Seals and manatees are only distantly related mammals (see page 3) that have successfully adapted to a marine existence. Seals belong to one of three families of pinnipeds or “flip-footed” carnivores. Manatees, like their cousin the dugong, are marine herbivores called sirenians or sea cows. This section, therefore, is a convenient, rather than taxonomic, grouping of the few non-cetacean Atlantic marine mammal species.

Pinnipeds

Pinnipeds have adapted to an amphibious marine existence. They forage at sea but come ashore or onto ice at times to rest, give birth, and suckle their young. Many of their anatomical features reflect compromises needed to succeed both on land and in the water. Their large eyes and well-developed whiskers allow feeding in dimly lit water but also function above water. They have webbed flippers and hydrodynamic bodies and appendages for swimming efficiently, but their flippers allow mobility on land as well. They have fur that is molted (shed) annually and a blubber layer for added insulation.

Pinnipeds are carnivores that have retained canine teeth but whose molars are modified for consuming prey whole. Many pinnipeds are capable of long, deep, repetitive dives made possible by physiological traits such as high blood volume and hemoglobin content and a reducible heart rate.

Seals of U.S. Atlantic waters are phocids—members of the pinniped family Phocidae—and are referred to as earless seals because they have no visible external ear flaps (pinnae). Their bodies are spindle-shaped with short necks. On shore or ice, seals use their short, clawed front flippers for traction and extend their hind flippers behind them as they move in a caterpillar-like fashion. Despite their awkward motion on land, they are fast, agile swimmers that propel themselves with an egg beater-like motion of their hind flippers. Phocids breed on land, in the water, or on ice and give birth the following year. Their pups grow rapidly and are weaned abruptly after brief lactation during which their mothers often fast.

Manatees

Manatees are sirenians and are more closely related to elephants than to other marine mammals. They are completely aquatic and herbivorous, feeding on submerged vegetation along tropical coasts, rivers, and estuaries.

Manatees have many unique traits related to their vegetarian lifestyle: prehensile lips and dexterous forelimbs, bony plates inside the front of the mouth, a complex gastrointestinal tract, and molars that are replaced throughout life. Although completely aquatic, they are slow, shallow swimmers that are propelled by a broad, flattened, paddle-like tail (unlike cetacean flukes). They are insulated by blubber but are cold-intolerant and lack numerous marine adaptations found in cetaceans and pinnipeds. Unlike most marine mammals, manatees have a poorly developed adult brain that weighs less than 400 g (less than 1 lb).

Many of the manatees' physical and behavioral traits enhance their exposure to a variety of man-made hazards. They are caught in flood-control gates while feeding in rivers, congregate in the warm outfall of power plants, and are particularly vulnerable to collision with motorboats. Interestingly, unlike other mammals, manatees have elongated lungs that run along an extended length of their backs with the muscular divider (diaphragm) between the lungs and abdominal cavity nearly horizontal. As an unfortunate consequence, much of the back is buoyed as the manatee surfaces to breathe, raising the entire back to within propeller depth.
**Phoca vitulina**
**Family: Phocidae**

**SIZE:** Adults to 1.7–1.9 m (5.6–6.3 ft), 120 kg; males slightly larger than females. At birth approx 0.7 m (30 in), 10 kg.

**BODY:** Rounded head with short, concave, dog-like snout. Eyes equidistant between ears and nose. Nostrils form "V" when viewed head-on. Sexes similar.

**COLOR:** Variable: silver to reddish tan to nearly black; often blue-gray back with light and dark speckling, lighter belly. Pups usually born with adult-like coat (lanugo is molted in uterus).

**BEHAVIOR:** Gregarious; few to 100s haul out together. Often lie with head and rear flippers elevated in "banana-like" fashion. Associate with gray seals where ranges overlap.

**HABITAT:** Temperate, mostly coastal. Use sandy or rocky sites as haulouts and pupping sites. Current U.S. Atlantic pupping occurs only in ME, often on traditionally used protected sites in upper reaches of bays.

**DIET:** Variety of schooling fish, groundfish, squid, octopus.


**STATUS AND HUMAN INTERACTIONS:**
Most common seal in U.S. Atlantic; population increasing—estimated at 29,000–35,000. Perceived conflicts with commercial fisheries led to a bounty in New England until late 1960s. Incidentally caught in gillnets and other fixed-gear fisheries.

Their smaller size and dog-like profile help distinguish harbor seals from gray seals.

**DISTRIBUTION:** N. Hemisphere.
In w. N. Atlantic, range from e. Canada to s. New England. Spring-summer concentration in ME and e. Canada waters; disperse fall-winter and found as far s. as Long Island.

**CAN BE CONFUSED WITH:**
Gray Seal

Post-canines (teeth posterior to canines) in lower jaw are multi-cusped, overlapping, and angled backward.
**Halichoerus grypus**
*Family: Phocidae*

**SIZE:** Adult males to 2.3 m (7.5 ft), 300 kg. Adult females to 2.0 m (6.6 ft), 180 kg. At birth approx 1 m (3 ft), 20 kg.

**BODY:** Distinctive horse-like head with broad arching snout. Eyes set closer to ears than nose. Nostrils form "W." Sexually dimorphic: adult males much larger than females, with thicker neck, broader head, and darker pelage.

**COLOR:** Adults darker on back than belly; colors range from black, tan, silver, white. Generally males are dark with irregular light patches and females are light with dark spots. Pups: born with lanugo (white or yellowish) and molt to spotted coat at 2–4 wks.

**BEHAVIOR:** Gregarious; form large rookeries during pupping, molting, breeding seasons. Polygynous breeders, but males do not defend territories or harems. Associate with harbor seals where ranges overlap.

**HABITAT:** Temperate to subarctic. Use sandy or rocky sites exposed to rough seas and rip tides as haulouts and pupping rookeries. Mostly pelagic for first few yrs of life.

**DISTRIBUTION:** N. Atlantic only. W. N. Atlantic population centered in e. Canada but range to s. New England. Seasonal movements but no well-defined migration.

**DIET:** Variety of schooling fish, squid, octopus. Newly weaned pups eat shrimp and crabs. Adults fast during breeding season.


**STATUS AND HUMAN INTERACTIONS:** Population increasing with estimated 143,000 in e. Canada. A growing number (approx 3,000 in 1993) are pupping and molting on ME and MA sites. Perceived conflicts with commercial fisheries, including concerns about codworm infestation, led to Canadian bounty and culling of ±2,000 per yr from 1967–83. Incidentally caught in some fixed-gear fisheries.

Gray seal pups share their parents' "horsehead" profile and are born with yellow or white lanugo.

*Other names: grey seal, horsehead, hopper, hodge*
Hooded Seal

**Crystopha cristata**

Family: Phocidae

**SIZE:**

- Adult males: 2.3–2.7 m (7.5–9 ft), 375 kg.
- Adult females: 2.0–2.2 m (6.5–7 ft), 300 kg. At birth approx 1 m (3.3 ft), 15 kg.

**BODY:** Large body with relatively broad, flattened head. Adult males larger than females and have inflatable sac ("hood") on top of nose and forehead.

**COLOR:**

- Adults: blue-gray with irregular black blotches, black face, and light belly.
- Pups: blue-gray back and face and contrasting light belly (called "blue-backs").

**BEHAVIOR:** Males can inflate and shake their hood and extrude a red balloon-like membrane from left nostril, often in aggressive or defensive displays. Usually solitary but gather as triads (bull, cow, and pup) during breeding season. Highly migratory; common for adults and juveniles to wander beyond normal range.

**HABITAT:** Prefer deep offshore waters and thick drifting ice floes.

**DIET:** Variety of fish, squid, shrimp, octopus. Most adults fast during pupping and molting seasons.

**DISTRIBUTION:** N. Atlantic only; primarily n. of Gulf of St. Lawrence. May stray s. into U.S. waters (to FL) from Dec–Mar. Migrate n. from winter pupping-breeding areas to melt off Greenland dispersing n. and e. to feed in summer.


**STATUS AND HUMAN INTERACTIONS:** Population apparently increasing; approx 400,000 in e. Canada. No estimate for number using U.S. waters, but frequency of strandings has increased. Commercially harvested in e. Canada until 1980s, often secondary to harp seal harvests.

In addition to displaying their inflatable "hood," male hooded seals may extrude a red "balloon" from their left nostril.

Hooded seals have blunt, star-shaped post-canines.

A young hooded seal, or "blue-back," has a broader and flatter head than a harbor or harp seal.

Other names: crested seal, bladdernose seal.
HARP SEAL

SIZE: Adults to 1.7–1.9 m (5.6–6.3 ft), 180 kg; males slightly larger than females. At birth approx 0.9 m (2.5–3 ft), 10 kg.

BODY: Robust body with relatively small, sleek head. Well-developed claws on front flippers.

COLOR: Adults: silver-gray body with black face and wishbone-shaped “harp” on back (often muted or covered by large blotches on females). Pups: born with yellowish lanugo that becomes “white-coat” after 3 days; molt into black-spotted silvery coat at 4 wks (as “beaters”). Year-old “bedlamers” molt into an irregularly blotched coat that develops into adult harp pattern with each annual molt.

BEHAVIOR: Pagophilic (ice-associated) and highly migratory. Cregarious; 10,000s congregate on pupping and molting grounds, 100’s migrate, rest, and feed together in summer.

HABITAT: Closely associated with shore-fast sea ice. Have pups, breed, and spend winter on pack ice; follow receding sea ice n. in spring to feed.


STATUS AND HUMAN INTERACTIONS: Estimated 3–5 million in N. Atlantic and increasing. No estimate available for increasing number of juveniles seen in U.S. waters. Commercially hunted in e. Canada since mid-1800s; 53,000–95,000 per yr were taken from 1988–92 in government-set harvest. Incidentally caught in gillnets.

Post-canines in lower jaw are tri-cusped, evenly spaced, and shark-like.

Right: Most harp seals seen in U.S. waters are juveniles that have large irregular blotches on their dark-over-light coats.

DISTRIBUTION: N. Hemisphere. In w. N. Atlantic, primarily n. of Gulf of St. Lawrence but juveniles range s. into U.S. waters (to NJ) in Jan–May when population is at s. limit of its migration.

Other names: Greenland seal, saddle-back seal
FLORIDA MANATEE

Trichechus manatus latirostris
Family: Trichechidae

SIZE: Adults 2.5–4.5 m (8.2–14.8 ft), to 1,600 kg. At birth approx 1 m (3.3 ft), 30 kg.

BODY: Rotund body with relatively small head and no neck crease. Prominent bristly muzzle with prehensile lips. Tail large and spatulate. Long dexterous forelimbs (pectoral flippers) have nails on squared outer edges and a single nipple at their base. Eyes are small and deeply set.

COLOR: Uniformly gray or gray-brown. Blistches and scarring from boat propellers are common.

TEETH: Molars are continuously shed from front and replaced from rear; 6–12 lower row, 6–12 upper row.

BEHAVIOR: Docile but often curious, approachable, and playful. Group together at sources of warm water during cold weather. Make extensive (up to 1,700 km round-trip) seasonal inshore-offshore or n-s. movements in response to temperature change. Generally slow swimmers but capable of short bursts of speed. Avg dives 4 min, max dives 24 min.

DISTRIBUTION: Tropical w. Atlantic. In U.S. waters, primarily peninsular FL and s.e. GA, but range from TX on Gulf Coast n. as far as RI.

HABITAT: Warm coastal and inland waters. Found in marine, estuarine, and riverine waters, but need access to freshwater. Often congregate in warm springs and near power-plant outfalls during cold weather. Low tolerance to water temps less than 20°C (68°F).

DIET: Herbivorous; submerged vegetation, seagrasses, floating or emergent plants. Captive manatees eat up to 75 kg of vegetation daily.


STATUS AND HUMAN INTERACTIONS: Endangered but stable; only 2,229 counted in FL in 1997. Boat collisions, crushing in flood-control structures, cold-stress, and toxic algal blooms are known to be significant sources of mortality. Vulnerable to coastal development and industrial catastrophes.

Florida Manatee

When manatees surface to breathe, they are particularly vulnerable to motorboat strikes, as evidenced by propeller scars on most animals.

Manatees use their dextorous forelimbs and prehensile lips to feed on water plants.

Other names: sea cow, manatee, West Indian manatee