

## 2.3 SUBORDER MYSTICETI - Baleen Whales

### MYSTICETI

There are 4 families of baleen whales. Mysticetes are universally large (with females growing larger than males); the smallest is the pygmy right whale (c 7 m long), and the largest is the blue whale (the largest animal ever to live, up to 33 m or more in length and 160 t in weight). The baleen whales have a double blowhole, a symmetrical skull, and a sternum consisting of a single bone. In the mouth there is baleen (stiff plates of keratin), instead of teeth. Baleen whales are batch feeders, taking in great quantities of water in a single gulp, and then using the fringes on their baleen plates to filter small schooling fish or invertebrates from the water. Nearly all mysticetes make long-range seasonal migrations.

#### 2.3.1 Guide to Families of Baleen Whales

##### BALAEINIDAE

##### Right and Bowhead Whales (3 species in 2 genera) p. 42

The right and bowhead whales are large and chunky, with heads that comprise up to one-third of their body length. They lack a dorsal fin or any trace of a dorsal ridge. Overall, they tend to be far less streamlined than other baleen whales. Right and bowhead whales have developed a relatively passive skim-feeding technique, and tend to be slower than other whales. The baleen plates are the longest and have the finest fringes of the 4 mysticete families. Viewed in profile, the mouthline is extremely arched and the skull profile is highly convex; all 7 neck vertebrae are fused together.

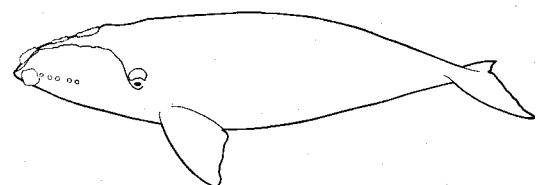


Fig. 140 Balaenidae

##### NEOBALAEINIDAE

##### Pygmy Right Whale (1 species in 1 genus) p. 48

The single species in this family, the pygmy right whale of the Southern Hemisphere, is poorly known. Although it is in some ways intermediate between the Balaenopteridae and Balaenidae, the pygmy right whale is more closely related to the Balaenidae. Much smaller than the right and bowhead whales (< 7 m), it is slender, with a moderately arched mouthline. The head represents only about one-quarter of the total length, and there is a short falcate dorsal fin set behind midback. There is also a pair of shallow throat grooves. The skull is also somewhat intermediate; the rostrum is moderately arched (reminiscent of balaenids), but is much wider at its base (reminiscent of balaenopterids).



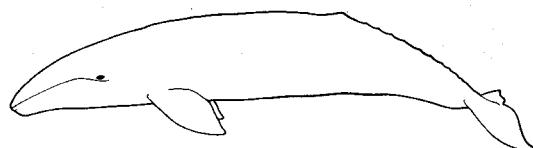
Fig. 141 Neobalaenidae

**BALAEOPTERIDAE****Rorquals** (6 species in 2 genera) p. 50

This family contains the largest animals ever to live; all balaenopterids have adult body lengths of over 7 m, and some are much larger. The rorquals are streamlined animals (the humpback whale somewhat less so than the others), with a series of long pleats extending from the snout tip to as far back as the navel on the ventral surface. Balaenopterids are fast and active lunge feeders; their morphology allows them to open their jaws very widely and distend their throats to take in huge mouthfuls of water during feeding. The baleen plates are of moderate length and fringe fineness. Density and fringe diameter vary among species, and along with plate number and width to length ratio, are diagnostic characters. Rorquals have dorsal fins (varying in size and shape) set behind the midpoint of the back. The upper jaw has a relatively flat profile, a feature reflecting the structure of the skull. Within a given feature, differences among balaenopterids are often subtle variations on a theme, rather than class distinctions. Therefore, information on many features may be needed to distinguish among them and reliance on a single character for identification is discouraged.

**Fig. 142 Balaenopteridae****ESCHRICHTIIDAE****Gray Whale** (1 species in 1 genus) p. 62

The gray whale was once present in both the Atlantic and Pacific oceans, but has been exterminated in the North Atlantic in the last few hundred years. This monotypic family is in some ways intermediate between the Balaenidae and the Balaenopteridae. The gray whale is stocky and has an arched jaw, but neither of these characters is as pronounced as in the right whales. Gray whales are slow-moving coastal animals that suck prey from the bottom sediments. Gray whales have the shortest and coarsest baleen of all species, a feature that probably reflects both the size of their prey and their tendency to take in gravel, sand, and other debris during feeding. There are 2 to 5 short throat creases, a dorsal hump followed by a series of knobs or knuckles along the dorsal surface of the tail stock, and only 4 digits in the flipper.

**Fig. 143 Eschrichtiidae**

### 2.3.2 FAO Species Identification Sheets

*Eubalaena glacialis* (Müller, 1776)

BAL Eub 1

EUG

FAO Names: En - Northern right whale; Fr - Baleine de Biscaye; Sp - Ballena franca,

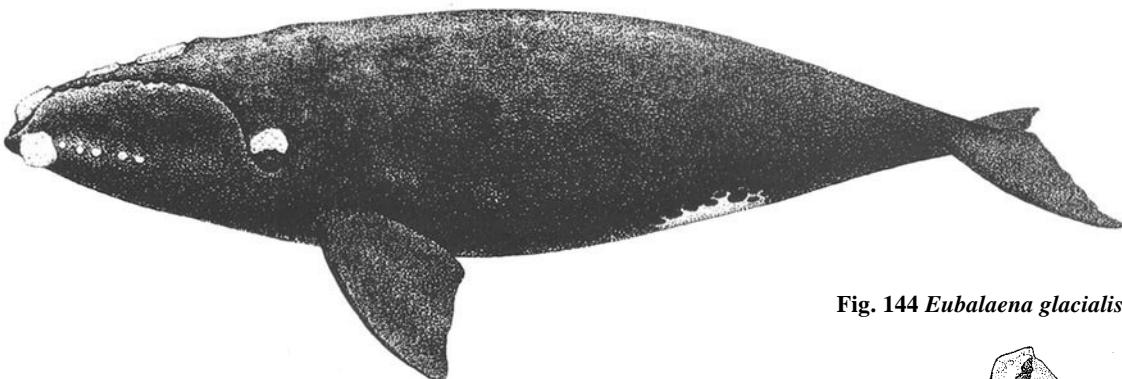
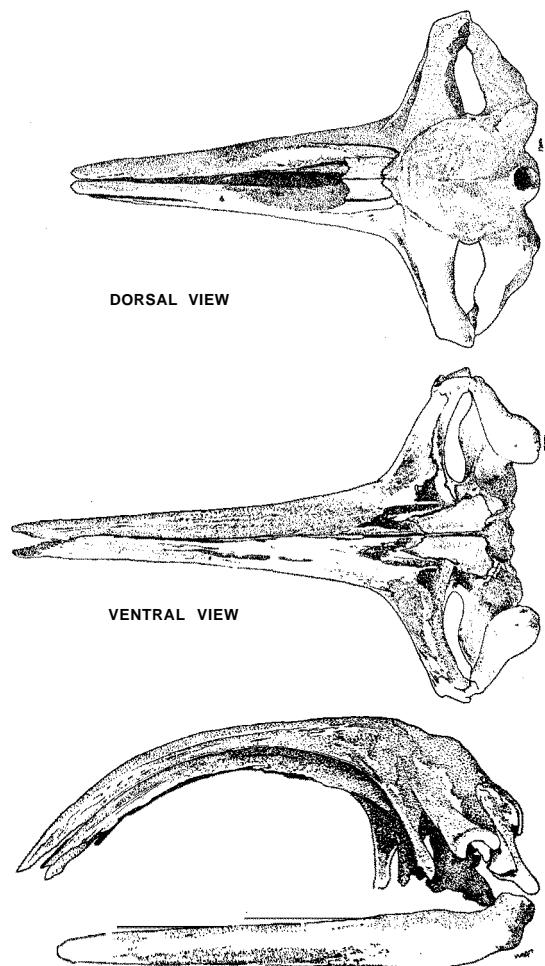


Fig. 144 *Eubalaena glacialis*

**Distinctive Characteristics:** The northern right whale is one of the stockiest of all whales. It has a massive head that can be up to nearly one-third of its body length. The jawline is arched and the upper jaw is very narrow in dorsal view. The flippers are broad and tend to be more fan-shaped than the pointed flippers of most other cetaceans. There is no dorsal fin or dorsal ridge on the broad back. The flukes are very wide and smoothly tapered, with a smooth trailing edge and a deep notch.

Most right whales are predominantly black, but there may be large white splotches of varying extent on the belly and chin. The head is covered with callosities, areas of roughened skin to which whale lice and sometimes barnacles attach. The largest of these callosities, on the top of the rostrum, is called the bonnet.

The widely separated blowholes produce a V-shaped blow up to 5 m high. Inside the mouth are 200 to 270 long thin baleen plates, which may reach nearly 3 m in length. They are brownish grey to black in colour. The fringes of these plates are very fine, reflecting the small prey taken by this species.



LATERAL VIEW

Fig. 145 Skull



Fig. 146 Surface - blow - dive profile

**Can be confused with:** In the northern extremes of their range, especially in the Bering and Okhotsk seas, northern right whales may be confused with bowhead whales (p. 46). Bowhead whales lack callosities and right whales have white patches only on the belly.

**Size:** Adults range in length to 17 m, but may occasionally reach 18 m. Females are larger than males. Newborns are 4.5 to 6 m long. Adults may reach weights of 80 to 100 t.

**Geographical Distribution:** Right whales primarily inhabit temperate and subpolar waters. Northern right whales are now extremely rare in the North Pacific and little is known of their current distribution there. The 2 North Atlantic populations are presumably isolated from each other, and the eastern stock is thought to be near extinction. Calving and feeding areas throughout the world are most often in shallow nearshore regions.

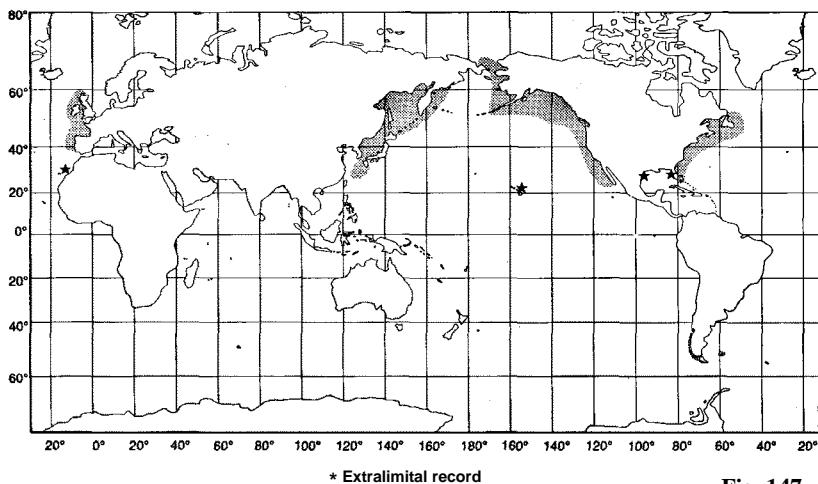


Fig. 147

**Biology and Behaviour:** Right whales are mostly seen in groups of less than 12 (most often singles or pairs). Larger groups may form on feeding or breeding grounds. They can be aerially active and generally raise their flukes before a deep dive. The mating system appears to involve sperm competition (males competing to inseminate females, not so much by physical aggression, as by delivering large loads of sperm, thereby displacing that of other males). Young are born in winter and spring in tropical or subtropical breeding areas. Right whales feed on copepods and other small invertebrates, generally by slowly skimming through patches of concentrated prey at or near the surface.

**Exploitation:** The right whales were the first targets of commercial whaling, starting in the eleventh century. They were sought after because of their thick blubber layer (and thus high yield of oil), long flexible baleen (used for many of the same purposes as plastic is today), slow swimming speeds, and tendency to float when killed. North Pacific right whales were depleted to near extinction by commercial whaling, the most recent episodes of which occurred as "scientific whaling" about 20 years ago. Sightings today are rare, apparently the species is not recovering, even under full protection.

**IUCN Status:** Endangered.

*Eubalaena australis* Desmoulins, 1822

BAL Eub 2

EUA

FAO Names: En - Southern right whale; Fr - Baleine australe; Sp - Ballena franca austral.

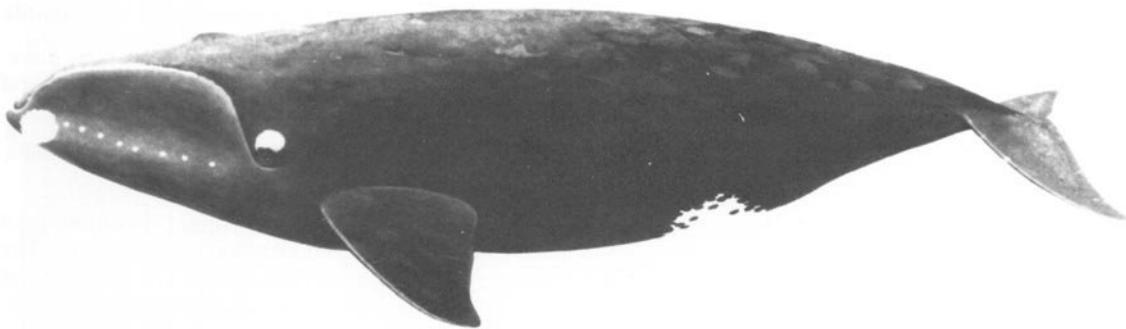
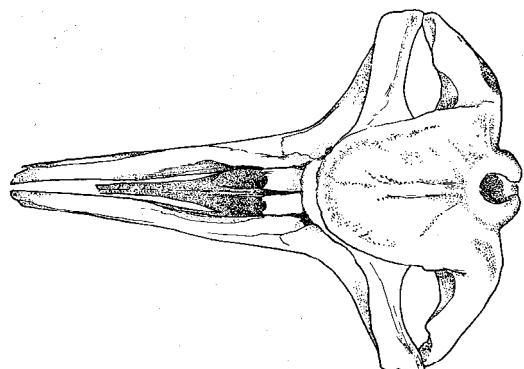


Fig. 148 *Eubalaena australis*

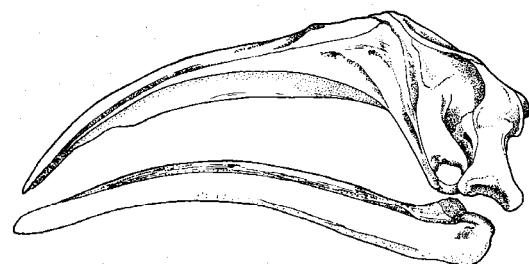
**Distinctive Characteristics:** These stocky whales have extremely large heads, which can be over one-fourth of the body length. The mouthline is bowed and the rostrum is arched and very narrow when viewed from above. As is true for right and bowhead whales in general, there is no trace of a dorsal fin or ridge in the southern right whale. The flippers are fan-shaped, and the flukes are broad with smooth contours. All right whales have callosities on their heads, the largest of which is called the bonnet. These callosity patterns are individually distinctive and have been used by researchers in many areas to identify individuals.

Southern right whales are largely black, but some have white patches of variable shape and size on the belly and sometimes on the back. Colour variants have been noted; these include blue-black, light brown, and nearly white individuals. In addition to those on the callosities, whale lice are common in creases and folds on the bodies of southern right whales.

The 200 to 270 baleen plates per side are narrow and long, up to 3 m in length. The plates tend to be dark grey to black (some can be nearly white) and have fine grey to black fringes. The blow of the southern right whale is relatively short and V-shaped, making this species identifiable at a distance, if seen from ahead or behind.



DORSAL VIEW



LATERAL VIEW

Fig. 149

**Can be confused with:** The southern right whale is the only whale in its range with a smooth, finless back and callosities; this should make misidentifications unlikely. From a distance the bushy, somewhat V-shaped blows of humpback whales (p. 60) can be mistaken for those of right whales. At close range, the 2 species are unmistakable.

**Size:** Southern right whale adults reach up to 17 m in length; females grow larger than males. These animals can reach weights of at least 100 t. Newborn animals are 4.5 to 6 m.

**Geographical Distribution:** Southern right whales are distributed throughout the Southern Hemisphere, from approximately 20°S to 55°S, although they have been observed as far south as 63°S. In winter and spring, the distribution is concentrated near coastlines. Major breeding areas are nearshore off southern Australia, New Zealand, southern South America, and South Africa. A few right whales have been sighted in Antarctic waters in summer.

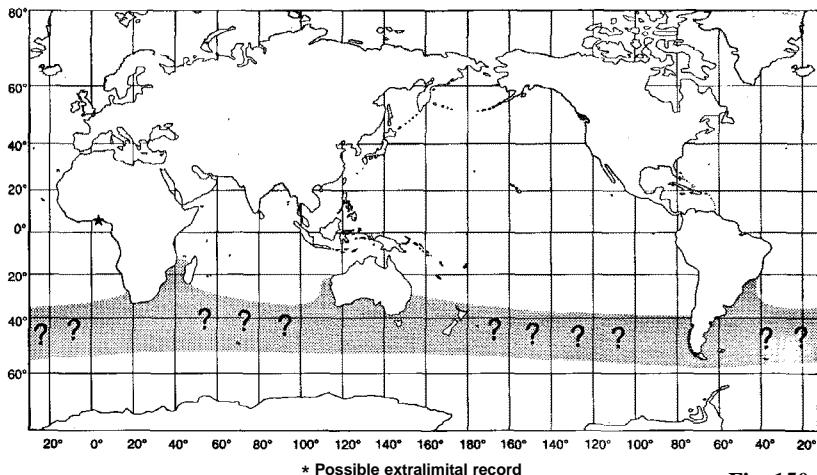


Fig. 150

**Biology and Behaviour:** Southern right whales have been well-studied on their winter breeding grounds, especially at Peninsula Valdes, Argentina, and in South Africa. Researchers have used callosity patterns to identify individuals on these grounds, and have learned much about the right whale's behaviour, communication, and reproduction. Right whales often seem slow and lumbering, but can be surprisingly quick and active. They often breach, and slap their flippers and flukes on the surface. Southern right whales often raise their flukes on a dive.

Most of the breeding in Argentina takes place in August and September, but mating has been observed in most months of the year. Male right whales have huge testes and long penises, 2 characteristics predicted in species in which males compete for females primarily through sperm competition, rather than by direct aggression.

Surface and subsurface skim feeding is the rule in this species. Southern right whales prey on copepods and krill, apparently sometimes feeding near the bottom.

**Exploitation:** Southern right whale populations, like their northern counterparts, have been heavily depleted by commercial whaling. Although not as endangered as the northern species, southern right whale populations are still relatively small. Although fully protected by the IWC, there is probably still some hunting for right whales. Despite the threats from whaling, entanglement in fishing gear, vessel collisions, and habitat destruction, some southern right whale populations have shown recent signs of recovery.

**IUCN Status:** Vulnerable.

*Balaena mysticetus* Linnaeus, 1758

BAL Bala 1

BMY

FAO Names: En - Bowhead whale; Fr - Baleine du Groenland; Sp - Ballena de cabeza arqueada.

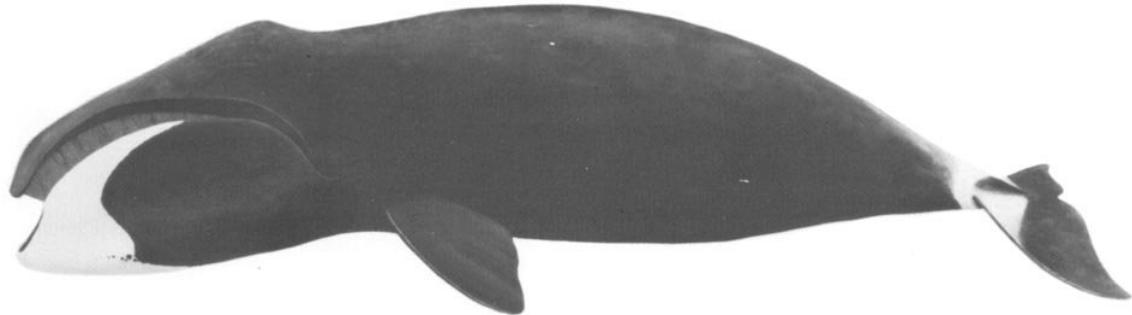
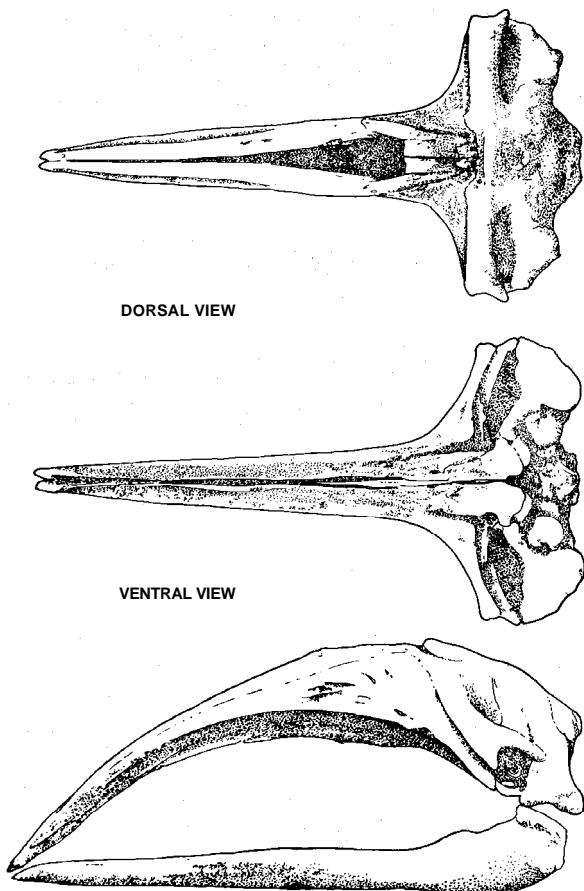


Fig. 151 *Balaena mysticetus*

**Distinctive Characteristics:** Bowhead whales are extremely rotund overall, but often have a distinct "neck" region. The head is large (up to one-third of the body length); the upper jaw is arched and narrow when viewed from above. The mouthline is strongly bowed, and the eye is placed just above the corner of the mouth. There is no dorsal fin or ridge, and the back is very broad. The flippers have blunt tips and the flukes are wide with smooth contours. There is a large muscular bulge (the stack) in the blowhole area.

Predominantly black in colour, bowheads have a white patch at the front of the lower jaw; this patch often has several dark grey to black spots, each indicating the position of a chin hair. There is also often a light grey to white band around the tail stock, just in front of the flukes, and sometimes other white or light grey areas on the body. The white on the tail expands with age, and very large, old bowheads may have an almost completely white tail. Some lighter coloured bowheads are occasionally seen.

Bowheads have the longest baleen plates of any whale. The 250 to 350 plates in each side of the jaw can reach lengths of 5.2 m; they have long, fine fringes. The plates are dark grey to brownish black, generally with slightly lighter fringes. As is true for the closely related right whale, the blow is V-shaped and bushy.



LATERAL VIEW

Fig. 152 Skull



Fig. 153 Surface - blow - dive profile

**Can be confused with:** Gray whales (p. 62) use some of the same summer range as bowheads, but the gray whale's dorsal hump and knuckles, and differences in head and body shape, coloration, and behaviour between the 2 species should make them distinguishable. Right whales (p. 42) might also overlap with bowheads, but usually the 2 species are separated by their ecological preferences. The right whale's callosities and absence of light chin and peduncle patches will allow them to be distinguished from bowheads.

**Size:** Male bowhead whales range to 18 m in length, females to 20 m. Weights of large individuals have been estimated at about 75 to 100 t. Calves are about 4 to 4.5 m long at birth.

**Geographical Distribution:** Bowheads are found only in arctic and subarctic regions. There are several stocks in the North Atlantic Ocean, and the Bering, Beaufort, Chukchi, and Okhotsk seas. These animals live much of their lives among the pack ice, migrating to the high arctic in summer, but retreating southward in winter with the advancing ice edge.

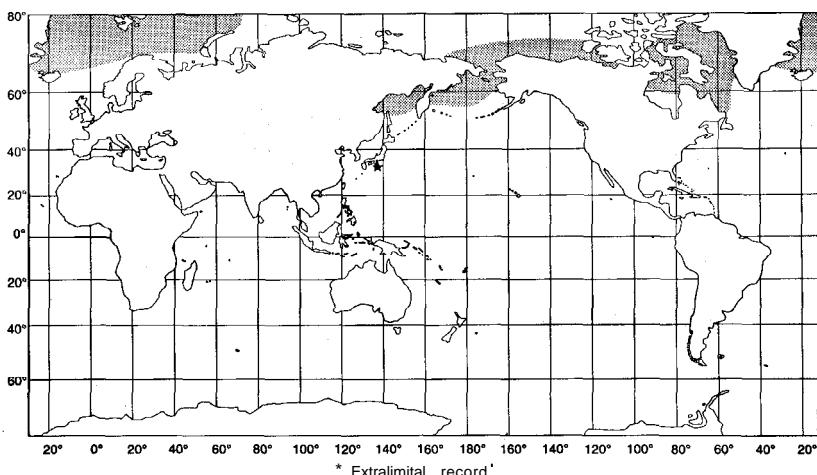


Fig. 154

**Biology and Behaviour:** Bowhead whales are usually seen in groups of 3 or fewer, but larger aggregations form during the autumn migration and on the feeding grounds. Although often slow-moving, bowheads breach and engage in other aerial behaviour. They frequently lift their flukes before a steep dive. Low frequency calls are common, at least during migration.

Calves are born mainly in spring as whales migrate toward feeding grounds. The breeding system is thought to be similar to that of the right whale, with males using a form of sperm competition. Small to medium-sized invertebrates, especially krill and copepods, form the bulk of the bowhead's diet. Bowheads skim feed at the surface and feed in the water column. It has recently been suggested that they also feed near the bottom, but probably do not directly ingest sediments as gray whales routinely do. During surface skim feeding, coordinated group patterns have been observed, including whales feeding in echelon (V-shaped) formation.

**Exploitation:** Bowhead whales were heavily hunted for several centuries. Today they are partially protected by the IWC. The current world population is still threatened by small-scale hunting by Alaskan, Canadian, and Russian natives. In addition, there are various forms of habitat degradation, including disturbance from oil and gas exploration and development activities.

**IUCN Status:** Vulnerable.

*Caperea marginata* (Gray, 1846)

NEOBA Cap 1

CPM

FAO Names: **En** - Pygmy right whale; **Fr** - Baleine pygmée; **Sp** - Ballena franca pigmea.

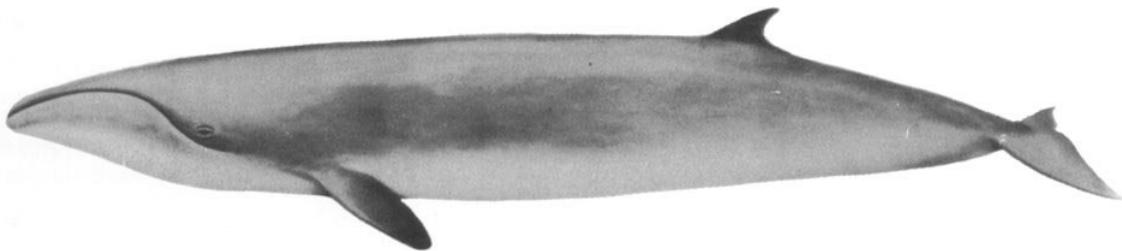
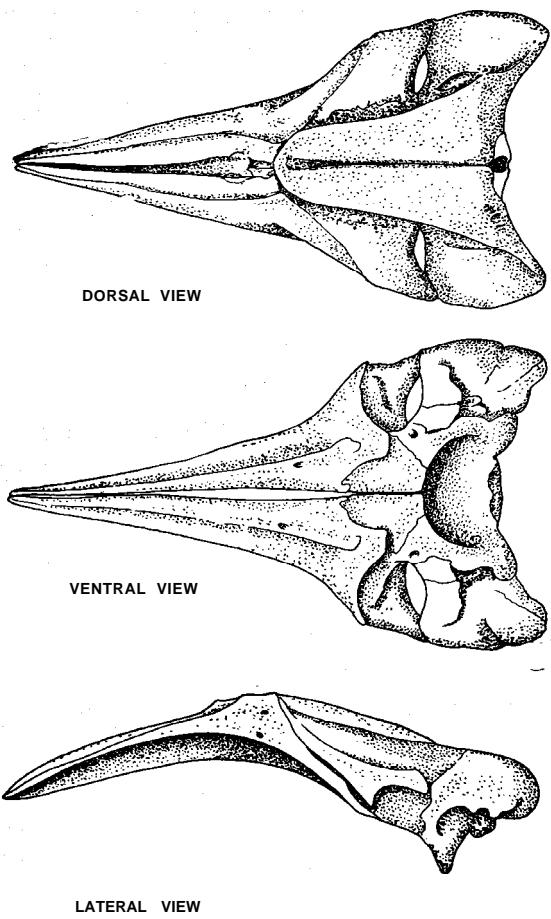


Fig. 155 *Caperea marginata*

**Distinctive Characteristics:** The pygmy right whale is the only right whale with a dorsal fin. The falcate fin is set about two-thirds of the way back from the snout tip. This species is atypical of right whales in other ways as well: it is rather slender, resembling more the streamlined rorquals than the chunky right and bowhead whales, and the head is not large (less than one-quarter of the body length). The pygmy right whale is like other right whales in that it has an arched jawline; also the upper jaw curves downward toward the tip, although not as much as in balaenids. The flippers are small and slender with rounded tips. There are 2 shallow throat creases, reminiscent of those in gray whales.

The colour of the body is dark grey above, ranging to white below. The flippers and flukes are dark grey.

The baleen plates in this species number about 213 to 230 in each side of the upper jaw. They are up to 68 cm long and are said to be very flexible and tough. The colour of the plates is yellowish white.



LATERAL VIEW

Fig. 156 Skull

**Can be confused with:** This species can easily be confused with the minke whale (p. 58), but the differences in head shape and the white flipper bands present in most populations of minke whales will allow differentiation when specimens are seen clearly. From a distance, the back and dorsal fin could be confused with those of a beaked whale; however, beaked whales have very different head shapes.

**Size:** The maximum recorded length for a male is 6.1 m and that for a female is 6.5 m. They reach weights of at least 3 200 kg. At birth, pygmy right whales are about 2 m long.

**Geographical Distribution:** The pygmy right whale is known only from a few records in the Southern Hemisphere, between the Antarctic Convergence (about 60°S) and about 30°S, in both coastal and oceanic waters.

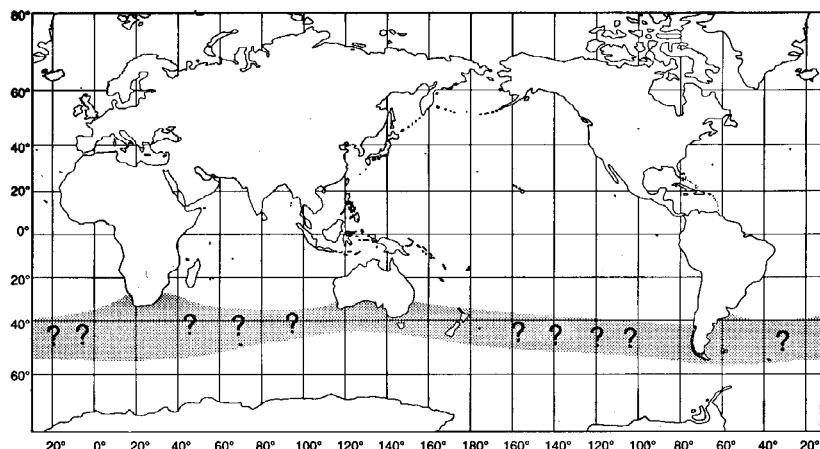


Fig. 157

**Biology and Behaviour:** This is the least known of all the baleen whales. Groups of up to 8 individuals have been seen, but singles or pairs are most common. They are sometimes seen with other species of whales and dolphins.

The inconspicuous small blow and quick shallow surfacings of the pygmy right whale makes it difficult to spot and observe at sea. Sometimes, these animals bring their snout tips out of the water upon surfacing.

Very little is known about reproduction in this species, but the breeding season is thought to be protracted.

Pygmy right whales are known to feed on copepods.

**Exploitation:** The smallest species of baleen whale, the pygmy right whale is also the only one that has not been the target of large-scale commercial whaling. Some animals are incidentally captured in nets off South Africa.

**IUCN Status:** Insufficiently known.

***Balaenoptera musculus*** (Linnaeus, 1758)

**BALAEN Bal 3**

**BLW**

**FAO Names:** En - Blue whale; Fr - Rorqual bleu; Sp - Ballena azul.

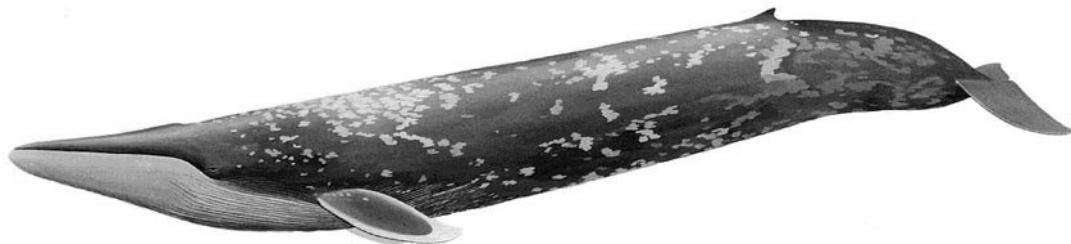
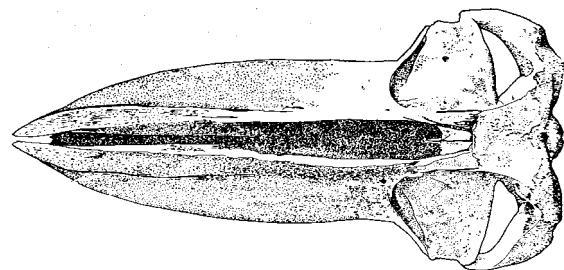


Fig. 158 *Balaenoptera musculus*

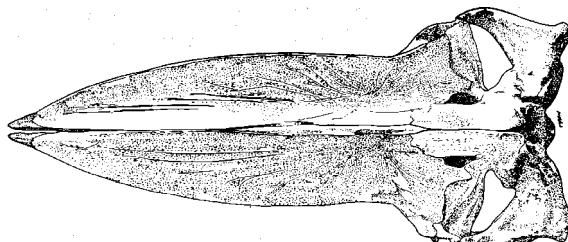
**Distinctive Characteristics:** The blue whale is the largest animal ever known; however, its size substantially overlaps with that of adult fin and sei whales. Like all rorquals, the blue whale is slender and streamlined. The head is broad and U-shaped (like a gothic arch) when viewed from above and relatively flat when viewed from the side. Along the centre of the rostrum, there is a single prominent ridge, which ends in an impressive "splash guard" around the blowholes. The flippers are long and pointed, and the dorsal fin is relatively small, variably shaped, and placed about three-quarters of the way back from the snout tip. The broad flukes have a relatively straight trailing edge and a prominent notch. In the Southern Hemisphere and northern Indian Ocean, a subspecies called the pygmy blue whale (*B. m. brevicauda*), which is shorter and has a relatively larger head, has been described. It is generally not possible to distinguish pygmy blue whales from other blue whales at sea.

Blue whales are bluish grey dorsally and somewhat lighter underneath. The head is uniformly blue, but the back and sides are mottled. When viewed through the water surface they may appear dappled or uniformly light blue. There is light to extensive mottling on the sides, back, and belly, generally in the form of dark spots on a lighter surface, but sometimes the reverse. A chevron, with the vertex behind the blowholes, sometimes marks the transition of coloration between the head and the body. Diatom films on the surface may be seen as an orangish brown or yellow tinge, which gave rise to the alternative name "sulphur-bottom" whale.

On the throat, there are 55 to 88 long pleats extending to or near the navel. The mouth contains 270 to 395 pairs of black, broad-based baleen plates, each less than 1 m long. The blow is tall and slender, reaching 9 m or more in height.



DORSAL VIEW



VENTRAL VIEW



LATERAL VIEW

Fig. 159 Skull