

3. ORDER SIRENIA - Manatees and Dugongs

SIRENIA

There are 4 living species of sirenians, 3 manatees and the dugong. A fifth species, Steller's sea cow, of the North Pacific and Bering Sea, was exterminated by overhunting in the 1700's. Sirenians, like cetaceans, are totally aquatic. They are the only herbivorous marine mammals. As a consequence, they tend to be less marine than members of other marine mammal groups. In fact, manatees spend much or all of their lives in fresh or brackish water. All 4 living species are restricted to a tropical and subtropical habitat; Steller's sea cow was unique: it inhabited cold temperate to subarctic waters.

Sirenians have the following morphological characteristics in common: robust body: tough, thick skin with little hair: two nostrils on top or at the front of a thick muzzle; no ear pinnae; no hind limbs; mammary nipples located near the axillae; forelimbs modified into flippers; horizontally flattened tail; and dense, swollen bones.

3.1 Key to the Sirenians of the World

- 1a. Tail split into flukes, with a median notch; tail stock laterally compressed: nostrils on top of snout; incisors (tusks) present; distribution limited to the Indo-Pacific region (Fig. 400) **Dugong (*Dugong dugong*) p. 212**
- 1b. Tail rounded and paddle-like; tail stock not laterally compressed; nostrils at front of snout; incisors not present in adults; distribution limited to Atlantic Ocean and surrounding waters **(Manatee) → 2**



Fig. 400 *Dugong dugong*

- 2a. No nails on flippers; skin of older individuals unwrinkled; light patches on belly and chest; maximum length 3 m; distribution limited to Amazon River and its tributaries (Fig. 401) **Amazonian manatee (*Trichechus inunguis*) p. 208**
- 2b. Nails present on flippers: skin wrinkled; generally, no light ventral patches: occurrence near the Amazon River limited to vicinity of mouth (Figs 402 and 403) **(West Indian or West African manatee) → 3**

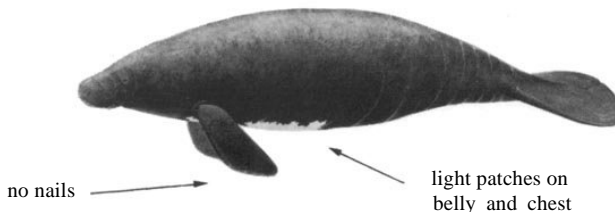


Fig. 401 *Trichechus inunguis*

- 3a. Distribution limited to coastal and inland waters of West Africa (Fig. 402)
 **West African manatee (*Trichechus senegalensis*) p. 210**
- 3b. Distribution limited to waters of the southeastern United States, Gulf of Mexico, Caribbean Sea, and northeastern coast of South America (Fig. 403)
 **West Indian manatee (*Trichechus manatus*) p. 206**



Fig. 402 *Trichechus senegalensis*

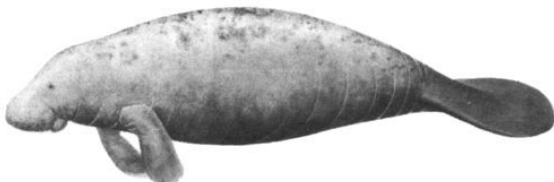


Fig. 403 *Trichechus manatus*

3.2 Guide to Families of Sirenians

TRICHECHIDAE

Manatees (3 species in 1 genus) p. 206

Manatees are found in tropical and subtropical areas and are very sensitive to cold. They are characterized by a horizontally flattened, rounded tail (as opposed to the whale-like flukes of dugongs). With only 6 cervical vertebrae, manatees are among the few groups of mammals that diverge from the normal mammalian number of 7. They are also unique in that their teeth are replaced throughout life with new ones from the rear of the mouth.

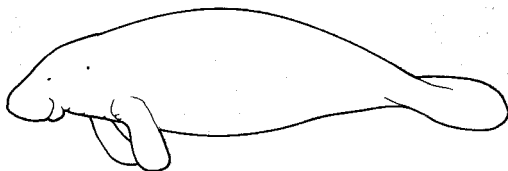


Fig. 404 Trichechidae

DUGONGIDAE

Dugong (1 living species in 1 genus) p. 212

There is only 1 living species in the family Dugongidae. The other recent member, Steller's sea cow (*Hydrodamalis gigas*), has been extinct since 1768. The dugong is tropical and subtropical, but Steller's sea cow was an inhabitant of cold temperate to subarctic waters. In members of this family, the flattened tail is expanded into flukes, similar to those of cetaceans. Other characteristics include a rostrum that is deflected downwards, the presence of erupted tusks in males (dugong only; Steller's sea cow had no teeth), a more streamlined body than those of manatees, and the absence of nails on the flippers.



Fig. 405 Dugongidae

3.3 FAO Species Identification Sheets

Trichechus manatus Linnaeus, 1758

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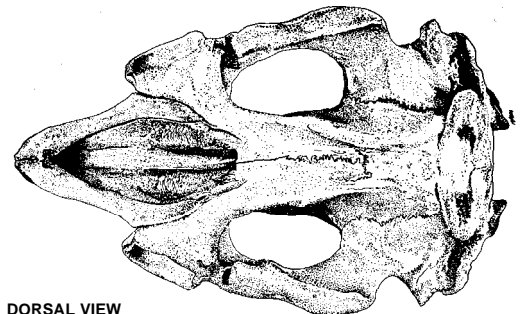
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FAO Names: **En** - West Indian manatee; **Fr** - Lamantin des Caraïbes; **Sp** - Vaca marina del Caribe.Fig. 406 *Trichechus manatus*

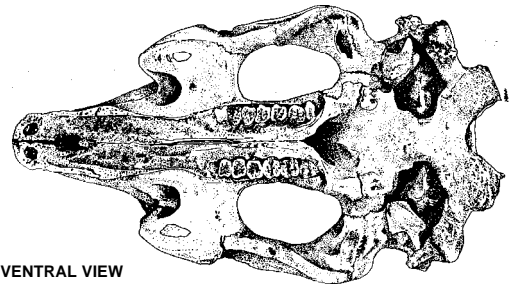
Distinctive Characteristics: West Indian manatees are rotund and have long flexible forelimbs and rounded, paddle-like tails. The head is small, with no discernible neck, and the body exhibits numerous folds and fine wrinkles. The squarish, thickened snout has fleshy mobile lips (with stout bristles on the upper lip) and 2 semi-circular nostrils at the front. The skin has fine hairs sparsely distributed over its surface. Each flipper has 3 or 4 fingernails at the tip. The tail stock is not laterally compressed into a peduncle.

The colour of the skin is generally grey to brown, often with a green tinge caused by algal growth. The short hairs are colourless. Calves appear to be a darker shade of grey, almost black.

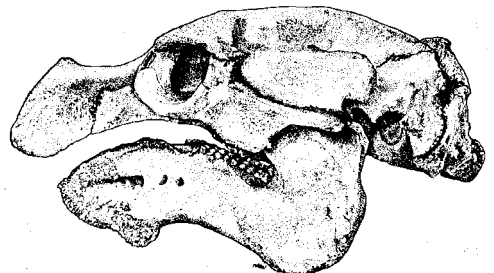
There are 5 to 7 pairs of bicuspid post-canines in each jaw. When forward teeth are worn or lost, they are replaced from behind. At birth, each jaw also has 2 vestigial incisors, which are lost as the animal ages.



DORSAL VIEW



VENTRAL VIEW



LATERAL VIEW WITH MANDIBLE

Fig. 407 Skull

Can be confused with: The West Indian manatee is the only sirenian throughout its range, with the possible exception of the area around the mouth of the Amazon River. In this region, Amazonian manatees (p. 208) can be distinguished by their smaller size, more slender body, smooth skin, lack of nails on the flippers, and their tendency to have light belly and chest patches.

Size: Most adults are up to 3.5 m (3.9 m maximum) long and weigh up to 1 590 kg. Newborns measure about 120 cm and weigh about 30 kg.

Geographical Distribution: West Indian manatees are found in coastal marine, brackish, and freshwater areas of the tropical and subtropical southeastern United States, Gulf of Mexico, Caribbean Sea, and Atlantic coast of northeastern South America. There are 2 subspecies: the Florida manatee (*T. m. latirostris*) from Louisiana to Virginia in the northern Gulf of Mexico and southeast United States, and the Antillean manatee (*T. m. manatus*) from northern Mexico to central Brazil and the islands of the Caribbean. Recently, a few manatees transplanted into the Panama Canal may have passed through the locks and made it to the Pacific side.

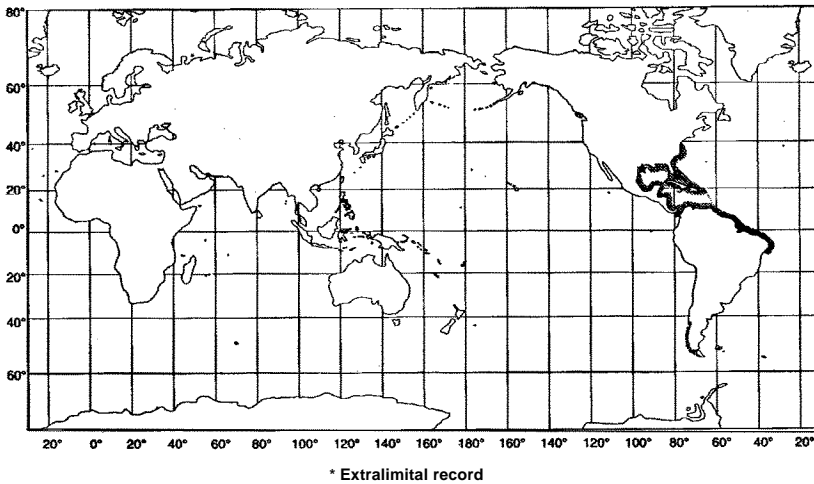


Fig. 408

Biology and Behaviour: Manatees are slow-moving and lethargic; they are seen mostly alone or in groups of up to 6. Larger groups are occasionally seen. For instance, during cold weather, large aggregations assemble near sources of warm water (such as power plant outfalls) in Florida.

West Indian manatees breed throughout the year, with a peak, at least in Florida, in the spring and summer. Generally, a single calf is born after a gestation period of at least 12 months.

These animals are vegetarians, feeding on aquatic plants, such as water hyacinths and marine seagrasses. At times in some areas, they also eat algae, parts of mangrove trees, floating and shoreline vegetation, invertebrates such as tunicates, and fish they remove from fishing nets.

Exploitation: West Indian manatees are endangered. Heavy hunting pressure in the past has reduced the population considerably. Currently, human-induced problems, especially loss of habitat from unchecked development and death or injury from collisions with fast-moving boats, eminently threaten this species with extinction.

IUCN Status: Vulnerable.