



Common Name: WEST INDIAN MANATEE

Scientific Name: *Trichechus manatus* Linnaeus

Other Commonly Used Names: Florida manatee, manatee, sea cow

Previously Used Names: none

Family: Trichechidae

Rarity Ranks: G2/S1S2

State Status: Endangered

Federal Status: Endangered

Description: Manatees are large, robust aquatic mammals measuring as much as 3.9 meters (13 feet) long and weighing 1596 kg (3,520 pounds or nearly 1.5 tons). Adults average 3.5 meters (11.5 feet) in length and 998 kg (2,200 pounds) in weight. Newborn calves are approximately 1 meter (3.3 feet) long and weigh approximately 30 kg (66 pounds). The thick skin is sparsely haired, ranges in color from slate gray to light brown, and often may be covered by algae and/or barnacles. The head is rounded and indistinct from the body with no neck area apparent. Stiff vibrissae (tactile hairs) are present around the small mouth, and two circular-valved nostrils are situated on the top of the muzzle. The eyes are small with a small lid and nictitating membrane, a clear inner eyelid that protects the eye. External ear flaps are absent. Manatee pectoral flippers are flexible and aid in moving over the substrate, maneuvering in the water column, scratching, manipulating food, and embracing other manatees. The large tail is rounded and horizontally flattened for locomotion and steering. The tail is used to propel the manatee forward with a strong up-and-down pumping motion, which creates circular swirls on the surface of the water known as “foot prints.” Manatees found in U.S. waters are recognized as a separate subspecies known as the Florida manatee (*Trichechus manatus latirostris*).

Similar Species: There are two other recognized manatee species which are generally similar in appearance and habits to the West Indian manatee. The West African manatee (*Trichechus senegalensis*) inhabits coastal and freshwater rivers of West Africa from Senegal River to the

Congo River. The Amazonian manatee (*T. inunguis*) is a smaller-sized manatee that inhabits fresh water rivers throughout the Amazon basin of South America. Dugongs (*Dugong dugon*) are members of the Sirenian family that are similar in appearance to the manatees, except they are strictly marine and have fluked, dolphin-like tails. Dugongs are found primarily in the eastern Indian Ocean from Australia to Indonesia.

Range and Habitat: West Indian manatees are found in tropical and subtropical coastal and river waters along the southeast U.S. coast, the Caribbean coast of Central and South America, and locally throughout the West Indies. The Florida manatee subspecies is a year-round resident in Florida. During the warm months, an unknown portion of the Florida manatee population migrates northward into Georgia and the Carolinas, and westward along the Gulf coast into Alabama, Mississippi, and Louisiana. In Georgia, manatees can be found in any tidal waters from March through October. Habitats in Georgia include nearshore ocean waters, tidal creeks, estuaries, and the lower reaches of the St. Mary's, Satilla, Altamaha, Ogeechee, and Savannah Rivers. Manatees have been sighted as far north as Massachusetts. During winter, manatees are attracted to warm water refuges in Florida. Natural refuges include warm springs in the central part of the state and subtropical waters in southernmost Florida. Manatees are also attracted to warm water discharges at power generating plants and factories throughout Florida.

Diet: Manatees are herbivorous. Sea grasses, marine algae, water hyacinth, and hydrilla are favorite foods in Florida. In Georgia, manatees eat large amounts of marsh grass (*Spartina alterniflora*) and other emergent wetland vegetation.

Life History: Manatees are semi-social and can be found alone or in small groups. They are not territorial. Ranges of individuals often overlap, with male ranges ("circuits") being larger and encompassing several female ranges. Manatees see fairly well and are sensitive to audible and tactile cues. They communicate with a variety of high-pitched squeaks and chirps. Manatees often return to the same wintering and summering habitats year after year. Females reach sexual maturity by 5 years of age and males by age 3 - 4 years. Lifespan can exceed 50 years. Breeding usually takes place in mating herds, which form when several males are attracted to a female in estrus. Mating herds may remain together for a few days to over a month, during which as many as 20 males may compete intensely for access to the focal female. Manatees mate and calve year-round. Female manatees usually give birth to a single calf, but twins are born rarely. Calves remain with their mothers for 1 - 2 years after birth. Manatees have slow metabolic rates which makes them intolerant of water colder than 20°C (68°F). Consequently, manatees in Georgia must migrate back to Florida each fall as the water temperature cools. Manatees that cannot find warm water during the winter can die from cold stress. It is unclear whether manatees require fresh water, but they are frequently attracted to fresh water drinking sources such as water hoses at docks.

Threats: Adult manatees have no natural predators. Historically, manatees were hunted for meat, but poaching rarely occurs now. Decreased availability of warm water is a significant threat to the future of the Florida manatee population. Historically, manatees over-wintered in warm waters in extreme southern Florida and at warm springs located throughout central Florida. As Florida's human population has grown, natural spring habitats have been impacted by human activities such as physical alteration of springs and reduction in spring flows resulting from groundwater withdrawals. Impacts to natural springs have had little impact on the manatee population so far, because many manatees have switched to using artificial warm water refuges

at power generating stations. However, numerous key power generating stations in Florida are scheduled to shut down their cooling discharges in the coming decade, which could cause significant reductions in manatee numbers. Harmful algal blooms, also known as red tides, are another natural threat. In 1996, 149 manatee deaths were attributed to a red tide outbreak in southwestern Florida. The greatest human-caused threat to manatees is collisions with watercraft. Approximately 25% of manatee deaths in Florida occur from watercraft collisions. Georgia's manatees are not immune – approximately 30% of manatee mortalities documented in Georgia since 1989 were due to watercraft collisions. Some manatees are able to survive boat strikes, as evidenced by propeller scars which are found on survivors' backs. Ironically, the unique patterns created by these scars have enabled scientists to study manatee movements and estimate population survival rates. Other human-related threats include mortality from tide gates and dredges, habitat destruction, and entanglement in fishing gear.

Georgia Conservation Status: Manatees are listed as Endangered under the Endangered Species Act of 1973 and the Georgia Endangered Wildlife Act of 1973. There is no statistically sound estimate of the U.S. manatee population size. By extension, the number of manatees that migrate into Georgia each year is unknown. Aerial surveys indicate that the Florida population numbers at least 3,300 manatees. About half inhabit the Atlantic coast and the other half inhabit the Gulf coast. Overall, the Florida manatee population appears to have grown during recent decades. The Atlantic sub-population (which includes manatees that migrate into Georgia) grew at an estimated rate of 3.7% between 1986 and 2000. During the same period, manatee sub-populations in the St. John's River in northeast Florida and the northern Gulf coast also grew, while the southern Gulf coast population decreased. Population modeling studies indicate that continued growth will depend on the cumulative impact of warm water availability and reductions in watercraft mortality. Significant reductions in warm water availability in the future, coupled with increases in watercraft mortality, could result in substantial population reductions.

Conservation and Management Recommendations: The primary objectives of the U.S. Fish and Wildlife Service's Manatee Recovery Plan are to 1) reduce causes of human-related mortality, 2) protect manatee habitats, 3) monitor the manatee population's status, and 4) educate the public about manatee issues. Efforts to reduce manatee mortality in Florida have included establishing watercraft speed zones and no-entry zones, outfitting tide gates with manatee detection devices to prevent manatees from being crushed, and establishing fishing gear recycling stations. Significant efforts have also been made to protect manatee habitats, in particular sea grass beds. It remains unclear whether a viable strategy will be developed to maintain current levels of warm water habitat into the future. In Georgia, the Department of Natural Resources, Nongame Conservation Section works closely with the U.S. Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission to monitor impacts to manatees, including watercraft mortalities and attraction to artificial warm water sources. Other conservation actions in Georgia include educating boaters, documenting manatee sightings and habitats, protecting tidal marshlands, flying aerial surveys and photographing scarred manatees.

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C. George, Dec. 2008: original account

K. Owers, Sept. 2009: updated status and ranks, added pictures



© Clay George
Mother and calf surfacing to breathe



Mating herd

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