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A STRANDING GUIDE TO THE MARINE MAMMALS OF THE WIDER CARIBBEAN REGION TO THE MARINE MAMMALS

**AN INTRODUCTORY FIELD GUIDE FOR STRANDING
RESPONDERS**



A STRANDING GUIDE TO THE MARINE MAMMALS OF THE WIDER CARIBBEAN REGION



An Introductory Field Guide for Stranding Responders



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The Eastern Caribbean Cetacean Network (ECCN) is a regional volunteer organization that tracks sightings and strandings of whales and dolphins in the Eastern Caribbean (the Lesser Antilles). Through research and education, ECCN's mission is to gain community support for the protection of resident and migratory whales and dolphins and their critical marine habitats. ECCN has been a primary contributor in the inception and development of the Action Plan for the Conservation of Marine Mammals (MAMAP) of the Wider Caribbean Region (WCR) under the auspices of the United Nations Environment Programme's (UNEP) Protocol for Specially Protected Areas and Wildlife (SPA-W). Since 2005, ECCN has provided Marine Mammal Stranding Response Training Workshops in the Eastern Caribbean as well as the French and Dutch Antilles.



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The Caribbean Monk Seal—*Monachus tropicalis*

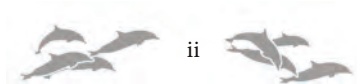
This stranding guide is dedicated to the Caribbean Monk Seal in recognition of its recent extinction, with the hope that this avoidable fate will never happen to any of the Caribbean marine mammal species.



The Wider Caribbean Region (WCR) is defined as the marine environment of the Gulf of Mexico, the Caribbean Sea and the areas of Atlantic Ocean adjacent thereto, south of 30 degrees north latitude and within 200 nautical miles of the Atlantic coasts of the States referred to in Article 25 of UNEP's Cartagena Convention.

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Marine Mammal Species of the Wider Caribbean Region (WCR)

The marine mammals of the Wider Caribbean Region are listed below, including the scientific name and common name. The list includes those species recorded from the WCR based on the verified documentation of an animal that was sighted or stranded.

Order CETACEA			
Suborder MYSTICETI		KEY	PAGE
Family BALAENIDAE	The Right Whales		
<i>Eubalaena glacialis</i>	North Atlantic right whale *	2A	26
Family BALAENOPTERIDAE	The Rorquals		
<i>Megaptera novaeangliae</i>	Humpback whale	3A	27
<i>Balaenoptera acutorostrata</i>	Minke whale	5A	28
<i>Balaenoptera borealis</i>	Sei whale	5B	29
<i>Balaenoptera edeni/brydei complex</i>	Bryde's whale	6A	30
<i>Balaenoptera musculus</i>	Blue whale *	7A	31
<i>Balaenoptera physalus</i>	Fin whale	7B	32
Family PHYSETERIDAE	The Sperm Whales		
<i>Physeter macrocephalus</i>	Sperm whale	9A	33
Family KOGIIDAE	The Pygmy and Dwarf Sperm		
<i>Kogia breviceps</i>	Pygmy sperm whale	10A	34
<i>Kogia sima</i>	Dwarf sperm whale	10B	35



Family ZIPHIIDAE	The Beaked Whales	KEY	PAGE
<i>Ziphius cavirostris</i>	Cuvier's beaked whale	12A	36
<i>Mesoplodon mirus</i>	True's beaked whale *	12B	37
<i>Mesoplodon densirostris</i>	Blainville's beaked whale	13A	38
<i>Mesoplodon europaeus</i>	Gervais' beaked whale	14A	39
<i>Mesoplodon bidens</i>	Sowerby's beaked whale *	14B	40
Family DELPHINIDAE	The Oceanic Dolphins		
<i>Grampus griseus</i>	Risso's dolphin	16A	41
<i>Orcinus orca</i>	Killer whale	17A	42
<i>Globicephala melas</i>	Long-finned pilot whale *	19A	43
<i>Globicephala macrorhynchus</i>	Short-finned pilot whale	19B	44
<i>Pseudorca crassidens</i>	False killer whale	20A	45
<i>Feresa attenuata</i>	Pygmy killer whale	21A	46
<i>Peponocephala electra</i>	Melon-headed whale	21B	47
<i>Steno bredanensis</i>	Rough-toothed dolphin	21C	48
<i>Lagenodelphis hosei</i>	Fraser's dolphin	22A	49
<i>Tursiops truncatus</i>	Bottlenose dolphin	23A	50
<i>Delphinus delphis</i>	Short-beaked common dolphin *	25A	51
<i>Delphinus capensis</i>	Long-beaked common dolphin	25B	52
<i>Stenella coeruleoalba</i>	Striped dolphin	26A	53

		KEY	PAGE
<i>Stenella frontalis</i>	Atlantic spotted dolphin	28A	54
<i>Stenella attenuata</i>	Pantropical spotted dolphin	28B	55
<i>Stenella clymene</i>	Clymene dolphin	29A	56
<i>Stenella longirostris</i>	Long-snouted spinner dolphin	29B	57
<i>Sotalia guianensis</i>	Guiana dolphin	29C	58
Suborder SIRENIA			
Family TRICHECHIDAE			
<i>Trichechus manatus</i>	West Indian manatee		59
Order CARNIVORA			
Suborder PINNIPEDIA			
Family PHOCIDAE			
<i>Monachus tropicalis</i>	Caribbean monk seal ***		back cover
<i>Cystophora cristata</i>	Hooded seal *		59
Family OTARIIDAE			
<i>Zalophus californianus</i>	California sea lion **		59

Note: * Extralimital range

** Introduced species from aquaria

*** Extinct



INTRODUCTION

Accurate species identification of marine mammals is key to improving our knowledge about them, including their distribution, natural history and the causes of their deaths. Marine mammals face many human-related challenges. Entanglement in active and discarded fishing gear poses a serious threat. Where their ranges overlap with human activities, marine mammals may also suffer from disturbance, vessel collision and exposure to contaminants, as well as loss of feeding, mating and nursery habitats. An impediment to marine mammal conservation is the scarcity of knowledge about their normal habitat, diet, behavior and demographics, and how human impacts affect these critical factors.

Our principal hope is that this field guide will assist in correctly identifying stranded marine mammals, and that associated research will lead to an increased understanding of their lives, both for the sake of ‘filling the gaps’ of our knowledge and to design better conservation measures to protect them in the Wider Caribbean Region (WCR).

Using the Marine Mammal Stranding Field Guide

This spiral-bound, water-resistant field guide is designed to provide an accurate and easy way to identify stranded marine mammal species for stranding network volunteers, the general public and specialists. The guide will assist in identifying the cetacean species stranded in the Wider Caribbean Region as well as other marine mammal species that may occasionally be seen, including the West Indian manatee and two seal (pinniped) species.

The species “identification box” outlines the main features that help determine a correct identification. Use of *italics* or **bolded** text is designed to highlight diagnostic or particularly useful features. Physical notes, in which the range of full-grown adult lengths and weights are described, are based on published materials. Other information is presented to assist in determination of age and sex, and comparison to similar species or ecology/social structure relevant to identification or distribution. For information about food requirements, habitat, reproduction and conservation status, please refer to a marine mammal natural history field guide. (See References p. 71.)



Marine Mammal Strandings

A *stranded* marine mammal is defined as a marine mammal found dead on the beach or one that is alive but in a helpless position; for example, one that comes ashore ill, weak or simply lost. Every year thousands of whales and dolphins are found stranded alive or dead on beaches all over the world. They may be alone or in groups. Some animals are old or unwell, but many of them are young and otherwise in good health. This is a natural phenomenon that has been recorded for centuries. The mechanisms behind such events, however, remain one of the great mysteries of the animal kingdom.

Single strandings are generally considered the result of normal mortality, disease processes or associated with human actions. Regardless of whether they strand alive or dead, single-stranded animals soon die. The expression *mass-stranded* generally refers to a simultaneous stranding of *two or more cetaceans of the same species, other than a female and her calf*. Mass strandings are harder to understand. They occur when a group of toothed whales come ashore alive. Such animals rapidly encounter serious problems with sunburn, dehydration and other aspects of exposure. Some mass strandings (i.e., beaked whales) exhibit a broader distribution in time and space than typical mass strandings, which are generally confined to a specific area.

Possible Causes

Some strandings are easy to explain: the animals simply die at sea and are washed ashore with tides and currents. But live strandings are more difficult to explain, and many theories have been put forward to explain their possible cause. One theory is that the whales may simply get lost or feel unwell and need to rest. Alternatively, an earthquake or storm could cause disorientation, or anomalies (irregularities) in the earth's magnetic field may cause the animals to lose their sense of direction—all of which may impair the echolocation in toothed whales. An increase in fisheries entanglement as well as the proliferation of chemical and noise pollution (even in deep waters) are also harmful. In mass strandings, the whole group may be in trouble or they may be following an individual that is ill or disoriented. In the Caribbean, deep-water species like the pilot whales commonly strand in groups or herds. What is reasonably clear is that once an animal strands, its companion(s) often follow because of the strong social bonds found in many species.



Information from Strandings

For many years the only information available on cetaceans was gleaned from animals killed by whalers or from strandings. Even now, despite increasing work being undertaken on observing healthy animals at sea, some species have never been seen alive and many others are almost impossible to distinguish at sea. An examination of a dead specimen may be necessary for a positive identification; even badly decomposed animals can often be identified with certainty.

Dead stranded animals represent not only a source of data on what factors were responsible for the stranding, but also provide invaluable data on the natural history and other characteristics of the species involved. Scientists can obtain data on the food habits, parasites, chronic diseases, pollutant levels, as well as age and reproductive condition from stranded individuals.

Marine Mammal Conservation

Conservation of marine mammals can be enhanced when decisions are based on solid science. The fact that scientific information exists, however, *does not guarantee* that conservation will occur. If the goal is to conserve, an additional focus on social and political “will” can achieve conservation results even in the face of scientific uncertainty. In addition to the suite of regulatory tools, invaluable means to help achieve excellent conservation outcomes include community partnerships (i.e., stranding networks), transparent communication and dedicated educational outreach.

WHAT IS A MARINE MAMMAL?

In the strictest sense, a *marine mammal* is defined as any mammal that makes the sea its home for part or all of the year. In the *Wider Caribbean Region* marine mammals include *cetaceans* (whales and dolphins), *pinnipeds* (seals, sea lions) and *sirenians* (manatees). Most marine mammals live exclusively in salt water. However, manatees and some dolphin species generally live in both fresh and salt water, some entering fresh rivers, estuarine bays and occasionally are found in coastal salt water. All *pinniped* species that have been recorded in the Caribbean live in salt water but return to land (or ice) to give birth to their young or rest onshore.



What is a Cetacean?

The term *cetacean* is used in a general sense to refer to a whale, dolphin or porpoise.¹ Cetaceans are highly specialized marine mammals characterized by a hairless body, forelimbs modified into broad flippers, no external hind limbs, a horizontal tail used for locomotion and a blowhole(s) located at the top of the head for breathing. The cetaceans are grouped into two taxonomic suborders: the *toothed whales* (odontocetes) and the *baleen whales* (mysticetes). A fundamental difference (among many) between toothed and baleen whales is the presence or absence of teeth (even though the teeth of some taxa or demographic groups of “toothed whales” do not protrude through the gums). Cetaceans feed, mate, calve and suckle their young in water. Of the 86 known species of cetaceans living in the world today, 32 species have been reported from the Wider Caribbean Region.

Toothed Whales

The toothed whales, which include the coastal and oceanic dolphins, beaked whales and sperm whales, have a variable number of identical conical teeth that are used to grasp individual prey, primarily fish and squid that make up their diet. In general, toothed whales are smaller than baleen whales, although the largest toothed whale, the sperm whale, can be larger than some species of baleen whales. Toothed whales have a more-or-less rounded forehead called a *melon*, which is used in *echolocation*. *Sexual dimorphism* is common—males are larger than females—and diagnostic secondary sex traits are present in some families (i.e., differences in dorsal fins and tooth patterns).

Baleen Whales

In contrast, the baleen whales lack teeth. Instead, one row of *baleen* plates hangs from each side of the upper jaw like a curtain. The number, size, shape and color depend on the species. Baleen (otherwise known as “whalebone”) is derived from *keratin-like* tissue, which is the same material of which fingernails or the horns of animals are made. These characteristics reflect a primary difference in feeding behavior. Baleen whales feed on small fish, krill or copepods that school or swarm and can be engulfed many at a time. In baleen whales, adult females are larger than adult males.

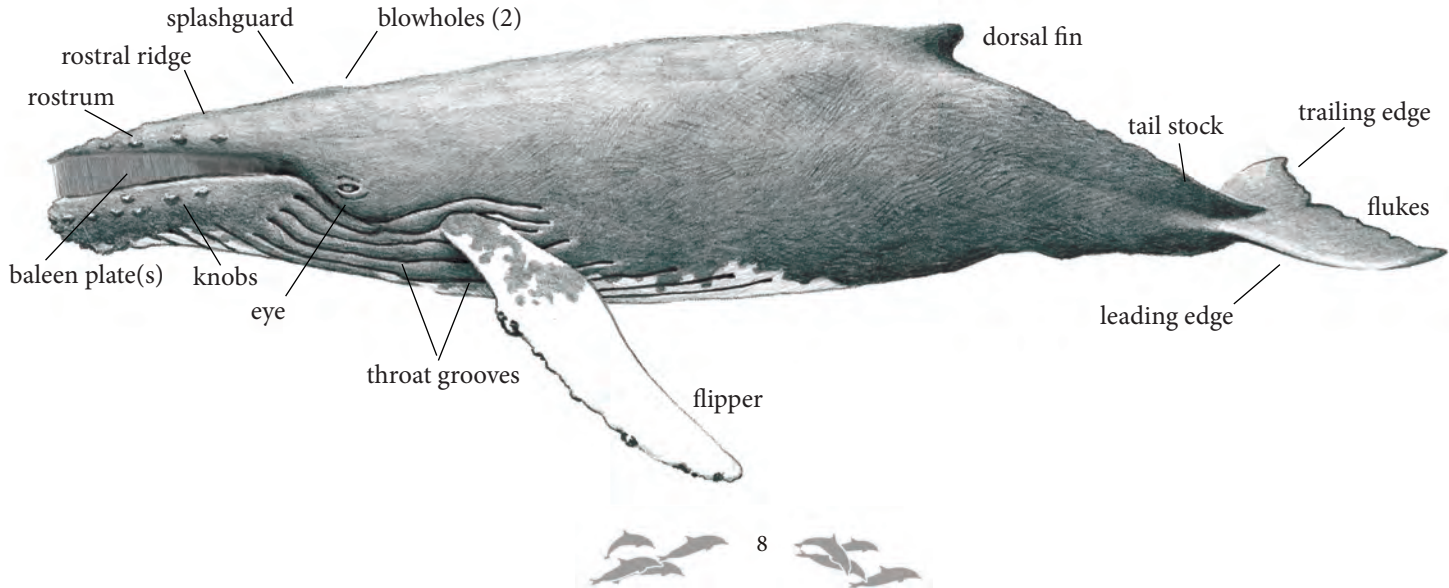
¹ There are no “true” porpoise species found in the WCR.



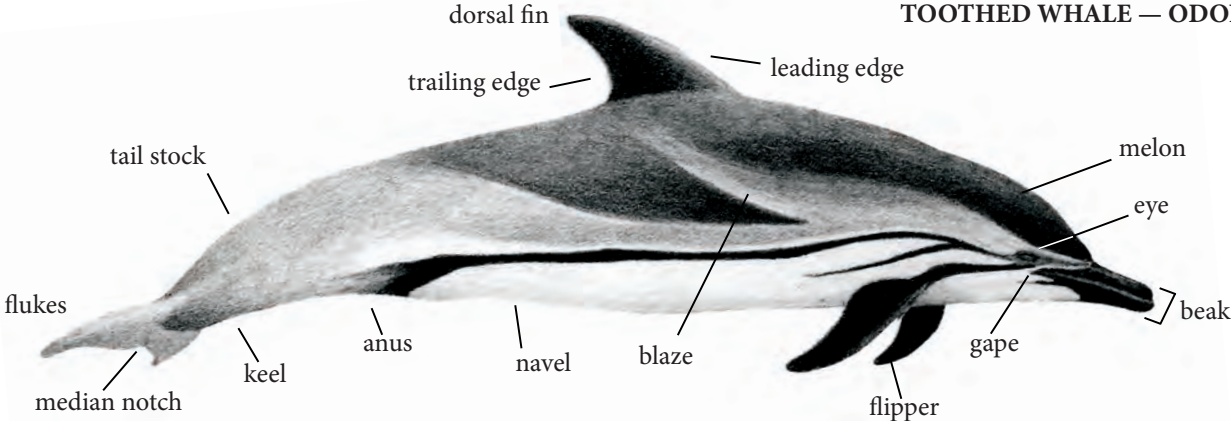
EXTERNAL ANATOMY OF A CETACEAN

The following illustrations will help you to become familiar with the terms used to describe different parts of the cetacean body. Cetaceans have fusiform bodies with paddle-like *flippers* used for steering, balancing and stopping. The upward and downward movements of the *flukes* and related body movements power forward movement. Most species have a *dorsal fin*. The flukes and dorsal fin consist mostly of dense connective tissues but no bone. Smooth, rubbery skin and a thick layer of blubber as well as the absence of protruding ears, hind limbs and external genitalia aid streamlining. The external nostril, or *blowhole*, is located on top of the head. The blowhole(s) are *paired* in baleen whales and *single* in toothed whales.

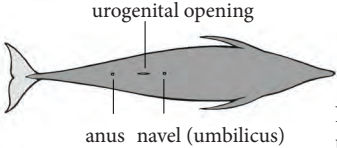
BALEEN WHALE — MYSTICETE



TOOTHED WHALE — ODONTOCETE

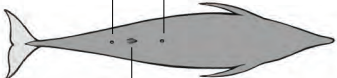


Cetacean Gender Identification

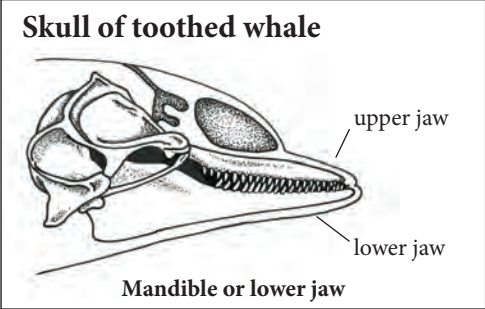


♂ Male

Note relative location of urogenital opening between sexes.



♀ Female



BODY CLUES TO IDENTIFYING STRANDED WHALES AND DOLPHINS

Correctly identifying stranded cetaceans takes patience and experience. Each cetacean species has distinctive characteristics that separate it from other species. Sometimes these differences are very subtle and depend on a keen eye, some background knowledge and even some experience. Distinguishing toothed whales from baleen whales is usually quite easy, but differentiating one toothed whale species from another (e.g., spinner dolphin versus spotted dolphin) or one baleen whale from another will require more attention to detail.

The key to successful identification is a process of elimination using a checklist of the main features to look for. It must be cautioned, however, that identification should not be based on a single characteristic but on a suite of features, including:

1. Single versus paired blowholes
2. Baleen plates versus teeth (note shape and number of teeth)
3. Overall size of whale or dolphin (use boat for length comparison)
4. Head size and shape (beak or no beak)
5. Dorsal fin position, proportional size, shape and color (if present)
6. Body color and markings
7. Shape and color of flukes and pectoral fins or flippers
8. Noticeable markings or scarring on head, body or flukes

Examining Teeth or Baleen

Illustrations of species' teeth are included in the identification boxes. The size, shape, location and number of a cetacean's teeth, and color or length of baleen can be very distinctive. Noting the number of teeth is particularly helpful in identification (take photographs too). Tooth samples can also age an animal.



Size

For easy use, the key has three size categories, based on species typical size: typical adult length up to 3 meters (m); 3-10 m; and, greater (>) than 10 m.

Beak or Snout

The presence or absence of a prominent beak (rostrum) is an especially useful identification feature in toothed whales. Broadly speaking, beaked whales and half the oceanic dolphins have prominent beaks, whereas sperm whales, and some large dolphins species do not.

Pectoral Fins or Flippers

Record the position of fins or flippers on the animal's body as well as their length, shape and color. They can range from small and narrow to large and paddle-like (and are extremely long on a humpback whale).

Dorsal Fin

Note whether or not the animal has a dorsal fin or hump. If it does, look carefully at its shape. Does it have a broad or narrow base? Is it curved or upright? Also, look at the size of the dorsal fin or hump in relation to the size of the body, its position on the animal's back, its color and notice any distinctive markings it may have.

Flukes

Make a note of the flukes' shape and any distinctive markings, and whether or not there is a notch between the trailing edges.

Color Changes

Many cetaceans change color after death, sometimes within a few hours, and therefore give a false impression of their true coloration. Normally, the changes involve a substantial darkening.

Skulls

The shape of the skull, especially the beak or rostrum, and lower jaw, can help identify species.



PUBLIC HEALTH ISSUES

Marine mammals can be healthy carriers or ill with *zoonotic pathogens*, disease agents transmissible from animals to humans (and humans to animals). Isolated cases of human disease acquired through contact with marine mammals have been reported as well. Marine mammals have also acquired human diseases. Taking simple precautions, such as wearing latex gloves, avoiding the exhalation from the blowhole of cetaceans and washing your hands after contact, will reduce this risk. For further information on *zoonoses*, refer to: http://www.vetmed.ucdavis.edu/whc/mmmz/images/Zoonoses_Brochure.pdf.

SPECIES DIAGNOSTICS NOTE:

In reviewing the *dichotomous key* and accompanying illustrations, please take into account the following:

Extralimital species, highlighted in “gray”, are rare observations of species not generally found within a given limit of geographical distribution or zoogeographical area.

Species illustrations are not drawn to scale. Illustrations are drawn from museum specimens. If teeth are missing, worn down or jaw malformed (in illustration), it is due to an individual’s life history. Although illustrations of the lower jaw (mandible) are included in the identification boxes, a thorough guide for skull diagnostic identification can be found in “Marine Mammals of the World” (pp. 51-80). (See References p. 71.)

Abbreviations: meter (m), ton (t), kilograms (kg), less than (<), and greater than (>).

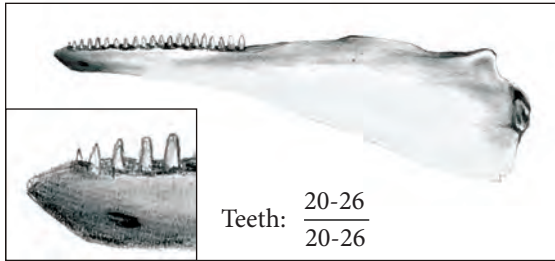
Tooth counts are taken from: *Marine Mammals Ashore: A field guide for strandings*. Geraci, J. R. and V. J. Loundsbury. Second Edition. E. John Smitz & Sons, Sparks, Maryland, 2005.



SPECIES IDENTIFICATION BASED ON EXTERNAL APPEARANCE

The method presented here uses a written *dichotomous key*, which is generally based on two choices that present the reader with statements that describe certain characteristics. On selecting one, the reader is presented with the next couplet choice in the key and so on—to eventually arrive at a likely identification.

This dichotomous key is based on external characteristics in which measurement and tooth-baleen plate counts can be taken and detailed observations can be made of color patterns and body features that are not observed on animals at sea. The key is primarily intended to reflect *diagnostic features* documented in adult specimens, and in some cases may not allow identification of sub-adults. It must be cautioned that some groups, such as the beaked whales, are poorly known, and this key probably will not be adequate to accurately identify these species.



Identification Process:

Look at the picture of the melon-headed whale above. As you observe the animal on the beach, correct choices following the dichotomous key (on the next page) would be: 1B; 8B; 11B; 15A; 16B; 17B; 18B; 20B; 21B = Melon-headed whale (*Peponocephala electra*). **Teeth** are located in the upper and/or lower jaw. For example, the melon-headed whale's tooth counts are depicted as 20-26 teeth *per side* on the upper jaw/and 20-26 *per side* on the lower jaw—or a total of 40-52 teeth in the upper jaw and 40-52 teeth in the lower jaw.

DICHOTOMOUS KEY for CETACEANS of the WIDER CARIBBEAN REGION

IA. Double blowhole on top of head; teeth absent; baleen plates suspended from *upper jaw*. (Baleen whale) *Go to 2.*

1B. Single blowhole on top of head; teeth present (although sometimes not protruding from gums); no baleen. (A bare skull will show 2 blowhole openings.) (Toothed whale) *Go to 8.*

2A. **No throat grooves** or creases on chin or throat; **no dorsal fin; upper jaw and mouth line strongly arched** when viewed from side; large head ($\frac{1}{3}$ body length) with long, narrow rostrum; **callosities** (roughed areas of skin) on head, lower lip and around eyes only; large, **paddle-shaped flippers; robust body, black**, often with white ventral blotches, chin dark; broad, triangular flukes with smooth trailing edge and distinct median notch. **Baleen:** exceptionally long, narrow, black plates (<2.8 m) with fine bristles, 200-270 plates *per side* of upper jaw. **Size:** 4-4.6 m, 900 kg (neonate); 15-17 m, 45-90 tons (t) (adult). (*Extralimital range*)

—*Eubalaena glacialis*—**North Atlantic right whale**

2B. Long ventral throat grooves; dorsal fin present; upper jaw relatively flat when viewed from the side and broad from the top. *Go to 3.*

3A. Extremely **long flippers** ($\frac{1}{3}$ of body length), with knobs on leading edge; black or dark gray upper body with variable amounts of white on throat/belly; **large knobs protruding from top of head and tip of lower jaw** often encrusted with barnacles; **throat grooves (12-36) widely spaced, extending to navel**; variable-shaped dorsal fin usually atop hump ($\frac{2}{3}$ back on body) and “knuckles” behind dorsal fin to fluke; **broad flukes with serrated trailing edge** and variable pattern on underside. **Baleen:** short (< .7 m), black with dark brownish gray bristles, 270-400 plates *per side* of upper jaw. **Size:** 4-4.6 m, 680-1400 kg (neonate); 8-10 m (weaning); 12-16 m, 30-45 t (adult).

—*Megaptera novaengliae*—**Humpback whale**

3B. Flippers < $\frac{1}{3}$ of body length, lacking knobs; 32-100 fine throat grooves; flukes more or less smooth on trailing edges. *Go to 4.*



4A. Throat grooves end before navel. *Go to 5.*

4B. Throat grooves extend to or beyond navel. *Go to 6.*

5A. Black or dark steel-gray upper body; may have **pale chevron** markings behind head extending from light colored belly to midline of back; **head sharply pointed** with **single, sharp median ridge** on flat rostrum; prominent hooked dorsal fin; flipper small with broad **white band**; slightly notched fluke with slight concave trailing edge, underside light usually with dark margin; **throat grooves (50-70)** extending nearly to navel. **Baleen:** short (< .3 m), coarse yellow-white with fine white bristles, 230-260 plates *per side* of upper jaw. **Size:** 2.4-2.8 m, 320 kg (neonate); 4.5-5.5 m (weaning); 7-9 m, 6-9 t (adult).

—*Balaenoptera acutorostrata*—**Minke whale**

5B. Sleek, dark gray body with cream-colored underside, often with light oval scars; slender, erect, falcate dorsal fin ($\frac{2}{3}$ back on body); distinct notched fluke with almost straight trailing edge; **short throat grooves (32-60)**, usually end just behind flipper.

Baleen: (< .8 m) black with fine white to grayish-brown coarse bristles, 220-400 plates *per side* of upper jaw.

Size: 4.5 m, 680 kg (neonate); 9 m (weaning); 15-19 m, 15-35 t (adult).

—*Balaenoptera borealis*—**Sei whale**

6A. Three parallel, conspicuous longitudinal ridges on head before blowholes; uniformly dark gray body with pale to pink belly, some pale blotches or mottling; both lower lips uniformly gray, head coloration symmetrical; dorsal fin strongly curved with pointed tip; distinct notched fluke; **throat grooves (40-50)** extend at least to navel. **Baleen:** short (< .4 m), dark gray with coarse bristles, 250-370 plates *per side*. **Size:** 3.4-4 m, 680 kg (neonate); 7.1 m (weaning); 13-15.5 m, 12-20 t (adult).

—*Balaenoptera edeni*—**Bryde's whale**²

6B. Only 1 prominent ridge on snout: 55-100 ventral pleats. *Go to 7.*

² The taxonomy of Bryde's whales is unsettled. Currently, 1 species is recognized with two subspecies: *Balaenoptera edeni edeni* and *B. edeni brydei*. Cite: Committee on Taxonomy, 2011. List of marine mammal species and subspecies. Society for Marine Mammalogy, consulted on 10 September 2013: www.marinemammalscience.org,



7A. Upper **body blue-gray with light mottling** behind the head region and white/gray/yellowish belly; head coloration symmetrical; **broad head with U-shaped rostrum with prominent “splashguard”** before blowholes and single, short central ridge forward of blowhole; tiny, stubby dorsal fin set far back; **throat grooves (55-88)** extending at least to navel; **dorsal fin very small, ¼ back on body**; flukes broad and triangular with smooth trailing edge and notched fluke. **Baleen:** < 0.9 m, black plates *per side* of upper jaw (270-400) with coarse bristles; tongue and palate black. **Size:** 7-8 m, 2-3.6 t (neonate); 12.8-16 m, 23 t (weaning); 22-26 m, 100-150 t (adult). (*Extralimital range*)

—*Balaenoptera musculus*—**Blue whale**

7B. Dark gray with light undersides, unique **asymmetrical head coloration with black jaw on left side and white jaw on right side**; back dark with light streaks or swirls (blaze) and **pale chevron on back** behind head, especially prominent on right side; long, sleek body with flat, V-shaped rostrum; **single rostral ridge** extends from blowhole to snout; sharp ridge on back from dorsal fin to **broad triangular flukes**; **throat grooves (56-100)**, longest ending at least to navel; dorsal fluke is dark and ventral (underside) light. **Baleen:** 0.7 m dark gray and yellow striped, 260-480/plates *per side* of upper jaw except for light colored front portion on right side. **Size:** 6-6.5 m, 1.8-2 t (neonate); 11 m (weaning); 20-24 m, 50-80 t (adult).

—*Balaenoptera physalus*—**Fin whale**

8A. Upper jaw extending well past lower jaw. Lower jaw very narrow. *Go to 9.*

8B. Upper jaw not extending much or at all past lower jaw. Lower and upper jaws about equal in width (beaked whale or delphinid). *Go to 11.*

9A. **Huge, squared head** measuring up to ⅓ body length with **narrow, underslung lower jaw**; dark body **appears wrinkled** with **dorsal “hump” on back** (instead of dorsal fin) followed by series of bumps or “knuckles” (along midline from dorsal hump to fluke); **single blowhole on front left corner of head**; small, paddle-shaped flippers; large triangular flukes with straight trailing edge and deep median notch. **Teeth:** 0-3/20-26 each side. **Size:** 3.5-4 m, 1 t (neonate); 6.7 m (weaning); 15-18 m; 36-57 t (adult male) and 9-12.5 m, 12-20 t (adult female).

—*Physeter macrocephalus*—**Sperm whale**



9B. Body < 4 m; head less than 15 percent of body length; blowhole set back from front of head; prominent dorsal fin; 8-16 in long, thin, sharply-pointed teeth in each side of lower jaw that fit into upper jaw sockets. *Go to 10.*

10A. Short, **robust body with squared or conical shark-like head** and tiny **underslung lower jaw**; blowhole left of center; “**false gill**” or **pale crescent-shaped marking** between eye and flipper; short flippers located far forward; **no throat creases**; tiny, slightly hooked dorsal fin (located aft of mid-back); short broad flippers located far forward on body; steel-gray back, lighter down sides to white belly; light colored circular mark anterior (in front of) to eye. (Note: Both species of *Kogia* are generally difficult for non-experts to distinguish.)

Teeth: 0-3/12-16 each side. **Size:** 1-1.2 m, 55 kg (neonate); 2.7-3.4 m, 320-410 kg (adult).

—*Kogia breviceps*—**Pygmy sperm whale**

10B. Short, **robust body with small shark-like head with short slightly-pointed snout and tiny underslung lower jaw**; several short throat creases; blowhole left of center; “**false gill**” or **pale crescent-shaped marking** between eye and flipper; **prominent, falcate dorsal fin located mid-back**; short broad flippers located far forward on body; dark gray-black back may appear wrinkled, lighter down sides to white belly. **Teeth:** 0-3/8-11 each side. **Size:** 1m, 46 kg (neonate); 2.1-2.7 m, 140-270 kg (adult).

—*Kogia sima*—**Dwarf sperm whale**

11A. Two conspicuous creases on throat forming forward-pointing V; notch between flukes absent or indistinct; dorsal fin relatively short and set well behind mid-body. (Beaked Whales) *Go to 12.*

11B. No conspicuous creases on throat; prominent median notch in flukes; dorsal fin near middle of back or in forward 1/3 of animal. *Go to 15.*

12A. **Robust, cigar-shaped body** with small head and **sloping forehead with poorly defined beak** and upturned mouthline; lower jaw extends past upper jaw; depression behind blowhole; short flippers fit into “**flipper pockets**” (slight depressions in body wall); small dorsal fin located far aft; **flukes unnotched**; **body mottled golden tan to reddish brown, dark eye patch**; forehead, beak and chin are creamy white. Adult males often with white head and linear tooth scarring on body and round scars common.



Teeth: 0/2, lower jaw of **adult males** one pair of conical teeth protruding at tip of lower jaw (unerupted on juveniles and females).
Size: 2-3 m, 250-300 kg (neonate); 5-5.7 m, 2-3 t (adult).

—*Ziphius cavirostris*—**Cuvier's beaked whale**

12B. Spindle-shaped body tapers toward tail; small head with slightly bulging melon delineated by slight depression behind blowhole and medium, bottle-shaped beak; dark gray to brown upper body with **contrasting dark blaze along back from melon past triangular dorsal fin**; dorsal fin darker than back, located far aft; **black oval eye patch and lips**; slight ridge from dorsal fin to flukes; paler sides and belly, rear third of body may be lighter pale; flukes unnotched. Parallel scarring on males. **Teeth:** 0/2 small, triangular and compressed, located at tip of straight lower jaw of adult males. **Size:** 2.2 m (neonate); 5.1-5.4 m, 1.4 t (adult). Few have been seen alive. (*Extralimital range*)

—*Mesoplodon mirus*—**True's beaked whale**

12C. Usually 1 pair flattened teeth well behind tip of lower jaw (erupted only in adult males); head small; prominent beak with forehead rising at shallow angle; sometimes flippers fit into depressions on the body; scratches and scars common on some animals; maximum body length to 5.5 m.

—*Mesoplodon* sp. *Go to 13.*

13A. Spindle-shaped body, thick moderate beak, **forehead flattened forward of blowhole**; grayish brown to black on back and lighter gray underneath with large, tan or grayish white oval blotches all over body; small, triangular to falcate dorsal fin set $\frac{2}{3}$ back on body; small flippers; flukes unnotched. **Teeth:** 0/2, **one pair of massive, flat triangular teeth in lower jaw** of adult males protrudes from front edge of prominent arch near **corner of mouth** (and oriented slightly forward and extend above level of upper jaw). (Note: Female and subadult teeth are un-erupted. Tooth shape is definitive of this species; absence of visible teeth requires museum preparation for identification.) **Size:** 2-2.5 m, 60-150 kg (neonate); 4.5-4.7 m, 1 t (adult).

—*Mesoplodon densirostris*—**Blainville's beaked whale**

13B. Mouth line relatively straight or only slightly arched; teeth of adult males not on arches. Maximum body length 5.5 m. *Go to 14.*



14A. Body slender, laterally compressed (taller than is wide); extremely small, tapered head has bulge in front of blowhole; **small slightly bulging forehead curves down to pronounced, slender beak** with relatively straight mouthline; **uniformly dark gray back and sides**, belly lighter with irregular white blotches; short tapered flippers low on body; small, falcate to triangular dorsal fin, located far aft; flukes unnotched. **Teeth:** 0/2, one **pair of small, triangular flattened teeth visible near front of lower jaws of adult males.** **Size:** 2.1 m (neonate); 4.5-5.2 m (adult female); 4.5-4.8 m (adult male), 1.2 t (adult).

—*Mesoplodon europaeus*—**Gervais' beaked whale**

14B. Slender spindle-shaped body with small head sloping to long beak (males with distinctive pencil-thin beak); pronounced **bulge in front of indentation of blowhole**; color slate gray or bluish gray to brown back with lighter sides, **blotches and limited scarring**; short, tapered flippers; small, falcate to triangular dorsal fin, located far aft; flukes unnotched. **Teeth:** in adult males, **pair of flat, triangular teeth protrudes outside of mouth, midway in lower jaw** (about 30 cm (12 in.)). **Size:** 2.1-2.4 m, 170 kg (neonate); 3 m (weaning); 4.7-5.5 m, 1.3 t (adult). (*Extralimital range*)

—*Mesoplodon bidens*—**Sowerby's beaked whale**

15A. Head with no prominent beak. *Go to 16.*

15B. Head with prominent beak. *Go to 21.*

16A. Robust body with narrow tail stock; **blunt forehead with squared melon with unique vertical crease but no beak**; gray back and sides with light anchor patch on chest; prominent dark dorsal fin; long, sickle-shaped flippers and dark flukes with median notch; born light gray, sub-adults chocolate-brown, then fades to pale gray with age; head and body white on older animal with **extensive linear white scarring on adults.** **Teeth:** 0/2-7 each side. **Size:** 1-1.5 m (neonate); 3-4 m, 300-500 kg (adult).

—*Grampus griseus*—**Risso's dolphin**

16B. Teeth (> greater than 7 pairs) in both upper and lower jaws; forehead without vertical median crease; predominant color black or dark gray. *Go to 17.*



17A. Robust black body, rounded head with white chin and chest; obvious **white oval patch behind eye;** large **prominent dorsal fin at midback** (2 m adult males) with **gray “saddle” behind dorsal fin;** large, rounded paddle-shaped flippers; flukes with median notch. Sexually dimorphic: straight, tall dorsal fin on males (to 2 m); shorter and falcate on females. **Teeth:** 10-12/10-12 each side. **Size:** 2.1-2.5 m, 180 kg (neonate); 4 m (weaning); 7-8 m, 4 t (adult female); 8-9 m, 5.6-8 t (adult male).

—*Orcinus orca*—**Killer whale**

17B. Flippers long and slender with pointed or blunt tips. *Go to 18.*

18A. Dorsal fin low and broad based, located on forward $\frac{1}{3}$ of back; head bulbous; body black to dark gray with light anchor-shaped patch on belly and often light gray saddle behind dorsal fin; often light streak above and behind each eye; long sickle-shaped flippers; deepened tail stock; 7-13 pairs of teeth in front half only of each jaw. *Go to 19.*

18B. Dorsal fin near middle of back. *Go to 20.*

19A. Bulbous head with prominent melon, slight beak and upturned mouthline; **black or dark gray body** except with **light markings on throat, shoulder and belly;** prominent, **broad-based dorsal fin located far forward on back** and may have faint saddle behind dorsal fin; sickle-shaped **flippers are sharply arched, with prominent “elbow”** (up to $\frac{1}{3}$ of body length). **Teeth:** 9-12/9-12 each side. **Size:** 1.6-1.9 m, 70-90 kg (neonate); 3.8-5 m, 800-1200 kg (adult female); 5-6 m, 1200-2000 kg (adult male). (Note: distribution generally limited to cold temperate regions of North Atlantic and southern hemisphere. (*Extralimital range.*))

—*Globicephala melas*—**Long-finned pilot whale**

19B. Bulbous head with prominent melon, slight beak and mouthline slants upward towards eye; gray or white diagonal stripe behind each eye (variable); **stocky but elongated brownish black or dark gray body with deep tail stock** (keel); **grayish white W-shaped patch on throat, light markings on shoulder and belly;** gently curved, **pointed flippers** positioned close to head (less than $\frac{1}{2}$ of body length); **prominent, broad-based dorsal fin located far forward on back** and may have faint saddle behind dorsal fin. **Teeth:** peg-like teeth; 7-9/7-9 each side. **Size:** 1.4 m, 60 kg (neonate); 4-5 m, 600-1200 kg (adult female); 4.6-6 m, 1200-1800 kg (adult male).

—*Globicephala macrorhynchus*—**Short-finned pilot whale**



20A. Uniformly slender, dark body all black except faint patch on chest; small, **tapered narrow head overhangs lower jaw**; slight melon, no beak, long straight mouthline; **pronounced falcate dorsal fin located mid-back**; short, **narrow flippers with unique humps, or “elbows”**, midway on leading edge.

Teeth: 7-12/7-12 each side. **Size:** 1.6-1.9 m, 80 kg (neonate); 4.6-5 m (adult female); 5.2-6 m, 900-1400 kg (adult male).

—*Pseudorca crasidens*—**False killer whale**

20B. Body black or dark gray with white lips. White to light gray patch on belly; flippers lack humps on leading edges.

Teeth: 9/26 per side. *Go to 21.*

21A. Long, rounded head with slight melon and no beak; dark body forms faint gray cape that dips low below dorsal fin, slightly lighter sides; dorsal fin tall and falcate, located mid-back or slightly aft; long flippers with rounded tips; **white lips**, (some individuals) **white chin (“goatee”) and white belly**; face with dark “mask” (often not visible if specimen is not fresh).

Teeth: 8-11/10-13 each side. **Size:** .8 m (neonate); 2.1-2.6 m, 155-230 kg (adult).

—*Feresa attenuata*—**Pygmy killer whale.**

21B. Torpedo-shaped body with small melon-shaped head, somewhat pointed snout, no beak and slender tail stock; face narrows from eye to snout often with **white, light-gray or pinkish lips**; tall, falcate dorsal fin with pointed tip, located mid-back; flippers long, sharply pointed; face with dark “mask” (often not visible if specimen is not extremely fresh); and, **dark cape that dips low below dorsal fin.** **Teeth:** 20-26/20-26 each side. **Size:** 1 m, 15 kg (neonate); 2.3-2.7 m, 200-275 kg (adult).

—*Peponocephala electra*—**Melon-headed whale**

21C. Conical head, beak continuous with forehead (no crease); **white lips, tip of snout and throat**; tall, falcate dorsal fin, located midback with leading edge usually at 45 degree angle; large flippers end in a distinct point; large fluke with distinct notch; body dark gray to black above with **narrow cape** along back to tail, lighter sides and whitish or pinkish belly; pinkish or yellowish white blotches and spots, especially on lower half of body.

Teeth: 20-27/20-27 each side (large with shallow, vertical ridges). **Size:** 1 m (neonate); 2.3-2.7 m, 130-160 kg (adult).

—*Steno brendanensis*—**Rough-toothed dolphin**



21D. Beak distinct from forehead (set off by crease). *Go to 22.*

22A. Body **stocky with blue-gray back and sides and narrow tail stock; short, well-defined beak** with dark line from beak to flippers; thin, small pointed flippers and small flukes; small, triangular to falcate dorsal fin located mid-back; most have **broad dark stripe from eye to anus area beneath a smaller pale band** that extends to tailstock.

Teeth: 36-44/34-44 each side. **Size:** 1 m, 19 kg (neonate); 2.4-2.7 m, 130-210 kg (adult).

—*Langenodelphis hosei*—**Fraser's dolphin**

22B. Beak moderate to long (greater than 3 percent of body length); appendages of normal dolphin proportions. *Go to 23.*

23A. Robust body, rounded head with **short, thick beak with distinct crease**; narrow flippers come to a distinct point, flukes deeply notched; prominent dorsal fin located mid-back; **color highly variable with dark to light gray dorsally fading to white** or even pink on belly (may be some spotting in older animals); no distinctive color pattern, some have dark dorsal cape and light spinal blaze visible. Two “ecotypes” are recognized: “coastal form” is shorter and slimmer than larger “offshore form”.

Teeth: 20-26/18-24 each side. **Size:** 0.8-1.3 m, 10-20 kg (neonate); 2.5-3 m, 140-240 kg (adult coastal form); 3.3-3.8 m, 250-650 kg (adult offshore form).

—*Tursiops truncatus*—**Bottlenose dolphin**

23B. Teeth/row >30 each side. *Go to 24.*

24A. Erect to slightly falcate dorsal fin; dark back and white belly tan to buff thoracic patch and light gray streaked tail stock form hourglass pattern crossing below dorsal fin; chin to flipper stripe; 41-60 teeth/row; palate with 2 deep longitudinal grooves; maximum body length 2.6 m. *Go to 25.*

24B. No hourglass pattern on side; flipper stripe (if present) runs from eye or gape, not chin; palatal groves shallow (if present). *Go to 26.*



25A. Slender body, melon rounded with long, pointed black beak; **distinctive black back and dark cape form V-shaped saddle directly below dorsal fin; “hour glass” pattern on the sides cross below saddle**, tan patch (forward) and gray patch (aft); eye ring and **dark flipper stripe meets lip just ahead of gape**; predominantly dark flippers, flukes and tall, falcate to triangular **dorsal fin (usually dark with light center)**; 1-2 broken tan or gray lines interrupt white underside.

Teeth: 40-54/40-54 each side, grooves on palate. **Size:** 0.8-1 m (neonate); 1.7-2.3 m, 80-200 kg (adult). (*Extralimital range*)

—*Delphinus delphis*—**Short-beaked common dolphin**³

25B. Body relatively slender; **beak longer** than short-beaked common dolphin; **melon flatter**; thoracic patch not contrasting as strongly with cape; **flipper stripe usually more subtle but wider than short-beaked dolphin** but meets lip patch near or just ahead of gape, remains wide ahead of eye; eye patch not as strongly contrasting; light patches on extremities faint if present; hourglass pattern fainter with distinctive V-shape below the dorsal fin.

Teeth: 47-67/47-67 each side; grooves on palate. **Size:** 0.8-1 m (neonate); 1.9-2.5 m, 80-235 kg (adult).

—*Delphinus capensis*—**Long-beaked common dolphin**

26A. **Slender body with narrow, pale tail stock** (no keel); moderately long, dark beak with distinct crease; dark, slender pointed flippers; body black to dark gray on back and white-pink on belly; **prominent black stripe from eye to anus, eye to flipper (“bilge stripe”)** and **thin dark streak behind eye**; light gray shoulder blaze, sweeping back and up toward dorsal fin (not always visible with white or pink ventral side).

Teeth: 38-59/37-55 each side. **Size:** 1 m, 11 kg (neonate); 1.4-1.7 m (weaning); 2.2-2.6 m, 100-160 kg (adult).

—*Stenella coeruleoalba*—**Striped dolphin**

³ *Delphinus capensis* and *Delphinus delphis*, both *Delphinus* spp. are listed to note the occurrence of separate species. To date, the short-beaked common dolphin, *D. delphis*, has not been confirmed in the WCR. In the WCR, *Delphinus capensis* is present only in Aruba, Colombia and Surinam. The so-called “Venezuelan stock” could be a dwarf form of *Delphinus* and some authors refer to it as *Delphinus* spp. (See References p. 71; D. Rice, 1998.)



26B. No continuous stripe from eye to anus. (Note: If a stripe from the eye to the anus is present, it does not reach the eye or anus.)
Go to 27.

27A. Generally, color pattern two part (dark cape with lighter sides and belly); beak tip is light; light to heavy spotting present on dorsal area of adults (on some individuals, spots may be absent); flipper stripe (if present) runs from gape, not eye; no palatal grooves. *Go to 28.*

27B. Color pattern three-part (white belly, light gray sides, dark gray cape); beak tip dark; usually dark line on top of snout; no spotting on dorsal area of adults; cape dips only slightly, to lowest point at level of dorsal fin; eye-to-flipper stripe present; shallow palatal grooves sometimes present. *Go to 29.*

28A. Body moderately robust with moderate keel; **two-toned color pattern:** dark purplish gray back and cape, light gray sides and white belly; usually **long, thick, white-lipped beak**; **pale spinal blaze** sweeps up from side toward dark, falcate dorsal fin (sometimes obscured by spots); dark flippers and tail stock single color (pales with age); **variable spotting** develops with age: slight to heavy spotting on adults. (Calves born unspotted with dark spotting on belly at weaning age.)

Teeth: 32-42/30-40 each side. **Size:** 0.8-1.2 m (neonate); 1.4 m (weaning); 1.7-2.3 m, 100-145 kg (adult).

—*Stenella frontalis*—**Atlantic spotted dolphin**

28B. **Long, narrow white-tipped beak and lips**; **dark band from beak to flipper** (may have dark ring around eye); **bicolored with dark back and light gray sides and belly**; **distinct dark gray cape extending past dorsal fin** (narrow at face and sweeps to lowest point on side in front of dorsal fin); dorsal fin slender, variably falcate and located mid-back; **no shoulder blaze**; tail stock single color (pales with age) with pronounced keel in adult males. **Spotting develops with age:** adults generally with dorsal spotting and gray bellies (spotting sometimes absent.)

Teeth: 35-48/34-37 each side. **Size:** 0.8-1 m (neonate); 1.4 m (weaning); 1.6-2.6 m, 90-120 kg (adult).

—*Stenella attenuata*—**Pantropical spotted dolphin**



29A. Body fairly robust with moderate keel; **tri-colored** (dark gray back, gray sides and white belly); **thick, short and broad black-tipped beak and black “lips”**; black line from tip to apex of melon; **dark “mustache” present on top of beak**; falcate dorsal fin (less triangular than long-snouted spinner dolphin); distinct **dark gray or black cape dips above eye and below dorsal fin**.

Teeth: 39-49/38-48 each side. **Size:** 0.8 m, 10 kg (neonate); 1.8-2 m, 75 kg (adult).

—*Stenella clymene*—**Clymene dolphin**

28B. Slender body with **exceedingly long, slender beak; black-tipped lips and beak tip; dorsal fin** variably falcate to **triangular; dark stripe from eye to flipper**; flippers pointed; adult males have prominent ventral keel; **tricolored pattern** (may be obscured) **with parallel borders of color**; slender dark gray cape does not dip below dorsal fin, light tan-gray sides and white belly.

Teeth: 44-64/42-62 each side. **Size:** 0.7-0.8 m (neonate); 1.8-2.2 m, 75-95 kg (adult).

—*Stenella longirostris*—**Long-snouted spinner dolphin**

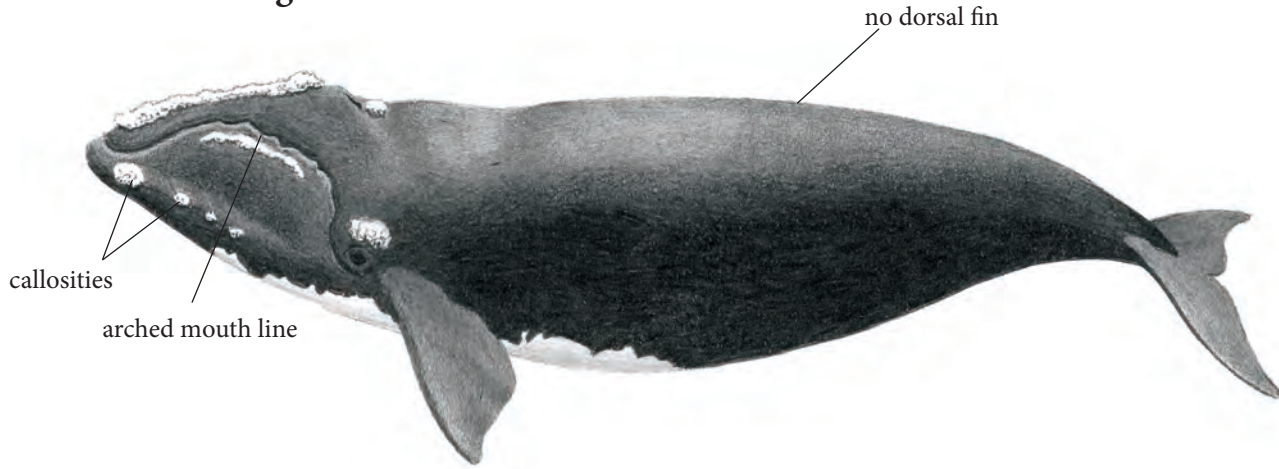
29 C. Small, robust compact body; bluish or brownish gray upper side with pale gray, white or pinkish underside; **long beak, slightly rounded melon and triangular dorsal fin** at mid-back; broad flippers; cape (slopes down to a point under the dorsal fin); broad flukes with distinct notch. (Found only in coastal areas from Honduras south to Brazil, mostly related to mouths of rivers.)

Teeth: 26-36/26-36 each side. **Size:** 1.3-2.1 m, 35-45 kg (adult).

—*Sotalia guianensis* —**Guiana dolphin**



North Atlantic right whale



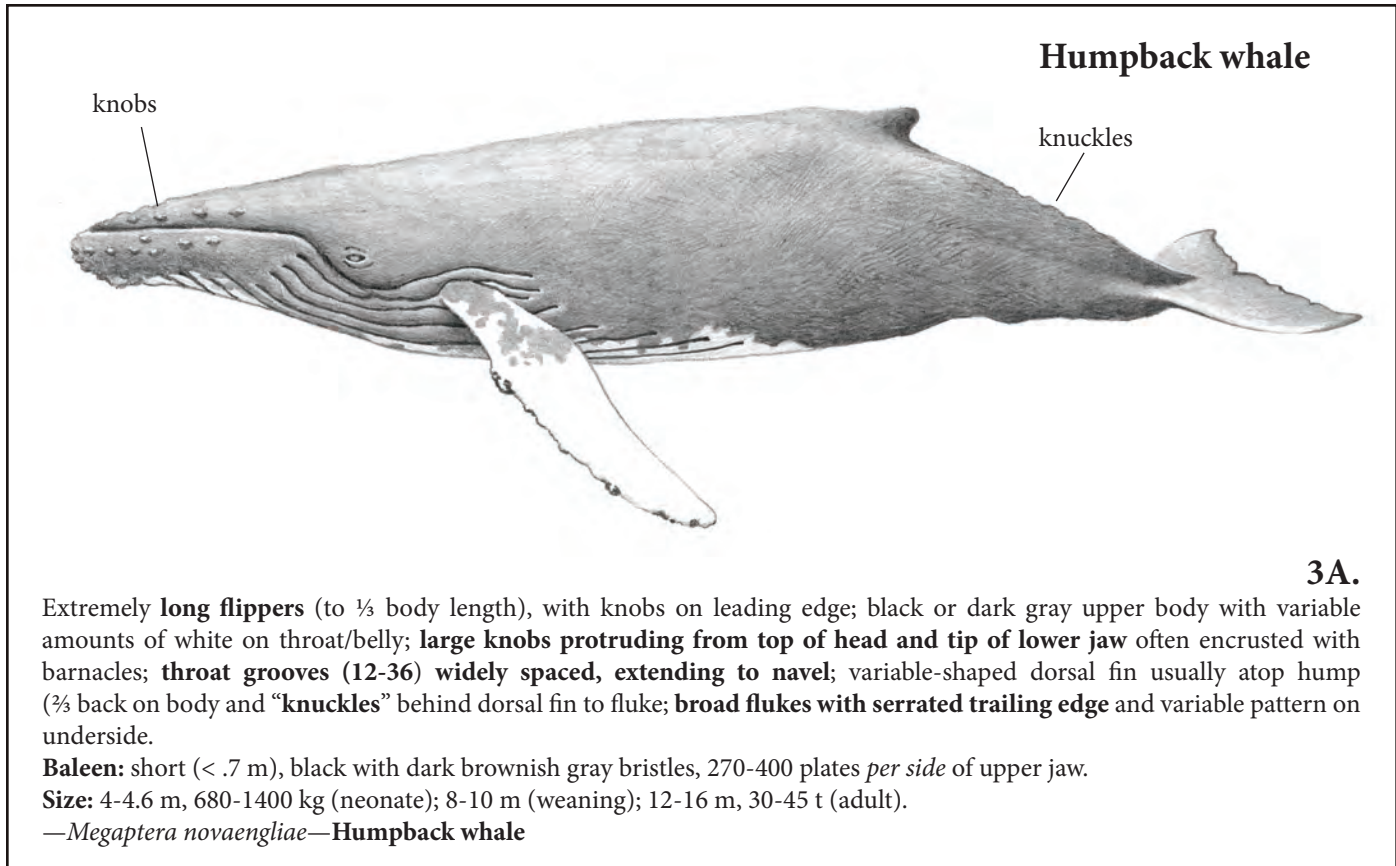
2A.

No throat grooves or creases on chin or throat; **no dorsal fin**; **upper jaw and mouth line strongly arched** when viewed from side; large head ($\frac{1}{3}$ body length) with long, narrow rostrum; **callosities** (roughed areas of skin) on head, lower lip and around eyes only; large, **paddle-shaped flippers**; **robust body, black**, often with white ventral blotches, chin dark; broad, triangular flukes with smooth trailing edge and distinct median notch. (*Extralimital*)

Baleen: exceptionally long, narrow, black plates (less than (<) 2.8 m) with fine bristles, 200-270 plates *per side* of upper jaw.

Size: 4-4.6 m, 900 kg (neonate); 15-17 m, 45-90 tons (t) (adult).

—*Eubalaena glacialis*—**North Atlantic right whale**



3A.

Extremely **long flippers** (to $\frac{1}{3}$ body length), with knobs on leading edge; black or dark gray upper body with variable amounts of white on throat/belly; **large knobs protruding from top of head and tip of lower jaw** often encrusted with barnacles; **throat grooves (12-36) widely spaced, extending to navel**; variable-shaped dorsal fin usually atop hump ($\frac{1}{3}$ back on body and “**knuckles**” behind dorsal fin to fluke; **broad flukes with serrated trailing edge** and variable pattern on underside.

Baleen: short (< .7 m), black with dark brownish gray bristles, 270-400 plates *per side* of upper jaw.

Size: 4-4.6 m, 680-1400 kg (neonate); 8-10 m (weaning); 12-16 m, 30-45 t (adult).

—*Megaptera novaengliae*—**Humpback whale**

Minke whale



5A.

Black or dark steel-gray upper body; may have **pale chevron** markings behind head extending from light colored belly to midline of back; **head sharply pointed** with **single, sharp median ridge** on flat rostrum; prominent hooked dorsal fin; flipper small with broad **white band**; slightly notched fluke with slight concave trailing edge, underside light usually with dark margin; **throat grooves (50-70)** extending nearly to navel.

Baleen: short (< .3 m), coarse yellow-white with fine white bristles, 230-260 plates *per side* of upper jaw.

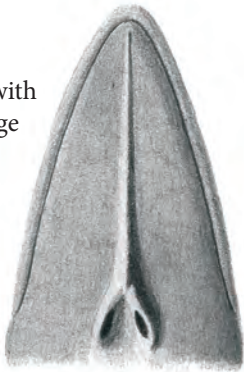
Size: 2.4-2.8 m, 320 kg (neonate); 4.5-5.5 m (weaning); 7-9 m, 6-9 t (adult).

—*Balaenoptera acutorostrata*—**Minke whale**

Sei whale



rostrum with
single ridge



5B.

Sleek, dark gray body with cream-colored underside, often with light oval scars; slender, erect, falcate dorsal fin ($\frac{2}{3}$ back on body); distinct notched fluke with almost straight trailing edge; **short throat grooves (32-60)**, usually end just behind flipper.

Baleen: (< .8 m) black with fine white to grayish-brown coarse bristles, 220-400 plates *per side* of upper jaw.

Size: 4.5 m, 680 kg (neonate); 9 m (weaning); 15-19 m, 15-35 t (adult).

—*Balaenoptera borealis*—**Sei whale**

Bryde's whale



6A.

Three parallel, conspicuous longitudinal ridges on head before blowholes; uniformly dark gray body with pale to pink belly, some pale blotches or mottling; both lower lips uniformly gray, head coloration symmetrical; dorsal fin strongly curved with pointed tip; distinct notched fluke; **throat grooves (40-50)** extend at least to navel.

Baleen: short (< .4 m), dark gray with coarse bristles, 250-370 plates *per side*.

Size: 3.4-4 m, 680 kg (neonate); 7.1 m (weaning); 13-15.5 m, 12-20 t (adult).

—*Baleanoptera edeni*—**Bryde's whale**



rostrum with
three ridges

Blue whale



7A.

Upper **body blue-gray with light mottling** behind the head region and white/gray/yellowish belly; head coloration symmetrical; **broad head with U-shaped rostrum with prominent “splashguard”** before blowholes and single, short central ridge forward of blowhole; tiny, stubby dorsal fin set far back; **throat grooves (55-88)** extending at least to navel; **dorsal fin very small, $\frac{3}{4}$ back on body**; flukes broad and triangular with smooth trailing edge and notched fluke. (*Extralimital*)

Baleen: < 0.9 m, 270-400 black plates *per side* of upper jaw, with coarse bristles; tongue and palate black.

Size: 7-8 m, 2-3.6 t (neonate); 12.8-16 m, 23 t (weaning); 22-26 m, 100-150 t (adult).

—*Balaenoptera musculus*—**Blue whale**

Fin whale



7B.

Dark gray with light undersides, unique **asymmetrical head coloration with black jaw on left side and white jaw on right side**; back dark with light streaks or swirls (blaze) and **pale chevron on back** behind head, especially prominent on right side; long, sleek body with flat, V-shaped rostrum; **single rostral ridge** extends from blowhole to snout; sharp ridge on back from dorsal fin to **broad triangular flukes**; **throat grooves (56-100)**, longest ending at least to navel; dorsal fluke is dark and ventral (underside) light.

Baleen: 0.7 m dark gray and yellow striped, 260-480 plates *per side* of upper jaw, except for light colored front portion on right side.

Size: 6-6.5 m, 1.8-2 t (neonate); 11 m (weaning); 20-24 m, 50-80 t (adult).

—*Balaenoptera physalus*—**Fin whale**

right side

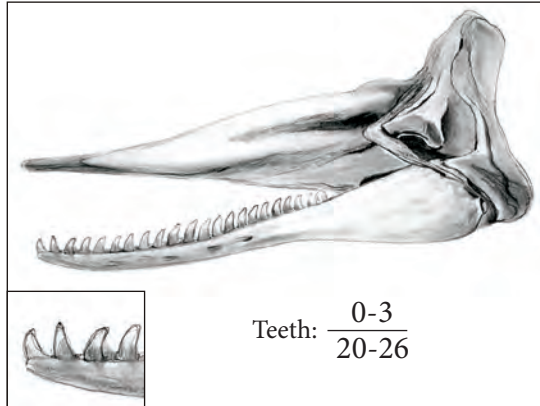


left side





Sperm whale



Teeth: $\frac{0-3}{20-26}$

9A.

Huge, squared head measuring up to $\frac{1}{3}$ body length with **narrow underslung lower jaw**; dark body **appears wrinkled** with **dorsal “hump” on back** (instead of dorsal fin) followed by series of bumps or “knuckles” (along midline from dorsal hump to fluke); **single blowhole on front left corner of head**; small, paddle-shaped flippers; large triangular flukes with straight trailing edge and deep median notch.

Size: 3.5-4 m, 1 t (neonate); 6.7 m (weaning); 15-18 m; 36-57 t (adult male) and 9-12.5 m, 12-20 t (adult female).

—*Physeter macrocephalus*—**Sperm whale**

Pygmy sperm whale



false gill

10A.

Short, **robust body with squared or conical shark-like head** and **tiny under-slung lower jaw**; blowhole left of center; **“false gill” or pale crescent-shaped marking** between eye and flipper; short flippers located far forward; **no throat creases**; tiny, slightly hooked dorsal fin (located aft of mid-back); short broad flippers located far forward on body; steel-gray back, lighter down sides to white belly; light colored circular mark anterior (in front of) to eye.

Size: 1-1.2 m, 55 kg (neonate); 2.7-3.4 m, 320-410 kg (adult).

—*Kogia breviceps*—Pygmy sperm whale

upper jaw



lower jaw

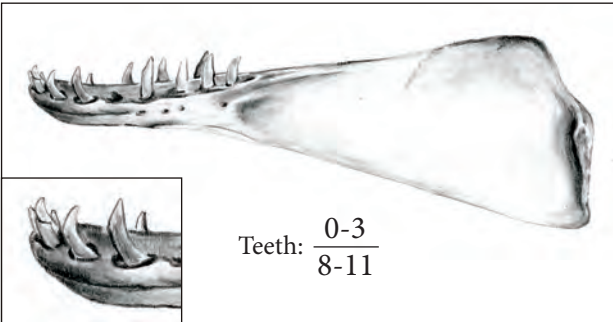


Teeth: $\frac{0-3}{12-16}$

Dwarf sperm whale



false gill



Teeth: $\frac{0-3}{8-11}$

10B.

Short, robust body with small shark-like head with short slightly pointed snout and tiny underslung lower jaw; several short throat creases; blowhole left of center; “false gill” or pale crescent-shaped marking between eye and flipper; prominent, falcate dorsal fin located mid-back; short broad flippers located far forward on body; dark gray-black back may appear wrinkled, lighter down sides to white belly.

Size: 1m, 46 kg (neonate); 2.1-2.7 m, 140-270 kg (adult).

—*Kogia sima*—Dwarf sperm whale

Cuvier's beaked whale

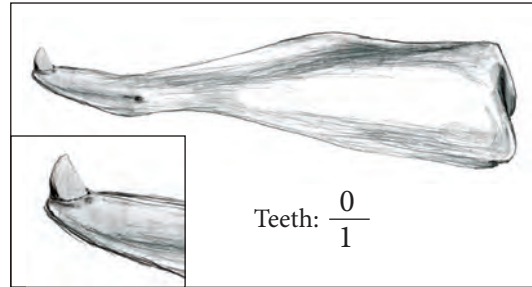


12A.

Robust, cigar-shaped body with small head and **sloping forehead with poorly defined beak** and upturned mouthline; lower jaw extends past upper jaw; depression behind blowhole; short flippers fit into “**flipper pockets**” (slight depressions in body wall); small dorsal fin located far aft; **flukes unnotched**; **body mottled golden tan to reddish brown, dark eye patch**; forehead, beak and chin are creamy white. Adult males often with white head and linear tooth scarring on body and round scars common.

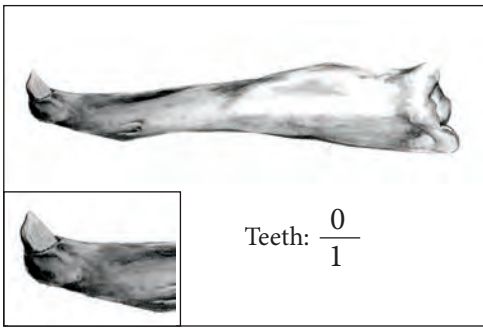
Size: 2-3 m, 250-300 kg (neonate); 5-5.7 m, 2-3 t (adult).

—*Ziphius cavirostris*—**Cuvier's beaked whale**



Teeth: $\frac{0}{1}$

True's beaked whale



Teeth: $\frac{0}{1}$

12B.

Spindle-shaped body tapers toward tail; small head with **slightly bulging melon delineated by slight depression** behind blowhole and medium, bottle-shaped beak; dark gray to brown upper body with contrasting dark blaze along back from melon past triangular dorsal fin; dorsal fin darker than back, located far aft; **black oval eye patch and lips**; slight ridge from dorsal fin to flukes; paler sides and belly, rear third of body may be lighter pale; **flukes unnotched; parallel scarring on males.** (*Extralimital*)
Size: 2.2 m (neonate); 5.1-5.4 m, 1.4 t (adult). Few have been seen alive.
—*Mesoplodon mirus*—True's beaked whale

Blainville's beaked whale

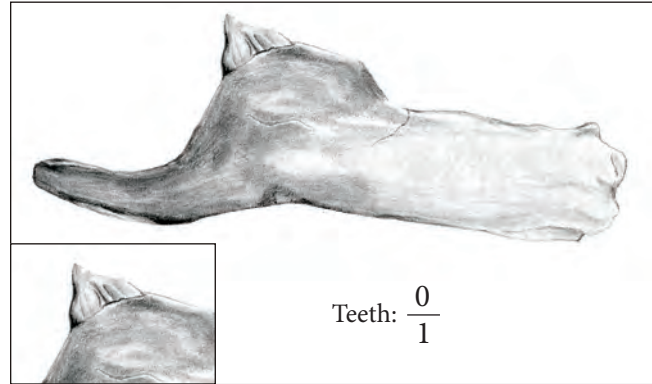


13A.

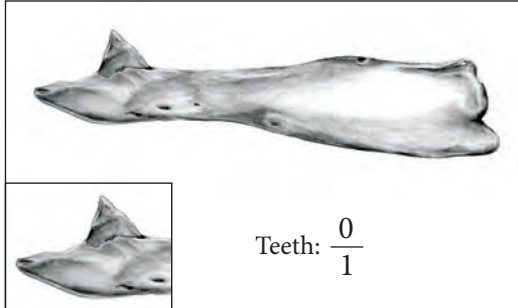
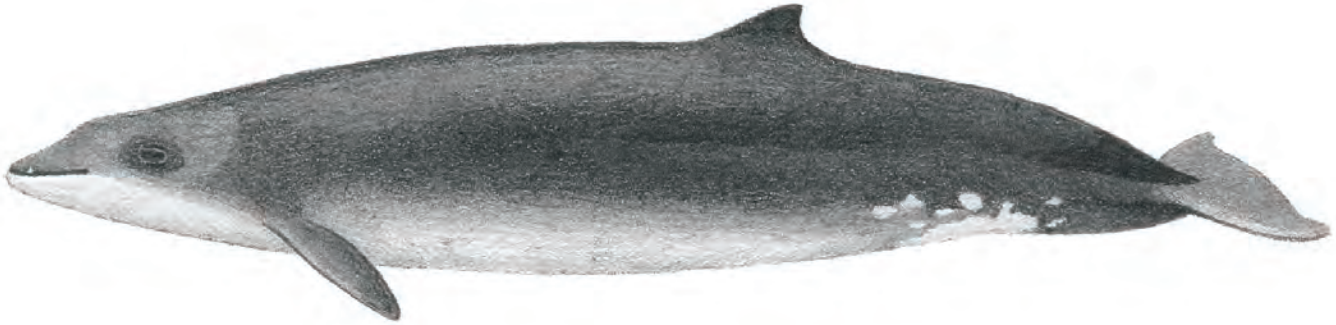
Spindle-shaped body, thick moderate beak, **forehead flattened forward of blowhole**; grayish brown to black on back and lighter gray underneath with large, tan or grayish **white oval blotches all over body**; small, triangular to falcate dorsal fin set $\frac{2}{3}$ back on body; small flippers; **flukes unnotched**. (Note: Female and subadult teeth are un-erupted. Tooth shape is definitive of this species; absence of visible teeth requires museum preparation for identification.)

Size: 2-2.5 m, 60-150 kg (neonate); 4.5-4.7 m, 1 t (adult).

—*Mesoplodon densirostris*—**Blainville's beaked whale**



Gervais whale



Teeth: $\frac{0}{1}$

14A.

Body slender, laterally compressed (taller than is wide); extremely small, tapered head has bulge in front of blowhole; **small slightly bulging forehead curves down to pronounced, slender beak** with relatively straight mouthline; **uniformly dark gray back and sides**, belly lighter with irregular white blotches; short tapered flippers low on body; small, falcate to triangular dorsal fin, located far aft; flukes unnotched.

Size: 2.1 m (neonate); 4.5-5.2 m (adult female); 4.5-4.8 m (adult male), 1.2 t (adult).

—*Mesoplodon europaeus*—**Gervais beaked whale**

Sowerby's beaked whale

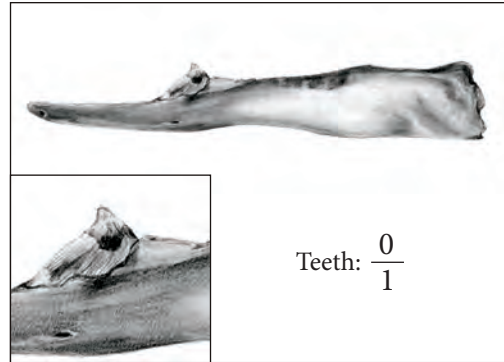


14B.

Slender spindle-shaped body with small head sloping to long beak (males with distinctive pencil-thin beak); pronounced **bulge in front of indentation of blowhole**; color slate gray or bluish gray to brown back with lighter sides, **blotches and limited scarring**; short, tapered flippers; small, falcate to triangular dorsal fin, located far aft; flukes unnotched. (*Extralimital*)

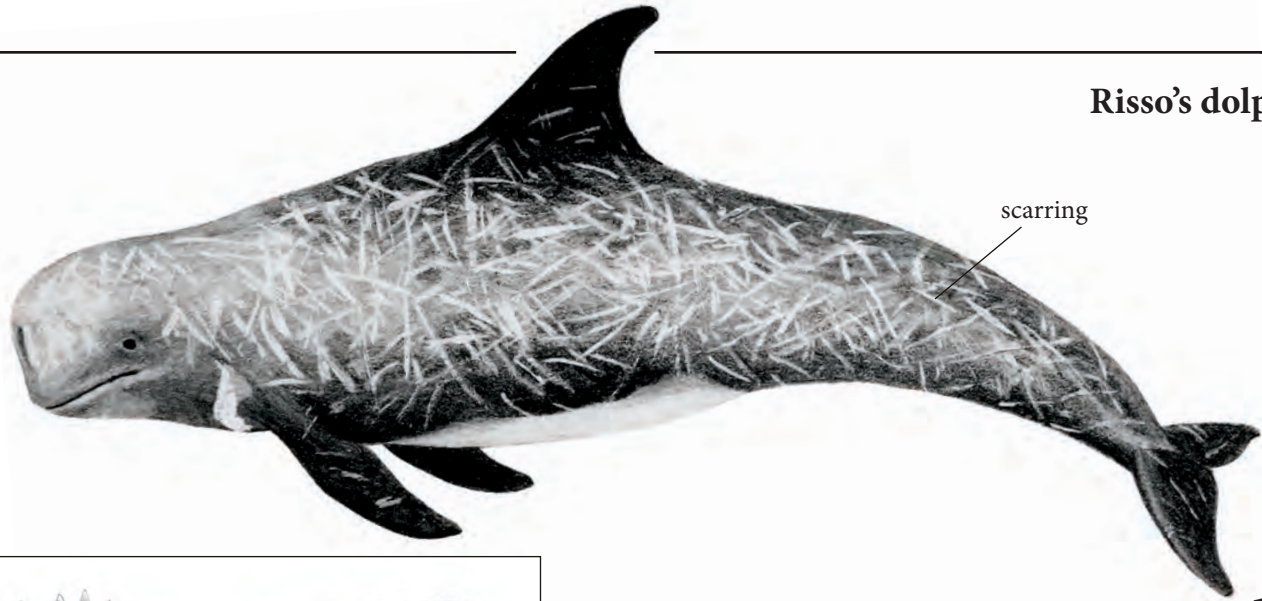
Size: 2.1-2.4 m, 170 kg (neonate); 3 m (weaning); 4.7-5.5 m, 1.3 t (adult).

—*Mesopolodon bidens*—Sowerby's beaked whale.



Teeth: $\frac{0}{1}$

Risso's dolphin

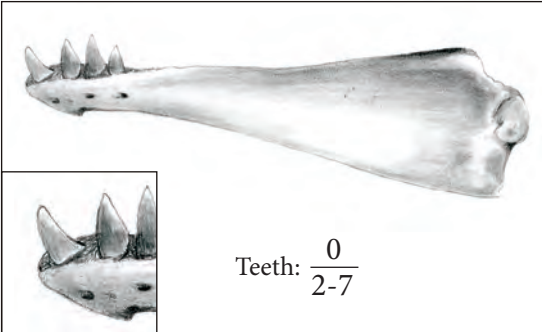


16A.

Robust body with narrow tail stock; blunt forehead with squared melon with unique vertical crease but no beak; gray back and sides with light anchor patch on chest; prominent dark dorsal fin; long, sickle-shaped flippers and dark flukes with median notch; born light gray, sub-adults chocolate-brown, then fades to pale gray with age; head and body white on older animal with **extensive linear white scarring on adults.**

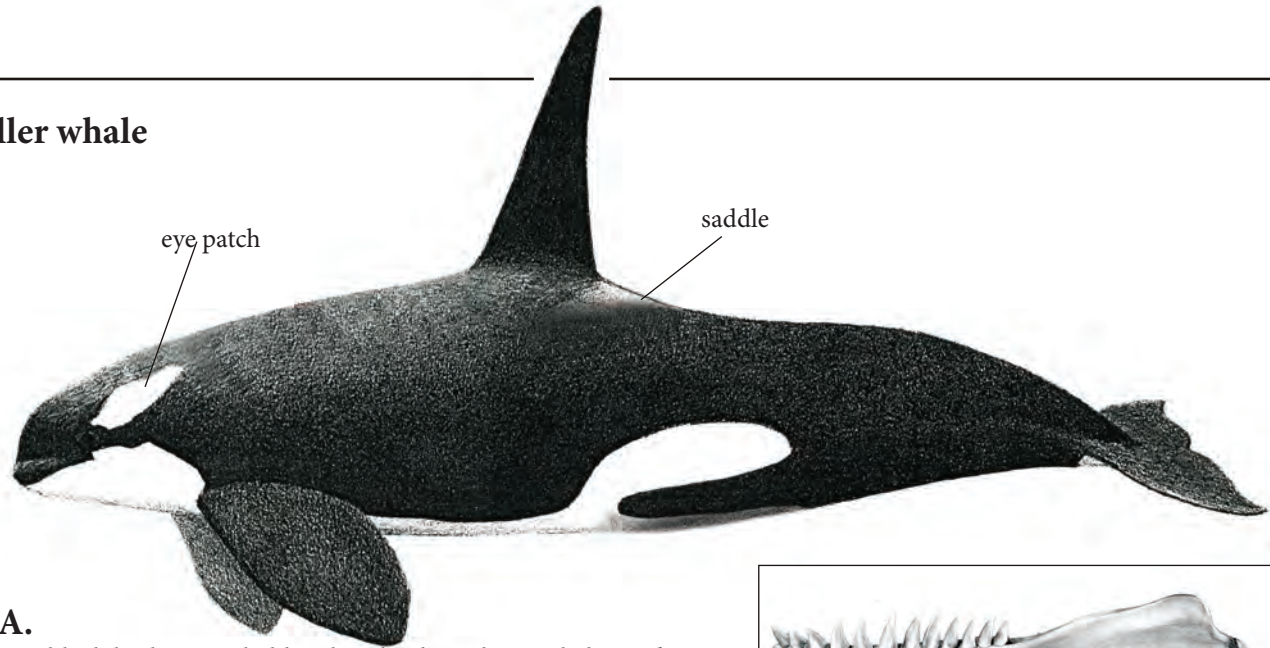
Size: 1.1-1.5 m (neonate); 3-4 m, 300-500 kg (adult).

—*Grampus griseus*—**Risso's dolphin**



Teeth: $\frac{0}{2-7}$

Killer whale

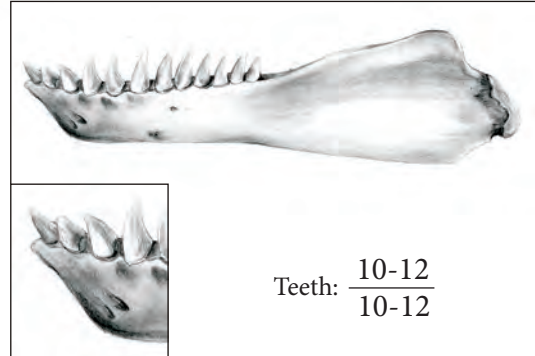


17A.

Robust black body, rounded head with white chin and chest; obvious white oval patch behind eye; large prominent dorsal fin at midback (2 m adult males) with gray “saddle” behind dorsal fin; large, rounded paddle-shaped flippers; flukes with median notch. Sexually dimorphic: straight, tall dorsal fin on males (to 2 m); shorter and falcate on females. Referred to as “blackfish” locally. (See Glossary p. 67.)

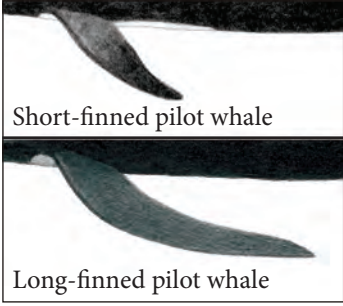
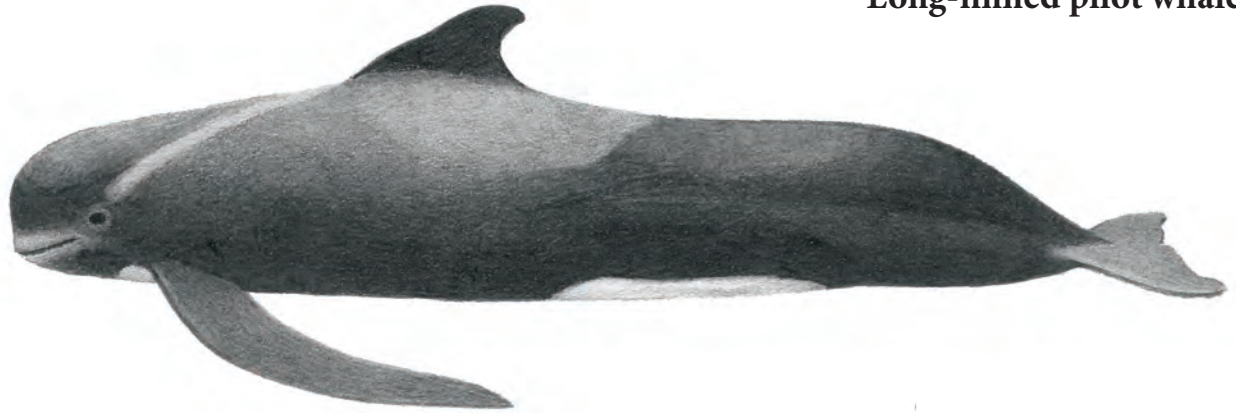
Size: 2.1-2.5 m, 180 kg (neonate); 4 m (weaning); 7-8 m, 4 t (adult female); 8-9 m, 5.6-8 t (adult male).

—*Orcinus orca*—**Killer whale**



Teeth: $\frac{10-12}{10-12}$

Long-finned pilot whale



Short-finned pilot whale

Long-finned pilot whale

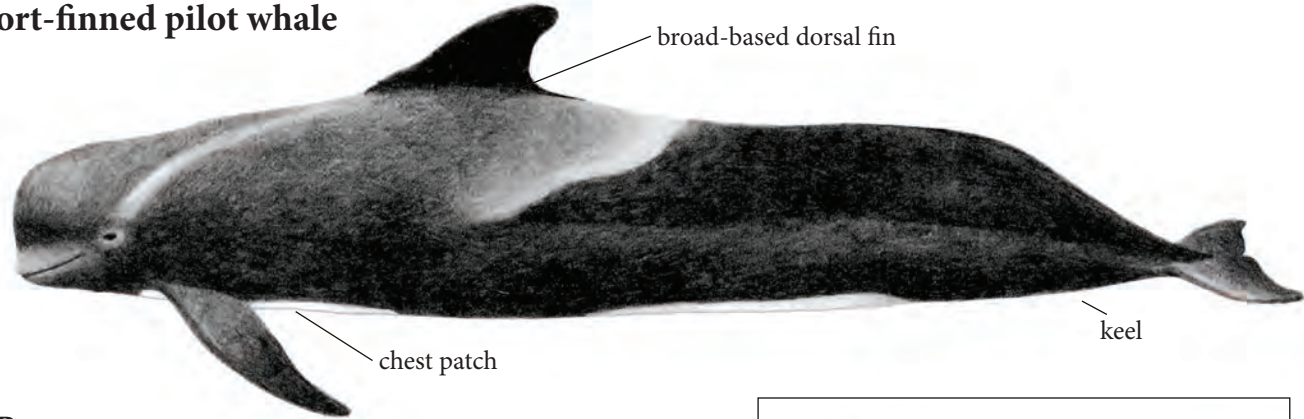
19A.

Bulbous head with prominent melon, slight beak and upturned mouthline; black or dark gray body except with light markings on throat, shoulder and belly; prominent, broad-based dorsal fin located far forward on back and may have faint saddle behind dorsal fin; sickle-shaped flippers are sharply arched, with prominent “elbow” (up to 1/5 of body length). (Note: distribution generally limited to cold temperate regions of North Atlantic and southern hemisphere. *(Extralimital)*)

Size: 1.6-1.9 m, 70-90 kg (neonate); 3.8-5 m, 800-1200 kg (adult female); 5-6 m, 1200-2000 kg (adult male).

—*Globicephala melas*—**Long-finned pilot whale**

Short-finned pilot whale

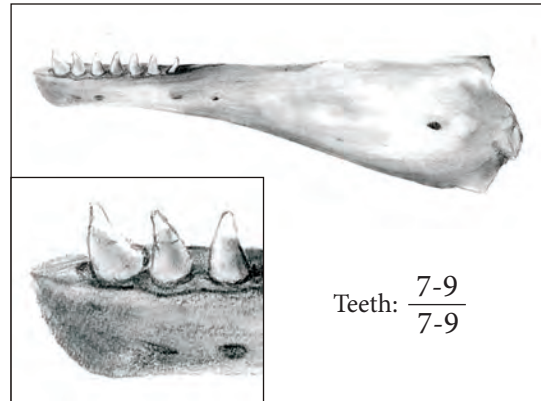


19B.

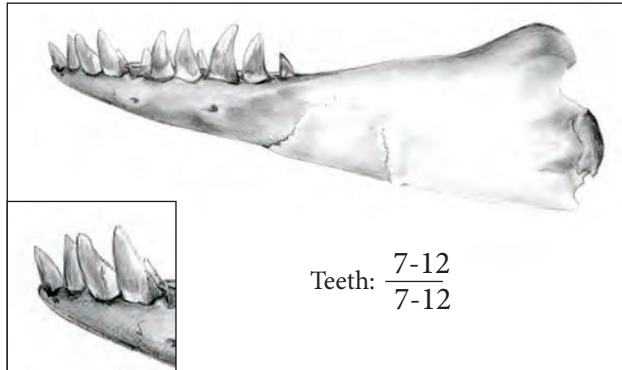
Bulbous head with prominent melon, slight beak and mouthline slants upward towards eye; Gray or white diagonal stripe behind each eye (variable); **stocky but elongated brownish black or dark gray body with deep tail stock (keel); grayish white W-shaped patch on throat, light markings on shoulder and belly;** gently curved, **pointed flippers** positioned close to head (less than $\frac{1}{4}$ of body length); **prominent, broad-based dorsal fin located far forward on back** and may have faint saddle behind dorsal fin. (See “blackfish” in Glossary.)

Size: 1.4 m, 60 kg (neonate); 4-5 m, 600-1200 kg (adult female); 4.6-6 m, 1200-1800 kg (adult male).

—*Globicephala macrorhynchus*—**Short-finned pilot whale**



False killer whale



20A.

Uniformly slender, dark body all black except faint patch on chest; small, **tapered narrow head overhangs lower jaw**; slight melon, no beak, long straight mouthline; **pronounced falcate dorsal fin located mid-back**; short, **narrow flippers with unique humps, or “elbows”**, midway on leading edge. (See “blackfish” in Glossary.)

Size: 1.6-1.9 m, 80 kg (neonate); 4.6-5 m (adult female); 5.2-6 m, 900-1400 kg (adult male).

—*Pseudorca crasidens*—False killer whale

Pygmy killer whale

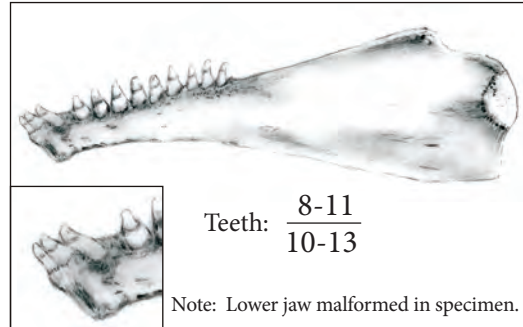


21A.

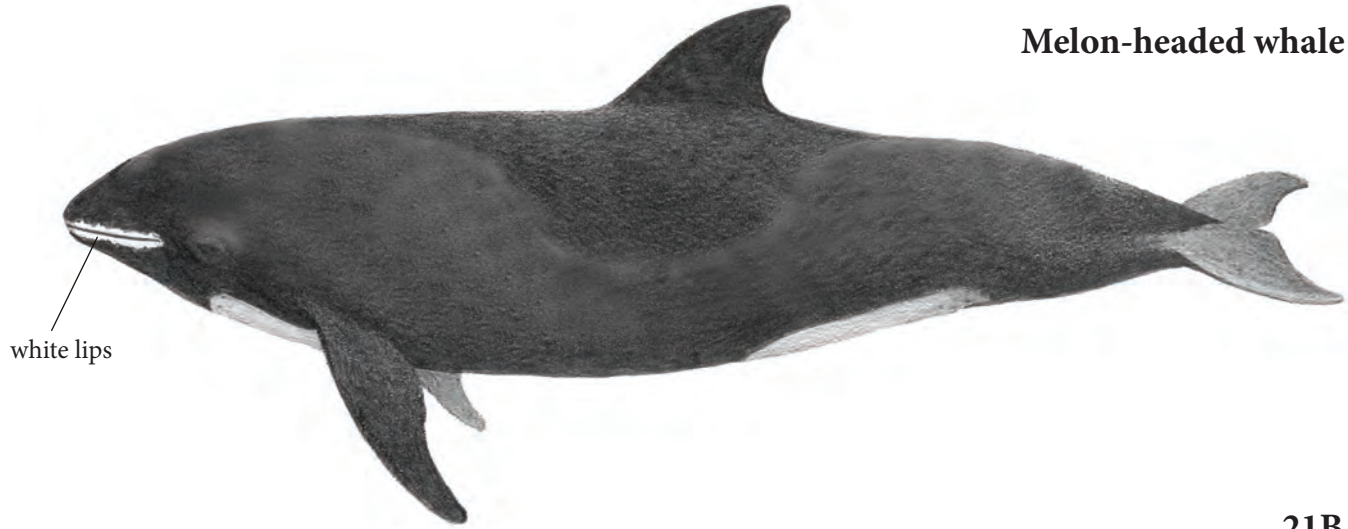
Long, rounded head with slight melon and no beak; dark body forms faint gray cape that dips low below dorsal fin, slightly lighter sides; dorsal fin tall and falcate, located mid-back or slightly aft; long flippers with rounded tips; **white lips**, (some individuals) **white chin** (“goatee”) and **white belly**; face with dark “mask” (often not visible if specimen is not fresh). (See “blackfish” in Glossary.)

Size: .8 m (neonate); 2.1-2.6 m, 155-230 kg (adult).

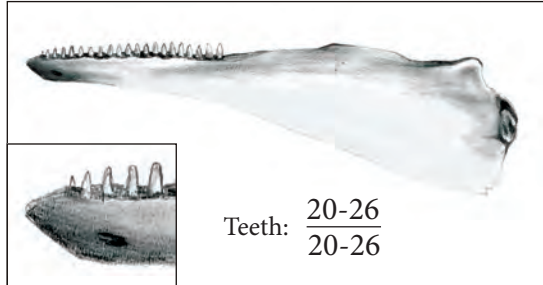
—*Feresa attenuata*—**Pygmy killer whale.**



Melon-headed whale



white lips



Teeth: $\frac{20-26}{20-26}$

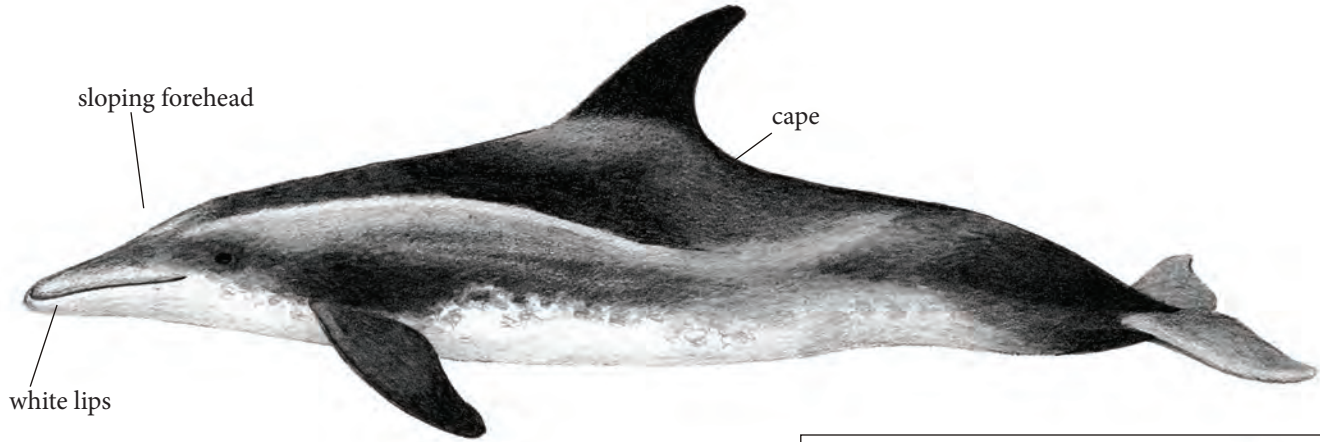
Torpedo-shaped body with small melon-shaped head, somewhat pointed snout, no beak and slender tail stock; face narrows from eye to snout often with white, light-gray or pinkish lips; tall, falcate dorsal fin with pointed tip, located mid-back; flippers long, sharply pointed; face with dark "mask" (often not visible if specimen is not extremely fresh); and, dark cape that dips low below dorsal fin. (See "blackfish" in Glossary.)

Size: 1 m, 15 kg (neonate); 2.3-2.7 m, 200-275 kg (adult).

—*Peponocephala electra*—**Melon-headed whale**

21B.

Rough-toothed dolphin

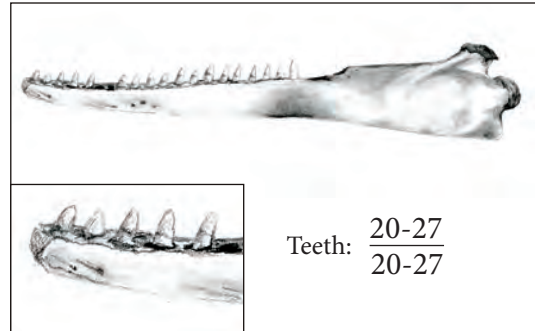


21C.

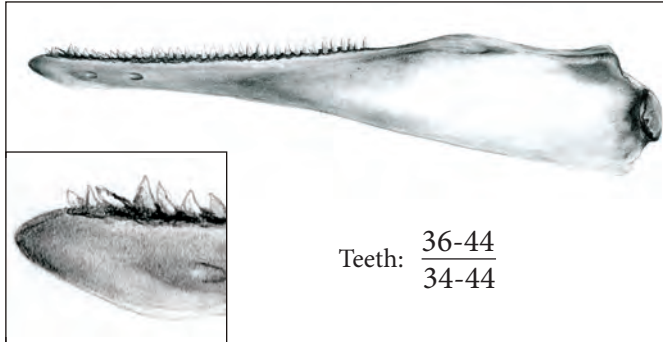
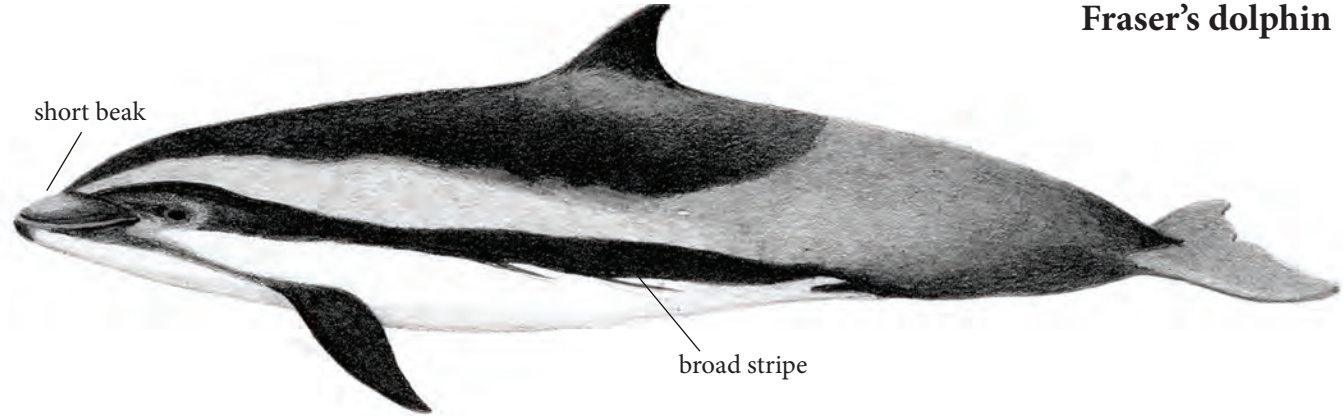
Conical head, beak continuous with forehead (no crease); white lips, tip of snout and throat; tall, falcate dorsal fin, located midback with leading edge usually at 45 degree angle; large flippers end in a distinct point; large fluke with distinct notch; body dark gray to black above with **narrow cape** along back to tail, lighter sides and whitish or pinkish belly; pinkish or yellowish white blotches and spots, especially on lower half of body.

Size: 1 m (neonate); 2.3-2.7 m, 130-160 kg (adult).

— *Steno brendanensis*—**Rough-toothed dolphin**



Fraser's dolphin



Teeth: $\frac{36-44}{34-44}$

22A.

Body stocky with blue-gray back and sides and narrow tail stock; short, well-defined beak with dark line from beak to flippers; thin, small pointed flippers and small flukes; small, triangular to falcate dorsal fin located mid-back; most have **broad dark stripe from eye to anus area beneath a smaller pale band** that extends to tailstock.

Size: 1 m, 19 kg (neonate); 2.4-2.7 m, 130-210 kg (adult).

—*Langenodelphis hosei*—**Fraser's dolphin**

Bottlenose dolphin

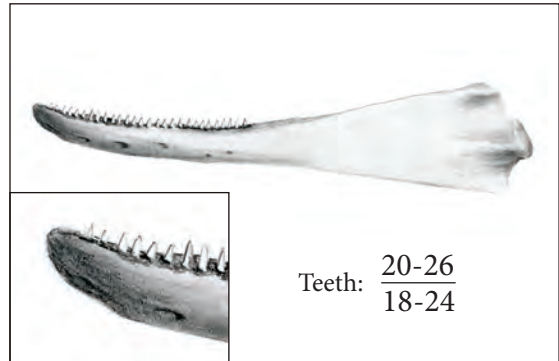


23A.

Robust body, rounded head with **short, thick beak with distinct crease**; narrow flippers come to a distinct point, flukes deeply notched; prominent dorsal fin located mid-back; **color highly variable with dark to light gray dorsally fading to white** or even pink on belly (may be some spotting in older animals); no distinctive color pattern, some have dark dorsal cape and light spinal blaze visible. Two “ecotypes” are recognized: “coastal form” is shorter and slimmer than larger “offshore form”.

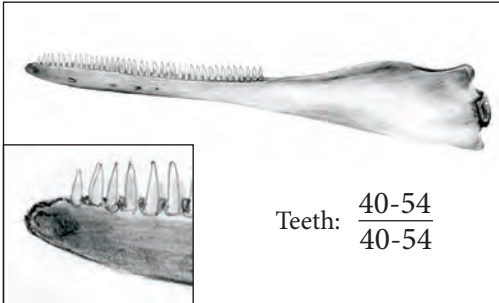
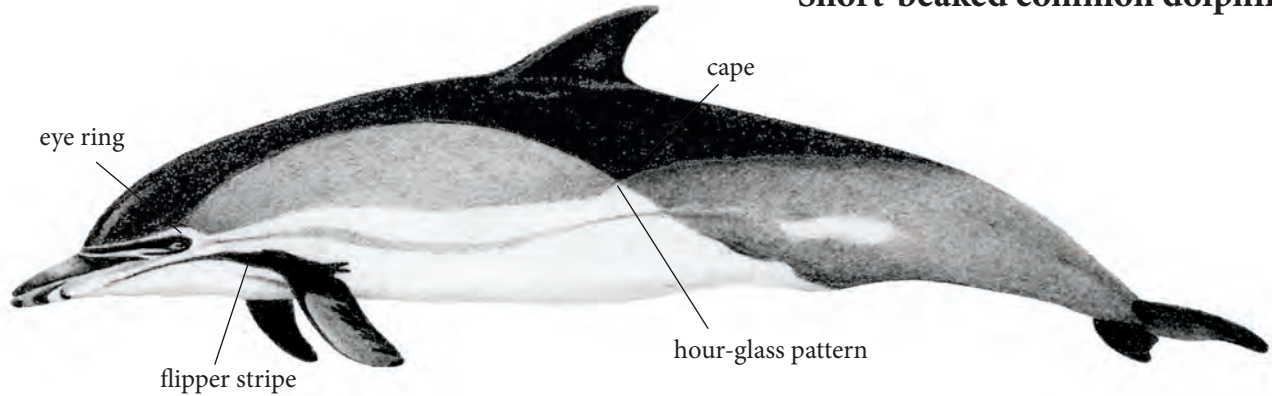
Size: 0.8-1.3 m, 10-20 kg (neonate); 2.5-3 m, 140-240 kg (adult coastal form); 3.3-3.8 m, 250-650 kg (adult offshore form).

—*Tursiops truncatus*—**Bottlenose dolphin**



Teeth: $\frac{20-26}{18-24}$

Short-beaked common dolphin



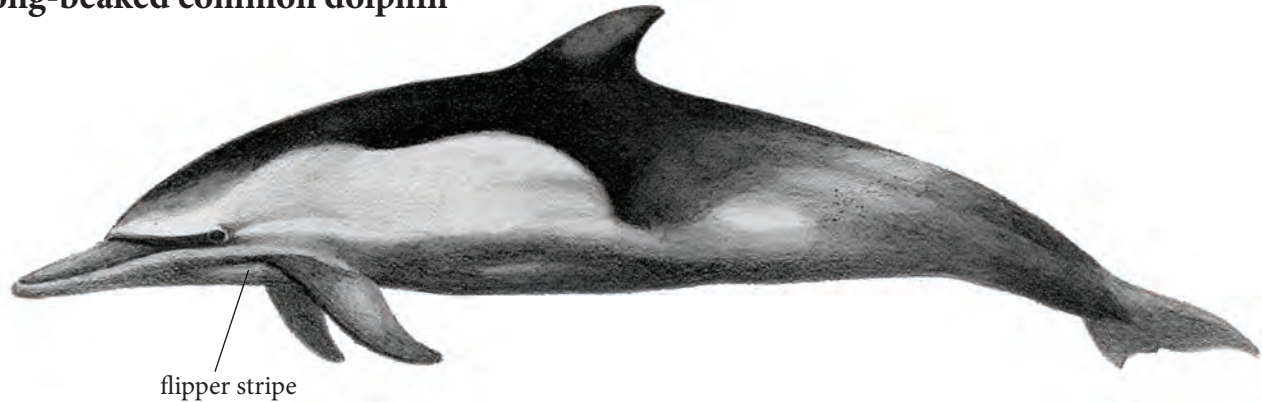
25A.

Slender body, melon rounded with long, pointed black beak; **distinctive black back and dark cape form V-shaped saddle directly below dorsal fin**; **“hour glass” pattern on the sides cross below saddle**, tan patch (forward) and gray patch (aft); eye ring and **dark flipper stripe meets lip just ahead of gape**; predominantly dark flippers, flukes and tall, falcate to triangular **dorsal fin (usually dark with light center)**; 1-2 broken tan or gray lines interrupt white underside. (*Extralimital*)

Size: 0.8-1 m (neonate); 1.7-2.3 m, 80-200 kg (adult).

—*Delphinus delphis*—**Short-beaked common dolphin**

Long-beaked common dolphin

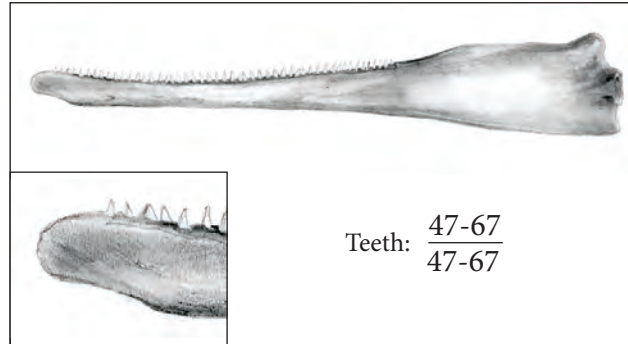


25B.

Body relatively slender; **beak longer** than short-beaked common dolphin; **melon flatter**; thoracic patch not contrasting as strongly with cape; **flipper stripe usually more subtle but wider than short-beaked dolphin** but meets lip patch near or just ahead of gape, remains wide ahead of eye; eye patch not as strongly contrasting; light patches on extremities faint if present; hourglass pattern fainter with distinctive V-shape below the dorsal fin.

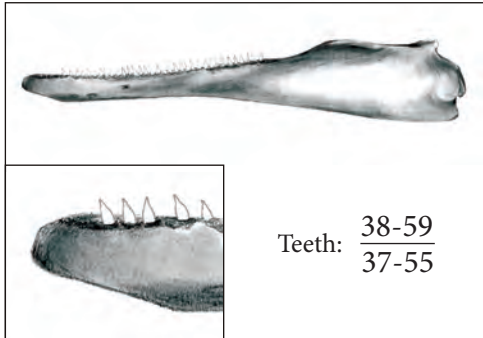
Size: 0.8-1 m (neonate); 1.9-2.5 m, 80-235 kg (adult).

—*Delphinus capensis*—**Long-beaked common dolphin**



Teeth: $\frac{47-67}{47-67}$

Striped dolphin



Teeth: $\frac{38-59}{37-55}$

26A.

Slender body with narrow, pale tail stock (no keel); moderately long dark beak with distinct crease; dark, slender pointed flippers; body black to dark gray on back and white-pink on belly; **prominent black stripe from eye to anus, eye to flipper (“bilge stripe”) and thin dark streak behind eye**; light gray shoulder blaze, sweeping back and up toward dorsal fin (not always visible with white or pink ventral side).

Size: 1 m, 11 kg (neonate); 1.4-1.7 m (weaning); 2.2-2.6 m, 100-160 kg (adult).
—*Stenella coeruleoalba*—**Striped dolphin**

Atlantic spotted dolphin

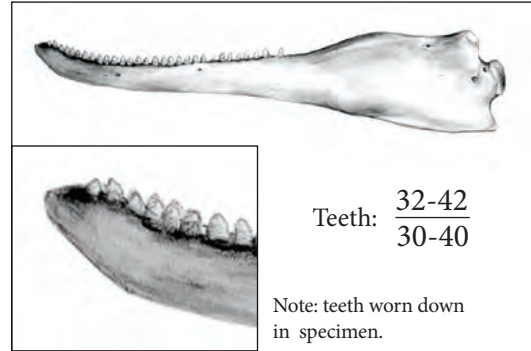


28A.

Body moderately robust with moderate keel; **two-toned color pattern**: dark purplish gray back and cape, light gray sides and white belly; usually **long, thick, white-lipped beak**; **pale spinal blaze** sweeps up from side toward dark, falcate dorsal fin (sometimes obscured by spots); dark flippers and tail stock single color (pales with age); **variable spotting** develops with age: slight to heavy spotting on adults (calves born unspotted with dark spotting on belly at weaning age).

Size: 0.8-1.2 m (neonate); 1.4 m (weaning); 1.7-2.3 m, 100-145 kg (adult).

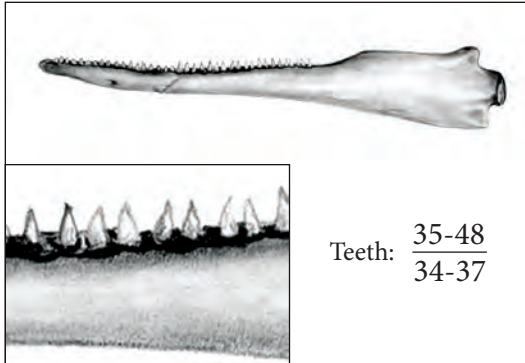
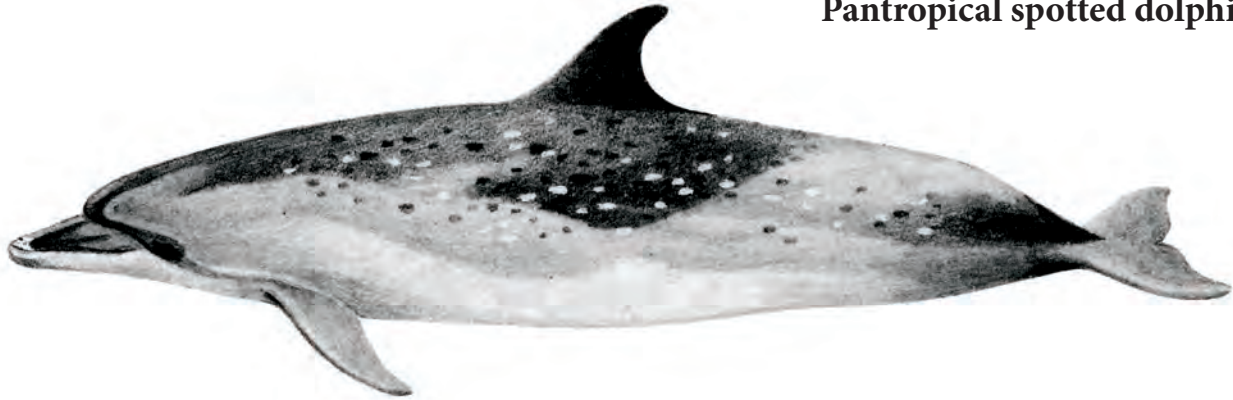
—*Stenella frontalis*— **Atlantic spotted dolphin**



Teeth: $\frac{32-42}{30-40}$

Note: teeth worn down in specimen.

Pantropical spotted dolphin



Teeth: $\frac{35-48}{34-37}$

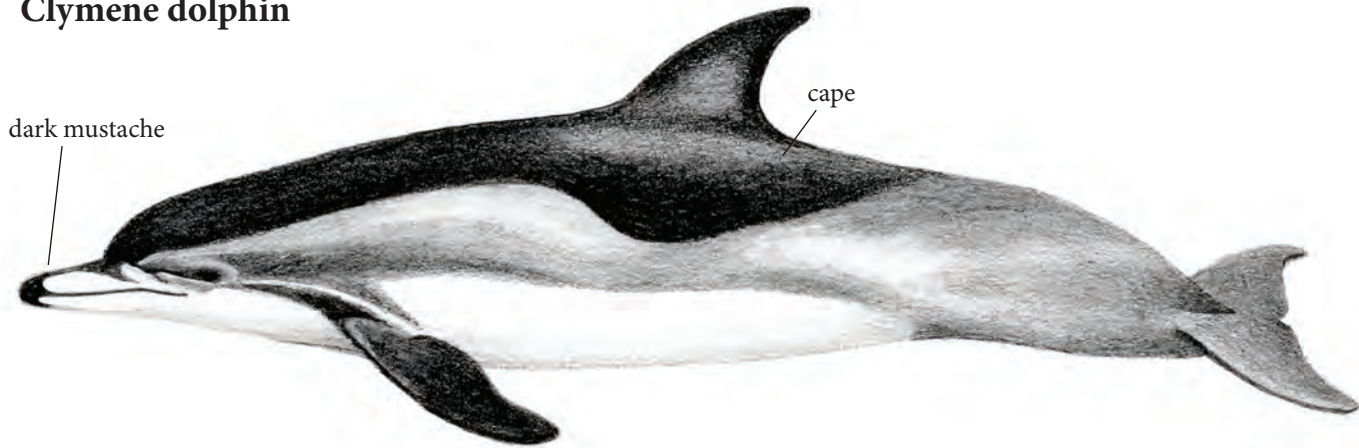
28B.

Long, narrow white-tipped beak and lips: dark band from beak to flipper (may have dark ring around eye); bicolored with dark back and light gray sides and belly; distinct dark gray cape extending past dorsal fin (narrow at face and sweeps to lowest point on side in front of dorsal fin); dorsal fin slender, variably falcate and located mid-back; no shoulder blaze; tail stock single color (pales with age) with pronounced keel in adult males; spotting develops with age: adults generally with dorsal spotting and gray bellies (spotting sometimes absent).

Size: 0.8-1 m (neonate); 1.4 m (weaning); 1.6-2.6 m, 90-120 kg (adult).

—*Stenella attenuata*—**Pantropical spotted dolphin**

Clymene dolphin

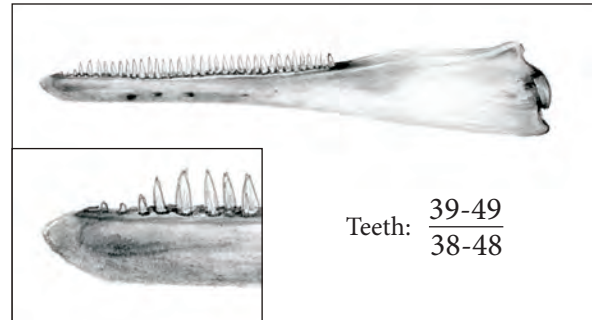


29A.

Body fairly robust with moderate keel; **tri-colored** (dark gray back, gray sides and white belly); **thick, short and broad black-tipped beak and black “lips”**; black line from tip to apex of melon; **dark “mustache” present on top of beak**; falcate dorsal fin (less triangular than long-snouted spinner dolphin); distinct **dark gray or black cape dips above eye and below dorsal fin**.

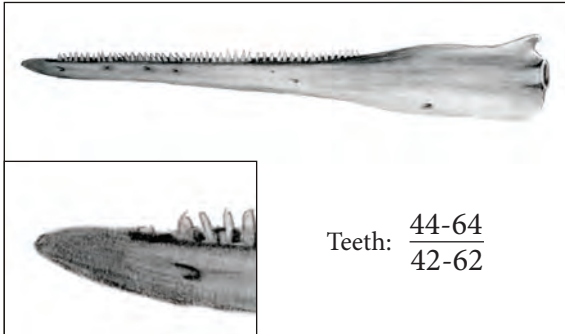
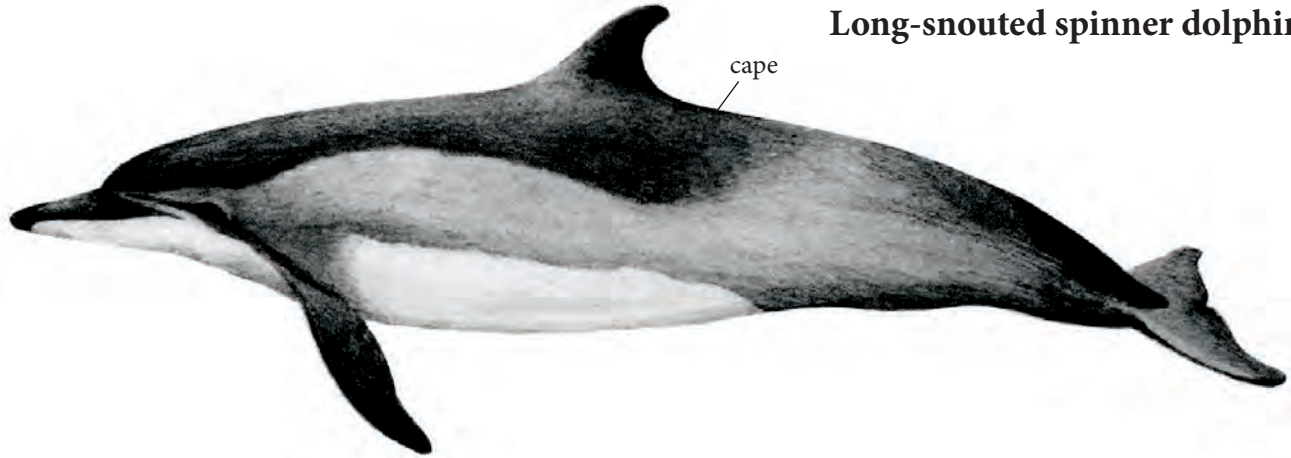
Size: 0.8 m, 10 kg (neonate); 1.8-2 m, 75 kg (adult).

—*Stenella clymene*—**Clymene dolphin**



Teeth: $\frac{39-49}{38-48}$

Long-snouted spinner dolphin



Teeth: $\frac{44-64}{42-62}$

29B.

Slender body with exceedingly long, slender beak; black-tipped lips and beak tip; dorsal fin variably falcate to triangular; dark stripe from eye to flipper; flippers pointed; adult males have prominent ventral keel; **tricolored pattern** (may be obscured) with **parallel borders of color**: slender dark gray cape does not dip below dorsal fin, light tan-gray sides and white belly.

Size: 0.7-0.8 m (neonate); 1.8-2.2 m, 75-95 kg (adult).

—*Stenella longirostris*—**Long-snouted spinner dolphin**

Guiana dolphin

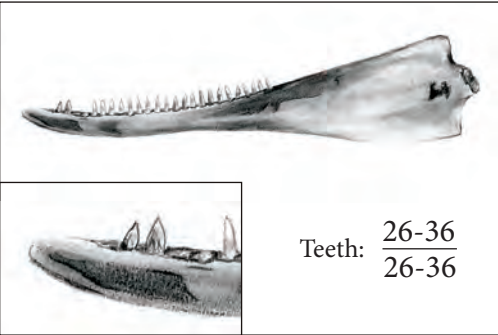


29C.

Small, robust, compact body; bluish or brownish gray upper side with pale gray, white or pinkish underside; **long beak, slightly rounded melon and triangular dorsal fin** at mid back; broad flippers; cape (slopes down to a point under the dorsal fin); broad flukes with distinct notch. (Found only in coastal areas from Honduras south to Brazil, mostly related to mouths of rivers.)

Size: 1.3-2.1 m (neonate); 35-45 kg (adult).

—*Sotalia guianensis* — **Guiana dolphin**



Teeth:	$\frac{26-36}{26-36}$
--------	-----------------------



West Indian manatee—*Trichechus manatus*

Size: 3.5-4.1 m, 1000-1620 kg (max adult).

California sea lion—*Zalophus californianus*

Size: 0.7 m, 6-9 kg neonate;
1.5-2 m, 50-110 kg (adult female);
2-2.4 m, 250-390 kg (adult male).

Introduced from aquaria, escaped into wild.



Hooded seal—*Crystophora cristata*

Size: 0.9-1.1 m, 15-25 kg (neonate);
2.0-2.3 m (adult female);
2.3-2.7 m, 200-400 kg (adult male).

Extralimital.



FINDING A STRANDED MARINE MAMMAL

In most cases, a stranded whale or dolphin will be unable to return to the sea without help. If you find a stranded animal, check whether it is alive or dead; see if the eyes move, and listen for the breathing—a puff of air expelled from the blowhole (in some species there may be a gap of as much as 10-15 minutes between breaths). Whether the animal is dead or alive, inform the local **Fisheries/Wildlife/or Natural Resources Officer**, and/or Marine Mammal Stranding Network; and, *do not touch* the carcass/animal. For more information, see *Do's and Don't of Stranding*, pp. 61-63.

Taking Photographs and Field Notes to Confirm Identification

Taking good photographs of the animal(s) on the beach is essential to positive identification. Images of the following are the most important: 1) lateral shots of the entire body and head; 2) close up of ventral region (i.e., genital area); and, 3) close up of mouth for baleen whales and teeth for small cetaceans. Always include a measurable object in the photograph for scale comparisons (e.g., ruler, hand, foot). Note unusual markings, whether natural or man-made. (See Diagnostic Natural or Man-Made Markings on Stranded Animals: p. 66.) And importantly, keep a journal with all your field notes!

Case of Mistaken Identity

Many marine mammal species in the Caribbean are poorly known. Some species such as common and bottlenose dolphins, as well as Bryde's whales, may have been represented by previously unknown or unrecognized species. Even age class can be a factor: spotted dolphins calves, for example, do not have spots and can be mistaken for *Tursiops* calves (bottlenose dolphin).

Other species, such as *Kogia* spp., beaked whales and spotted dolphins, can easily be confused or may be difficult to distinguish. For example, the pygmy killer whale, false killer whale, melon-headed whale and short-finned pilot whale are often misidentified. All of these species lack the false killer whale's distinctive bulge on the leading edge of the flippers. The pygmy killer and melon-headed whales are much smaller—only about half the size of the false killer whale—and often have white lips.

Every stranding should be documented as best as one is able and reported to the authorities. Therefore, it is essential to take good photographs of specimens. If possible, take tissue samples (i.e., small piece of skin or other fresh tissue) that can be saved, either frozen or in a concentrated saline solution or alcohol, for genetic identification. (Refer to ECCN Data Record, p. 64.)





WHALE & DOLPHIN STRANDING ALERT

DO'S AND DON'TS OF STRANDINGS

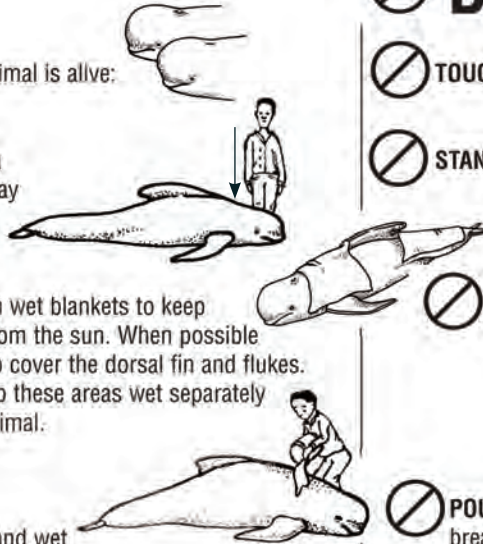
DO

CHECK to see if the animal is alive:
is it breathing?

STAND in the safe area
and turn your head away
from the blowhole.

COVER the animal with wet blankets to keep
it cool and protect it from the sun. When possible
use a separate towel to cover the dorsal fin and flukes.
This allows you to keep these areas wet separately
from the rest of the animal.

KEEP the animal cool and wet
by gently pouring cool water
onto it (from just above the body)



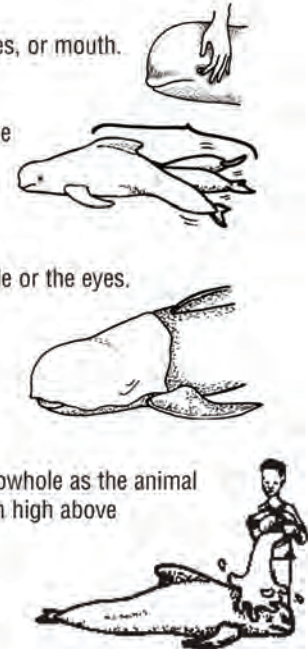
DO NOT

TOUCH the blowhole, eyes, or mouth.

STAND in the danger zone

COVER the blowhole or the eyes.

POUR water into the blowhole as the animal
breathes or pour it from high above
the animal's body.



DO

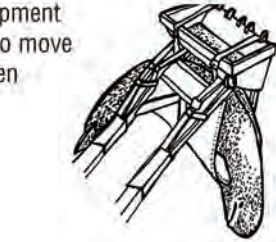
DIG trenches around the flippers to allow them to rest.



TOUCH animals only when necessary, by using the palm of your hand.



SPEAK in a calm, quiet voice near the animals.



USE heavy equipment and stretchers to move live animals when necessary.

DO NOT

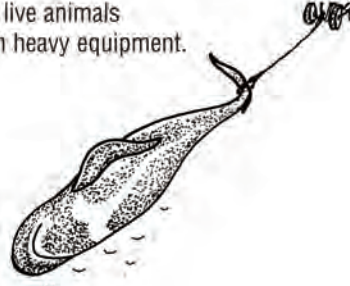
SIT on, hug, lean on, or otherwise touch the animals unnecessarily.



YELL, or scream near the animals.



DRAG or pull live animals over land with heavy equipment.



What should you do when you see a stranding?

1 Get the answers to the following questions:

- How many animals are there?
- Are they alive or dead?
- How big are they (i.e. how many arm lengths)?
- Where are they (location, in or out of the water)?
- When did you first see them?



2 If possible, leave someone at the scene to take care of the animals, or provide some protection for them. Then go for help.



3 If animals are in water: Deeper than your waist:

- leave them alone and get help.

Shallower than your waist:

- ### 4
- if they are upright, leave them alone and get help.
 - if they are rolled onto their sides, but are still alive, then roll them onto their stomachs and hold them up. Stay in front of the dorsal fin! Keep your head away from the blowhole when the animal exhales.

5 If the animal(s) are on the beach:

- dig holes for their flippers.
- protect them from the sun by creating shade with a tarp, sail, or palm fronds.
- cover them with wet towels, blankets, or cloth to keep them cool (keep blowhole clear).
- pour water gently over the animals (not in the blowhole) to keep them cool and wet.
- keep sand out of blowhole and eyes.



Contact help:

Call your Fishery Officer, local conservation group, or Eastern Caribbean Cetacean Network (ECCN) representative.



Example of a Data Record

ECCN # _____

Cetacean Level A Data Record



Field # _____

Tag color/# _____

Species: _____

Common Name: _____

Sex : M F _____

Baleen Present? Y N Ventral Grooves? Y N

Straight Length: (#1) _____ (cm)

Weight: _____ (kg) estimate/actual

Human Interaction: Y N CBD

If Yes, circle: Ship strike / Harassment/Fishery

Other (describe): _____

Mass Stranding? Y N # of animals _____

Reported by: _____

Responder Names: _____

Stranding Location- Country: _____

Island/Town/Beach: _____

Lat/Long: _____

Images? Y N Disposition _____

Images: Digital Print Slide Video

Date/Time first observed: _____

Recovery/death: _____

Date of Necropsy: _____

Carcass Disposition: _____

Body Condition: emaciated / thin/ robust/ CBD

Condition Code: (1) alive/ (2) fresh dead/

(3) moderate decomp/(4) advanced decomp/ (5) skeleton



MORPHOMETRICS CIRCLE cm/ inches

Straight Length- from tip of upper jaw to:
(except #12*)

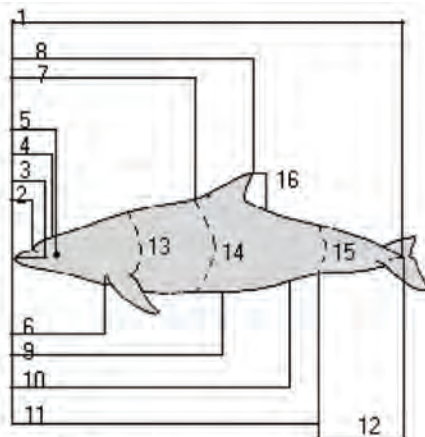
1 Total: (<i>tip of upper jaw to fluke notch</i>)	
2 apex of melon	
3 gape of mouth	
4 center of eye	
5 center of blowhole	
6 ant. Insert. pect.	
7 ant. Insert. dors. fin	
8 dorsal fin tip	
9 umbilicus	
10 center of genital slit	
11 anus	
12 fluke notch to anus*	

Girths

13 axilla	
14 ant. Insert d. fin	
15 oec fin max width	

Appendages

16 dorsal fin height	
17 pec fin. anter. length	
18 pec. fin max width	
19 fluke width	



Level A samples Collected: Skin Teeth/baleen Photos Other _____
Sample disposition: _____

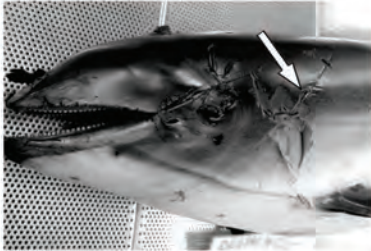
Comments:

Teeth #: LL: _____ UL: _____ LR: _____ UR: _____

Blubber Thickness : (cm) at axilla (13)

13 Dorsal	
13 ant. Insert d. fin	
13 oec fin max width	

Diagnostic Natural or Man-Made Markings on Stranded Animals



Line marks from fishing gear



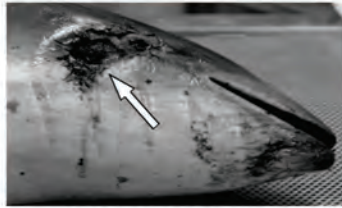
Line marks from fishing gear



Cuts made from sharp implement (human)



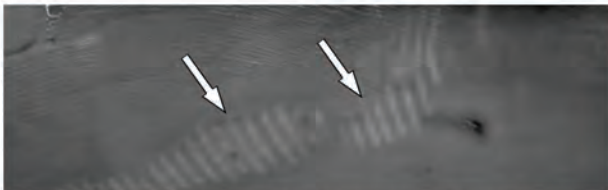
Round and half moon lesions from shark predation



Scavenger damage from predation



Decomposition and shark predation



Rake/teeth marks on a dolphin caused by other dolphins or whales



Propeller wounds on humpback whale

GLOSSARY OF TERMS

Adult: Sexually mature animal that is full grown (or is almost).

Anchor patch: Variable gray-white anchor- or W-shaped patch on the chests of some smaller toothed whales.

Anterior: Refers to areas on or toward the front part of the body.

Blackfish: The colloquial term “blackfish” is often used to describe the following species in the Lesser Antilles: short-finned pilot whale, *Globicephala macrorhynchus*; killer whale, *Orcinus orca*; pygmy killer whale, *Feresa attenuata*; melon-headed whale, *Peponocephala electra*; false killer whale, *Pseudorca crassidens*; and, Risso’s dolphin, *Grampus griseus*.

Baleen: Comb-like plates growing from the upper jaws of mysticete whales with fibrous fringes along the inner surfaces of the plates used to trap and strain prey.

Beak: Forward projected jaw of toothed whales (also known as “snout”).

Blaze: Pale streak of color set against a dark background, usually starting below dorsal fin and often extending up into cape.

Blowhole: Nostril(s) or respiratory opening(s) on top of head—odontocetes or toothed whales have one (single) blowhole; mysticetes or baleen whales have two (paired) blowholes.

Bycatch: The portion of a catch that consists of non-target organisms; animals taken incidentally during fishing operations.

Callosities: Wart-like growths on head of North Atlantic right whale.

Cape: Darker region on back of toothed whale that begins anterior to the dorsal fin and often dips onto the sides to varying degrees in varying formations; sometimes confused with saddle.

Cetacean: A species in the mammalian taxonomic order Cetacea, which includes whales, porpoises and dolphins; there are no “true” porpoises in the WCR.

Chevron: V-shaped, light colored marking on the back or side of a cetacean.

Delphinid: A species in the toothed whale family Delphinidae, ocean dolphin.

Dolphin: Relatively small cetacean in any of several different families, with conical-shaped teeth and (usually) a falcate dorsal fin.

Dorsal: Pertaining to the upper surface of the back or other body parts.



Dorsal ridge: Hump or ridge that replaces a dorsal fin in some cetaceans.

Extralimital: Outside the normal range of a species or population.

Falcate: Refers to a sickle-shaped dorsal fin (or curved backwards), a dorsal fin with a concave rear margin.

Flippers: Front fins or pectoral fins of cetacean, pinniped or sirenian.

Flukes: The two horizontally-flattened, fin-like structures that make up a cetacean tail (contains no bone).

Forehead: See melon.

Gape: Location of the mouth.

Keel: Distinctive bulge, deepening or thickening of the body form on either side of tailstock (near the flukes); it can be on upper or lower side.

Laterally compressed: Flattened in the vertical plane (from side to side).

Marine mammal: Any mammal that makes the sea its home for part or all of its life.

Mass stranding: Event in which two or more (non mother/calf) cetaceans strand. Rare for baleen species to mass strand.

Mandible: Lower jaw bone.

Median notch: Cleavage between the paired flukes of a cetacean.

Melon: The often bulbous or bulging forehead of toothed whales, which plays an important role in echolocation (i.e., sonar function).

Mysticete: Baleen whale, whale species belonging to the suborder Mysticeti.

Neonate: Newborn.

Oceanic: Generally refers to open ocean beyond the edge of the continental shelf, usually where the water is deeper than 200 m; “blue water”.

Odontocete: Toothed whale, member of the suborder Odontoceti.

Pinniped: From the Latin for “wing-footed” or “fin-footed”, a term that includes three living families of the order Carnivora.



Porpoise: Common name applied to species of toothed whale, which are relatively small (less than 2 m), have spade-shaped teeth rather than conical teeth (found in dolphin species) and lack a distinct beak. There are no “true” porpoises found in the WCR. In some areas, people use ‘porpoise’ and ‘dolphin’ interchangeably. Strictly speaking, porpoises are members of the family Phocoenidae.

Posterior: Situated at or near the tail.

Rostrum: Upper jaw of the skull of a cetacean; may be used to refer to beak or snout.

Rorqual: A species in the baleen whale family with throat grooves (i.e., ventral pleats).

Saddle patch: Light saddle-shaped marking behind the dorsal fin of some cetaceans, sometimes confused with cape.

Sexual dimorphism: When males and females of the same species differ in some obvious physical difference such as size (i.e., killer whales and sperm whales) or tooth pattern as in beaked whales.

Sirenian: Member of the mammalian order sirenia, consisting of the manatee.

Snout: The part of the animal’s head from the front margin of the eyes to the tip of the nose.

Species: Group of similar animals, reproductively isolated from all other such groups and able to breed and produce viable offspring.

Splashguard: Elevated area in front of the blowholes of many large whales that prevents water from pouring in during respiration.

Stranding: Act of a marine mammal coming onto land, either live or dead: *mass stranding* involves a group of 3 or more animals.

Tailstock: Region from just behind the dorsal fin to the flukes; also called “caudal peduncle”.

Taxonomy: Classification of organisms according to how they are related to one another.

Throat grooves: Longitudinal grooves or furrows that extend backward from the chin of a rorqual whale, the purpose of which is to allow distention of the throat during feeding; also called “ventral grooves” or “ventral pleats”.

Tubercle: Circular bump or knob along the edges of the flippers and dorsal fins of some cetaceans; also the knobs on a humpback whale’s head.

Ventral: On or belonging to the lower side of an animal.

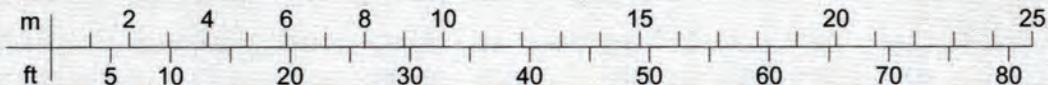
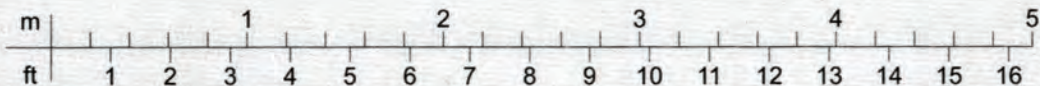
Whale: Generally, name applied to any large cetacean including all of the baleen species and some of the smaller toothed species.

Ziphiid: Beaked whale, member of the toothed whale family.

Zoonoses: An infectious disease transmitted between humans and animals.

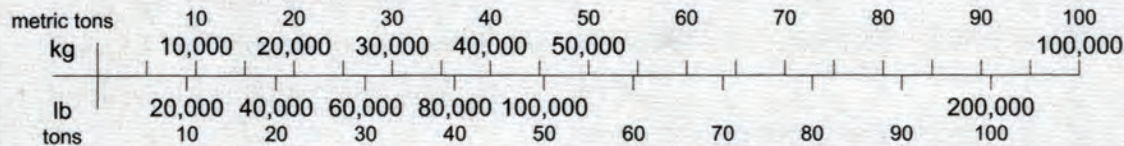
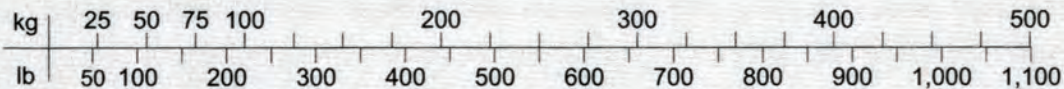


Conversion Charts for Length and Weight



length (ft) = length (m) x 3.28

length (m) = length (ft) x 0.3048



weight (lbs) = weight (kg) x 2.2

weight (kg) = weight (lbs) x 0.454

weight (tons) = weight (metric tons) x 1.1

weight (metric tons) = weight (tons) x 0.907

REFERENCES

- Marine Mammals Ashore: A field guide for strandings.* Geraci, J. R. and V. J. Loundsbury. Second Edition. E. John Smitz & Sons, Sparks, Maryland, 2005. ISBN: 0-9774609-0-8.
- Marine Mammals of the World: A comprehensive guide to their identification.* Jefferson, T., M.A. Webber and R. L. Pitman. Academic Press, Aug 29, 2011. ISBN: 0-01238385-3-3.
- Marine Mammal Necropsy: An introductory guide for stranding responders and field biologists.* Pugliares, K. R., A. Bogomolni, K. M. Touhey, S. M. Herzig, C.T. Harry and M. Moore. CCSN/WHOI. WHOI-2007-06.
- Dolphins, Whales and Manatees of Florida: A Guide to Sharing their World.* Reynolds, J. E. III and R. S. Wells. University Press of Florida, Gainesville, 2003. ISBN 0-8130-2687-3.
- National Audubon Society Guide to Marine Mammals of the World.* Reeves, R. R., B. S. Steward, P. J. Clapham and J. A. Powell. New York. Alfred A. Knopf Publish, 2002. ISBN: 0-3754114-1-0.
- Marine Mammals of the World. Systematics and Distribution.* Rice, D. W. Lawrence, Kans: Society for Marine Mammalogy, Special Publication, No.4, 1998. ISBN 1-891276-03-4.
- Marine Mammals of the Gulf of Mexico.* Würsig, B., T. A. Jefferson and D. J. Schmidly. Texas A&M University Press, 2000. {Note: refer to Skull Key pp. 51-80.} ISBN: 0-890969-09-4.
- The Encyclopedia of Marine Mammals*, 2nd Edition. Edited by: W. F. Perrin, B. Würsig and J. Thewissen. Academic Press, 2008. ISBN: 978-0-12-373553-9.



CREDITS

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THE AUTHORS

Nathalie Ward, PhD, is the founder and Director of the Eastern Caribbean Cetacean Network (ECCN) since its inception in 1989. Ward has a MS in Cultural Anthropology and PhD in Environmental Studies/Conservation Biology. She has studied humpback whales in the U.S. Gulf of Maine and the Caribbean since 1978, where she conducted research on the aboriginal subsistence Bequia Humpback Whale Fishery from 1984-1990. Ward has served as a marine policy consultant for the United Nations Environment Programme's (UNEP) Specially Protected Areas and Wildlife's (SPAW) Programme since 1989, wherein her efforts have focused on the development and implementation of its Marine Mammal Action Plan for the Wider Caribbean Region. Currently, she is External Affairs Coordinator for NOAA's Stellwagen Bank National Marine Sanctuary (SBNMS), wherein her marine policy focus is the establishment and management of Marine Mammal Protected Areas for transboundary species in the Caribbean. She has authored scientific publications, field guides, environmental curriculum and many children's books.

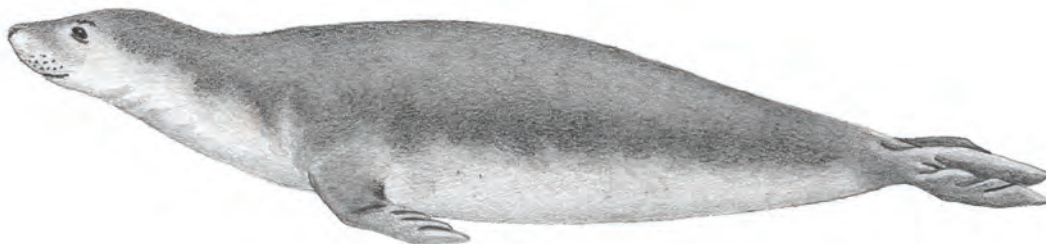
Andrea Bogomolni received her Master's degree from Boston University Marine Program and is currently a PhD candidate at the University of Connecticut in the Department of Pathobiology and Veterinary Science, where her current research focuses on morbillivirus and the effects of environmental and anthropogenic stressors on pinnipeds. Bogomolni completed her undergraduate work at UC Davis in wildlife, fisheries and conservation biology (B.S.) and studio art (B.A) in 1999.

Charles Potter came to the Smithsonian's Museum of Natural History in the early 1970s. Together with James Mead, Potter helped establish a national marine mammal stranding network in the United States. Today that network is administered by the National Marine Fisheries Service (NMFS). Potter's field work has taken him from the North Pacific to the tropics and the Antarctic. He has been actively working to reduce the incidental take of marine mammals in commercial fisheries. Most recently, he has been working with nations of the Eastern Caribbean to establish a multinational response to marine mammal stranding events in collaboration with ECCN and UNEP/SPAW's Action Plan for Conservation of Marine Mammals of the Wider Caribbean.



This stranding guide is dedicated to the Caribbean Monk Seal in recognition of its recent extinction, with the hope that this avoidable fate will never happen to any of the Caribbean marine mammal species.

The Caribbean Monk Seal—*Monachus tropicalis*



The Caribbean Monk Seal is extinct in the Wider Caribbean Region. This species was an easy target for hunters, who killed it mainly for oil, throughout much of the Caribbean Sea and the Gulf of Mexico. One of four monk seal species worldwide, the last confirmed sighting of the Caribbean Monk Seal was in 1952.

In the event of a stranding, please contact:

