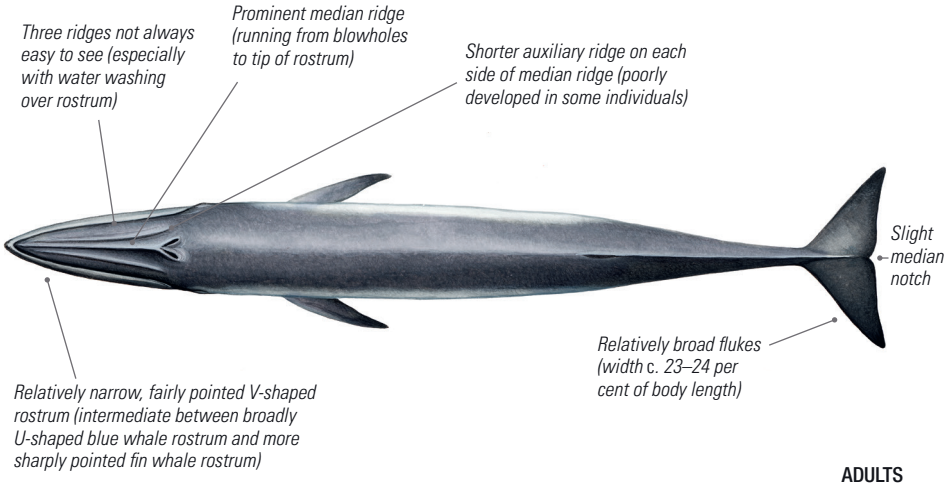
possible (minimum) range of Eden's whale (*B. e. edeni*)

AT A GLANCE Tropical to warm temperate waters worldwide • Large size • Sleek, streamlined body • Uniform dark gray upperside, lighter underside • Throat sometimes pinkish • Three parallel longitudinal ridges on rostrum • Tall, strongly falcate dorsal fin two-thirds to three-quarters of the way along back • Dorsal fin usually visible after blowholes submerged • Symmetrical lower 'lip' coloration • Typically arches back and tailstock on diving

also squid, krill, pelagic red crabs, other zooplankton; mostly an opportunistic feeder, switching prey preference according to availability, geographical location, season and year. Wide variety of foraging techniques; active lunge-feeder (often attracting seabirds and other pelagic predators); may skim-feed at surface like right whale; sometimes uses bubble nets to corral prey; in Gulf of Thailand, uses passive feeding technique among schooling fish called 'trap-feeding' or 'tread-water feeding' (there are several subtle variations in this technique but, basically, the whale hangs nearly vertically for several seconds, with mouth wide open at surface, allowing fish to swim or wash inside, then lifts head up and closes mouth); in New Zealand, uses 'chin-slaps' to aggregate zooplankton prey, then side-lunges through concentrated patch.

BALEEN 250–280 plates (each side of upper jaw) but up to 365 (including many rudimentary plates). Longest plates *c.* 50cm; may be more slender in Eden's whale.

GROUP SIZE AND STRUCTURE Generally seen alone, but sometimes in small groups of 2–3, and occasionally loose aggregations of 10–20 on prime feeding grounds.



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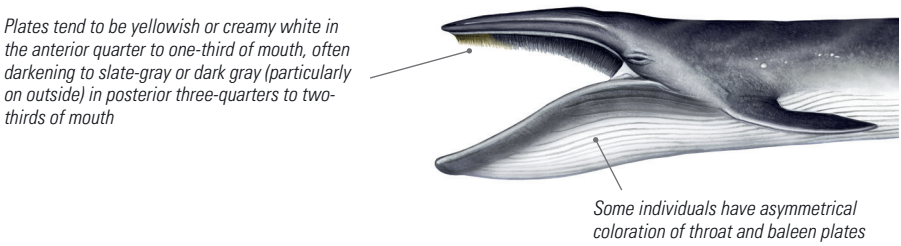

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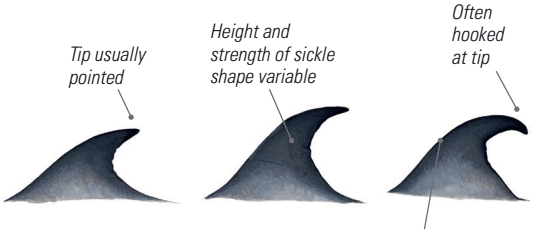
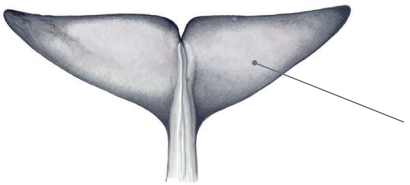
FIN VARIATIONS



Fin of some individuals may have slight backward bend halfway to two-thirds up (cf. Omura's whale – not as obvious as in sei whale)

FLUKES



THE BRYDE'S WHALE COMPLEX

The so-called 'Bryde's whale complex' originally comprised a single species, Bryde's whale. But research has revealed that it consists of several different species: the original Bryde's whale, Omura's whale (formally separated in 2003) and Rice's whale (formally separated in 2021). Bryde's whale itself currently consists of two subspecies – or species – and the precise taxonomic status of these is still in dispute.

Eden's whale

Appears to be restricted to the northern Indian Ocean and western Pacific Ocean, roughly between the equator and 40°N. Countries where genetic studies confirm its presence include India, Bangladesh, Myanmar, Singapore, Thailand, Indonesia, the Philippines, China, Hong Kong and as far as south and southwestern Japan. It is uncertain if its range extends to Australia. There are no verified records from the Atlantic Ocean. Primarily in coastal waters (with some records very close inshore) and over the continental shelf; it has not been recorded offshore. It seems to be resident year-round and there is no evidence of long-distance migrations.

Bryde's whale

Circumglobal distribution in tropical and sub-tropical waters of the Pacific, Atlantic, and Indian Oceans, and the Caribbean Sea. Genetic studies confirm its presence in many countries outside the range of Eden's whale. The subspecies in Australia is still uncertain, but in New Zealand it has been confirmed as *brydei*. All Bryde's whales in the Atlantic Ocean are believed to be this form. Primarily offshore, but its distribution is more cosmopolitan than previously thought and appears to include some coastal habitat (the resident population in the Hauraki Gulf, New Zealand, for example, is primarily coastal). Some offshore populations are known to migrate, but these migrations appear to be relatively short for baleen whales (typically over 20°–30° latitude). Inshore populations tend to be resident year-round. Recent genetic studies demonstrate that broadly sympatric populations of migratory offshore Bryde's whales and resident inshore Bryde's whales off South Africa – which also differ in size and prey preference – are this large-form Bryde's.

RICE'S WHALE

Balaenoptera ricei Rosel, Wilcox, Yamada and Mullin, 2021

A small population of whales belonging to the 'Bryde's whale complex' has been known in the Gulf of Mexico since an individual stranded there in 1965. But recent research reveals that these whales are genetically and morphologically distinct (and geographically separated from other Bryde's whale populations). They were identified as belonging to a new species in 2021.

IUCN status Critically Endangered (2021). With such a small population and limited range, arguably the most endangered whale species in the world.
Population Current best estimate 51, based on surveys conducted in 2017–18 (which indicates that the number of mature Rice's whales could be as few as 26). There are no historical estimates, but the population is believed to be decreasing).
Classification Mysticeti, family Balaenopteridae.
Taxonomy The genetic differences between Rice's whale and Bryde's whale are two to three times greater than the differences between the three recognized species of right whale. No recognized forms or subspecies.
Other names Gulf of Mexico Bryde's whale, Gulf of Mexico whale.

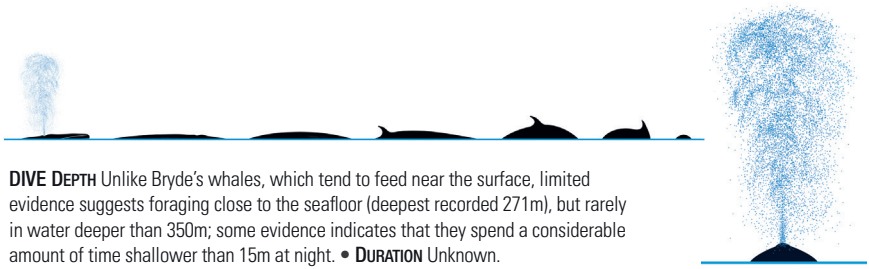
DISTRIBUTION Appears to be focused predominantly around the continental shelf break near the De Soto Canyon, especially off the northwestern coast of Florida, in the northeastern Gulf of Mexico. The majority of sightings occur where the seafloor varies between 100m and 400m in depth. There have also been two possible sightings (in the early 1990s) and one confirmed sighting (in 2017) in the western Gulf of Mexico off Texas, and unique vocalizations have been heard south of Louisiana and Texas. These records suggest three possibilities: some individuals venture out of their core range into the western side; there is another, as yet unidentified, population; or, most likely, these are the remnants of a formerly more broadly distributed population. Whaling data does suggest a wider past distribution (records of 'finback' whales from the north-central Gulf, south of the Mississippi, and in the southern Gulf on the Campeche Banks are almost certainly misidentified Rice's whales). There have been no confirmed sightings outside the Gulf of Mexico, and it is believed to be non-migratory. Single strandings in South Carolina and North Carolina are believed to have been extralimital strays. It is the only year-round resident baleen whale in the Gulf of Mexico and there is no genetic evidence for any other Bryde's-like whale species or subspecies in the Gulf. The nearest confirmed populations of other members of the Bryde's whale complex are in the southern Caribbean south to Venezuela and Brazil, the eastern North Atlantic and the eastern South Atlantic off South Africa. Sightings and strandings of all other baleen whale species in the Gulf are rare and considered extralimital. During the 181 sightings, the whales were observed almost entirely in water 151–352m deep (with two exceptions, in 117m and 408m respectively). A satellite-tagged individual remained in waters 100–400m deep for a month.

BEHAVIOR Unknown, but likely similar to other members of the Bryde's whale complex.

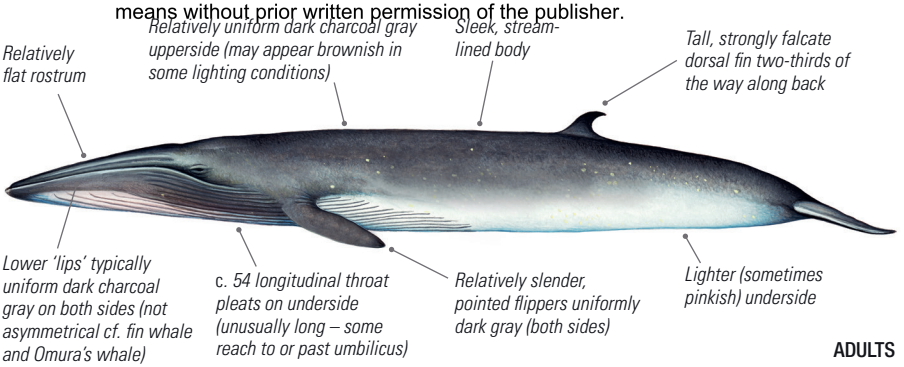
FOOD AND FEEDING Feeds primarily on small schooling fish, especially silver-rag driftfish, which occur in large shoals in water depths of 50-500m but particularly near the muddy seabed.

BALEEN *c.* 264 plates (each side of the upper jaw).

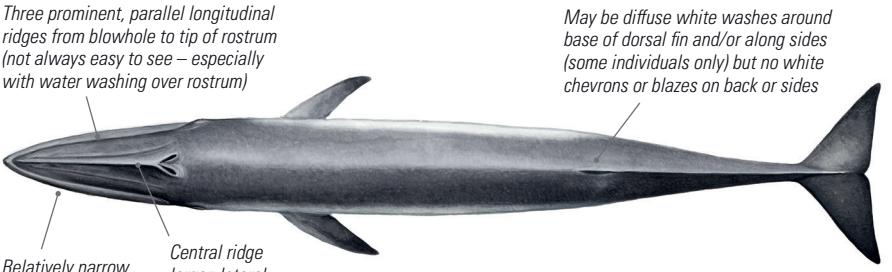
GROUP SIZE AND STRUCTURE Generally seen alone, or in pairs. May occasionally form larger groups in productive feeding areas.



DIVE DEPTH Unlike Bryde's whales, which tend to feed near the surface, limited evidence suggests foraging close to the seafloor (deepest recorded 271m), but rarely in water deeper than 350m; some evidence indicates that they spend a considerable amount of time shallower than 15m at night. • **DURATION** Unknown.

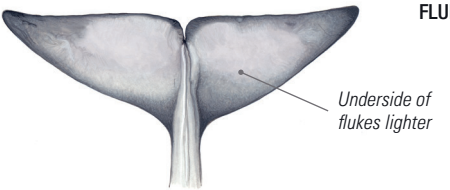


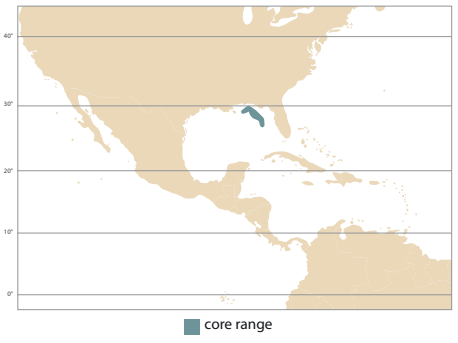
ADULTS



SIZE
L: ♂ 11.26m (largest adult measured; an immature was 11.05m); ♀ 12.65m (largest adult measured);
WT: possibly *c.* 12–17t
Calf – L: 4.7m (one calf of unknown age that stranded alive); **WT:** unknown
Females presumed to be slightly larger than males (as in other rorquals).

FLUKES





AT A GLANCE Core range in the northeastern Gulf of Mexico • Larger than Omura's whales, smaller than Bryde's whales (roughly the same size as Eden's whales) • Sleek, streamlined body • Uniform dark charcoal gray upperside, lighter to pinkish underside • Three parallel longitudinal ridges on rostrum • Tall, strongly falcate dorsal fin two-thirds of the way along back • Symmetrical lower 'lip' coloration

COMMON MINKE WHALE

Balaenoptera acutorostrata Lacépède, 1804

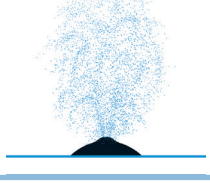
The common minke whale is the smallest rorqual and the second smallest of all the baleen whales (after the pygmy right whale). It has three disjunct populations: in the North Atlantic, the North Pacific and the southern hemisphere.

IUCN status Least Concern (2018).
Population Minimum *c.* 200,000 mature individuals. At least 170,000 killed by whalers. Trend unknown.
Classification Mysticeti, family Balaenopteridae.
Taxonomy Two subspecies are currently recognized: North Atlantic minke whale (*B. a. acutorostrata*); and North Pacific minke whale (*B. a. scammoni*). The 'dwarf minke whale' may be a third valid subspecies.
Other names Northern minke whale, dwarf minke whale; formerly lesser/least rorqual, little piked whale, pikehead, lesser finback, sharp-headed finner, little finner.

DISTRIBUTION In the northern hemisphere, the North Atlantic minke whale ranges to at least *c.* 80°N during summer. The wintering grounds – probably in the southern North Atlantic – are poorly known but extend at least to the Caribbean and possibly West Africa. The North Pacific minke whale ranges to at least 70°N during summer. The wintering grounds – probably in the southern North Pacific – are also poorly known but extend to at least 15°N. Northern minke migrations are not as well defined as in some other baleen whales. There is a tendency for the distribution to shift from high-latitude summer feeding areas to lower-latitude winter breeding areas (although some individuals are resident in cold temperate regions year-round). During summer, they appear to be most abundant in cold temperate to polar waters (where they are known to penetrate areas with extensive ice floes and polynyas). At this time of year, they occur in inshore coastal waters more frequently than any other rorqual, and will enter bays, inlets, fjords and even some large rivers (such as the St Lawrence River, Canada). Winter sightings are uncommon, suggesting that when in lower latitudes they are mainly offshore. Some populations – such as around the Isle of Mull (Scotland, UK) and the San Juan Islands (Washington, USA) – have high site fidelity, with certain individuals returning each year to feed in particular locations.

The dwarf minke occurs only in the southern hemisphere and may or may not be circumglobal (relatively little is known about its distribution). Occurs in both coastal and offshore waters off South Africa, southern Mozambique, Australia, New Zealand (North and South Islands), New Caledonia, eastern South America (from northern Brazil to northern Argentina), and Chilean Patagonia. Records cover most of the year (March–December), but there are strong indications that at least some populations are migratory. The only known predictable aggregation of dwarf minke whales is in winter off the northern Great Barrier Reef in Australia, predominantly in June–July. The most northerly confirmed records are from 2°S off the northern coast of Brazil and 11°S in the western Pacific off Australia. It partly overlaps with the Antarctic minke whale during summer in the sub-Antarctic but is not as polar. Most sightings in the sub-Antarctic have been in December–March south of Australia and New Zealand – between 55°S and 60°S, with one record as far as 65°S – probably because this is where there has been most research effort. However, it is also likely to occur in sub-Antarctic waters south of South America and South Africa. It is not known from the northern Indian Ocean.

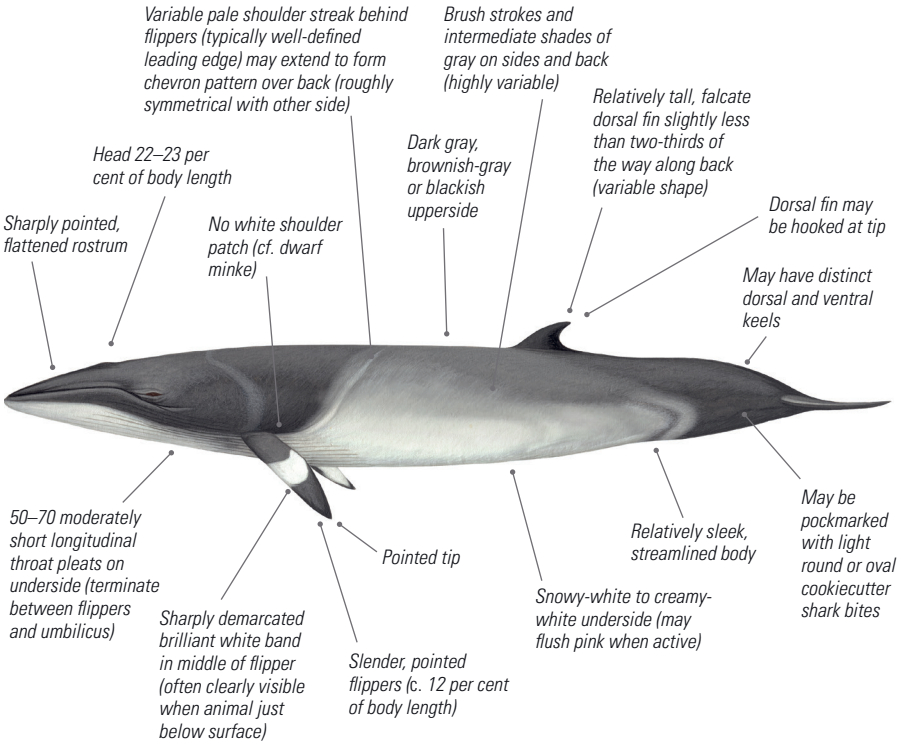
BEHAVIOR Breaches fairly frequently, sometimes completely clearing the water, and performs other aerial behaviors such as head rises and spyhops (particularly in icy areas). Rarely lobtails or fipper-slaps. Can be quite curious towards

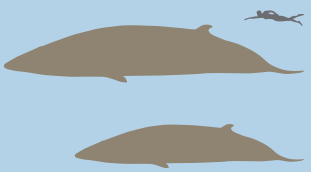


DIVE SEQUENCE Surfaces at a distinct angle *c.* 20–40°; tip of rostrum pointed up and distinctively breaks surface first; blowhole and dorsal fin generally visible at same time; typically arches back and tailstock quite high before sounding dive; does not raise flukes. • **DEPTH** Feeds mostly at or near surface; dwarf minkes observed at 20–40m. • **DURATION** Northern typically 3–10 minutes, maximum 20 minutes; dwarf minke up to 12.5 minutes.

BLOW Diffuse, upright blow up to 3m high (height highly variable), more bushy than columnar. • Generally less distinct than any other large whale blow (often invisible).

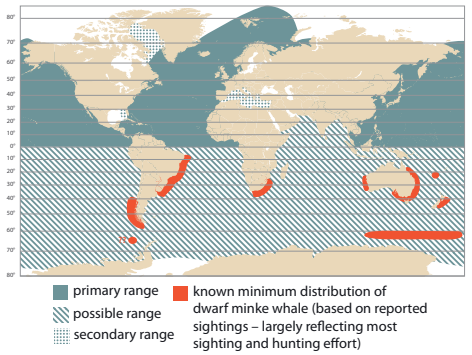
ADULT NORTHERN HEMISPHERE





SIZE (NORTH PACIFIC AND NORTH ATLANTIC)
L: ♂ 7.5–8.5m, ♀ 8.5–9.5m;
WT: 6–8t; **MAX:** 9.8m, 9.2t
Calf – L: 2.2–2.8m; **WT:** 350–450kg
The female is longer than the male in all subspecies.

SIZE (DWARF)
L: ♂ 6–7m, ♀ 6.5–7.2m;
WT: 4–5t; **MAX:** 7.8m, 6.4t
Calf – L: 2–2.3m; **WT:** 250–350kg



AT A GLANCE Tropics to poles worldwide • Medium size • Dark gray, brownish-gray or blackish upperside, white underside • Variable swathes of lighter gray on sides and back • Sharply pointed rostrum breaks surface first • Single longitudinal ridge on rostrum • Relatively tall, falcate dorsal fin two-thirds of the way along back • Unique, bright white flipper bands •Indistinct or invisible blow

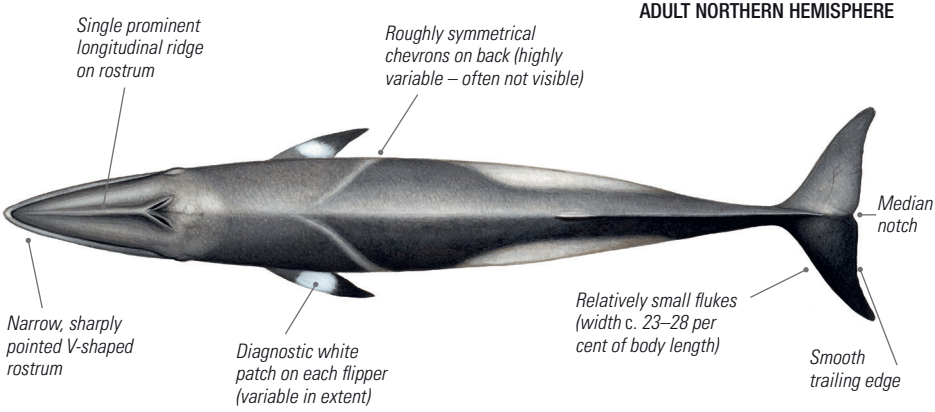
boats in some parts of the world – and will swim around stationary vessels or alongside moving vessels for minutes or even hours at a time. Elsewhere, it can be difficult to approach.

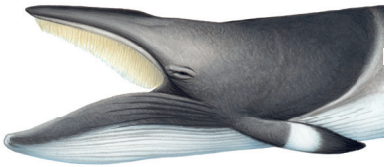
FOOD AND FEEDING Northern hemisphere minkes feed on wide variety of small schooling fish (including sand lance, salmon, capelin, cod, mackerel, sprat, pollack, whiting, herring, haddock, anchovy and lanternfish) and small invertebrates (including euphausiids and copepods). Dwarf minkes prefer lanternfish, but opportunistically feed on other fish and possibly krill. Feeding technique varies significantly according to prey and location; entrapment maneuvers include circles, gyres, ellipses, figures-of-eight, hyperbolas, head-slaps and underwater blows; engulfing maneuvers include oblique, lateral, vertical and ventral lunges.

BALEEN 231–290 plates in North Pacific, 270–325 in North Atlantic, 200–300 in dwarf (each side of the upper jaw). Longest plates *c.* 21cm; in northern animals, usually white, creamy or yellowish; in dwarf minke, about half of the plates posteriorly appear dark gray or brown (due to a narrow, dark fringe); all have symmetrical plate coloration.

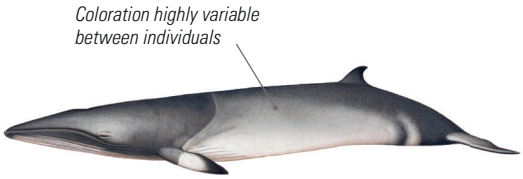
GROUP SIZE AND STRUCTURE Typically solitary, sometimes in twos or threes, but there can be larger, temporary aggregations in good feeding areas. Social structure appears to be complex, with evidence for some segregation by age, sex and/or reproductive class.

ADULT NORTHERN HEMISPHERE



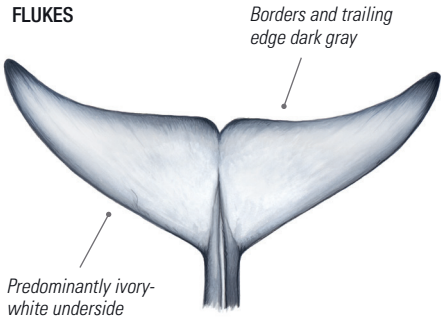


CALF NORTHERN HEMISPHERE



ADULT NORTHERN HEMISPHERE FLIPPERS

FLUKES



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INDEX