Juba on the Manatee

by Penny Randell

Because we live in a landlocked state, we tend to pay little attention to the critters that abound in the sea. Juba here to take an in-depth assessment of the genus Trichechus, or manatee, who is found along tropical and subtropical Atlantic coasts. In addition, they are also found around inland waters, including the watersheds of the Amazon and Niger rivers. The three species within this genus are easy to identify. They are dull grey, blackish, or brown with a stout tapered body that ends in a flat, rounded tail. This allows for forward propulsion, which enables it to travel great distances. Their forelimbs are modified flippers, but they have no hind limbs. The flippers are instrumental for survival and some even have nails to help with movement among thick foliage found in their path.

Lately, and from a distance, I was introduced to the Florida manatee (Trichechus manatus latirostris), who also dwells in nearby states and is one of the subspecies of the West Indian manatee. I have been told that these huge fellows feed off grasses along the shoreline where they can be easily spotted. Other subspecies live in lagoons, estuaries and rivers of eastern Mexico. From there they are sighted along the Central American coast, and across northern South America. Another subspecies occurs around the Greater Antilles islands in the Caribbean.

But that's not all. The Amazonian manatee (T. inunguis) can be found in the Amazon River and is commonly seen in drainage areas such as inundated forests. This species only lives in fresh water and travels inland through Brazil, to Ecuador, Peru, and Columbia. There is even an African subspecies (T. senegalensis), also found in coastal areas and slow-moving rivers from Senegal to Angola. As with the other subspecies, they are found far inland, grazing on grass along the way. When considering size, the Florida manatee can weigh up to an incredible 3,650 pounds and can grow to a length of 10 to 13 feet! Each of the subspecies have distinguishable differences. For example, the Amazonian subspecies are smaller and are darker grey in color.

Manatees live off aquatic plants and their mouths are particularly adapted for such. They have extremely large lips which are prehensile and studded with vibrissae, or specialized sensory bristles. Such allows them to discriminate when searching for favorite plants and aids in manipulating the aquatic plants. Because these animals are strictly plant eaters, they ingest little protein for an energy source. To compensate they must ingest huge amounts of food continuously. The manatee is a hindgut digester and has intestines as long as 100 feet, which aid in its digestion. Their teeth have also developed to meet their dietary habits and demands. To counter abrasion from ingested sand and silica their molar teeth are constantly re-grown and replaced. Unlike all other animals, this tooth replacement occurs through their entire life.

Other adaptations include the lungs, which remain parallel with the water's surface at all times. The ribs lack marrow, which makes them exceptionally dense and heavy. Too, the manatee is able to control the volume of small air spaces in the lungs and therefore maintains a horizontal orientation no matter how shallow or deep into the water they go. As for being submerged, they can remain so up to 20 minutes at a time. Each breath they take fills their lungs up to 90 percent of capacity. These adaptations allow for foraging on a variety of plants, which includes submerged

sea grasses, floating plants, mangrove leaves found along estuaries, and especially grasses along banks.

As can be imagined, this critter has a very low metabolic rate, which enables their long fasting periods and dependence on low-energy food stuff. Despite their ability to carry large deposits of body fat, the manatee has a tough time with cool waters and retention of body heat. Also, their brain is smaller than other mammals of similar size. The cerebrum, the largest part of the brain, is quite small and lacks marked convolutions. Nonetheless, the proportion of the brain used for higher functions is comparable to that of a primate.

A manatee sleeps either submerged or at the water's surface. Although usually solitary animals, they can form a small transient group for hours, or even days. A gathering of many males often surrounds a receptive female during the mating season, and a food source can temporarily create a gathering of 20 or more individuals. However, during extreme cold spells an aggregation of 300 or more have been seen surrounding the outflow of warm water from power plants. Many Florida manatees migrate south during the winter season. The Amazon manatee often migrates due to changing water levels occurring during the rainy or dry seasons. It is possible for surrounding waters to recede to the point of trapping the critter in isolated pools. But, the manatee can fast up to seven months, slowly metabolizing stored fat.

I have learned that the Florida manatee is particularly popular and has become quite the symbol of conservation. Some wild manatees become so accustomed to humans they actually swim among snorkelers and anchored boats as they seek attention and may even solicit a scratch or a rub along their immense bodies. Much research has been spent of the Florida manatee and stands as a comparison to other subspecies. Their appeal is huge in Florida and many vacationers travel to this state just to see them. Besides their appeal, manatees have been assessed to control aquatic weeds, which is often futile as the weeds overgrow and cannot be eaten fast enough.

Through examination of growth rings found in their ears, the manatee has proved to be long-lived. They have been found to exist for up to 59 years, with one 69-year-old in captivity. They reproduce slowly with the female giving birth every two to three years. On rare occasions they have produced twins. All manatees begin digesting plant material when they are very young, however calves can cling to their mothers up to two years. Teats are located at the base of their flippers, providing nutrients that are easy to get to. Sexual maturity occurs as young as three years and gestation lasting one year or slightly longer. There in Florida it is calculated that the manatee reproduces year-round, with seasonal birthing and mating peaks in spring, and lack thereof in winter.

The life cycle of a manatee has important implication for conservation. Predation of manatees stands as rare, with the greatest source of mortality worldwide coming from humans. Manatees are actually protected by law in all areas of the world, yet their numbers have diminished. As it turns out reproductive rates cannot keep up with losses due to some hunting, drowning in fishing nets, plus habit degradation. As for Florida, accidental collisions with motor boats and crushing in canal gates have replaced hunting as the major cause of death. It has been estimated that 25 to 35 percent of all Florida manatee deaths come from collisions with boats. All three species of manatees have been listed as vulnerable by the International Union for Conservation of Nature (IUCN) since the beginning of the 1980s. Numbers stand as follows: The Amazon manatee populations are

estimated at 8,000 to 30,000 adults, West African species number around 10,000, and Antillean manatees is considered less than 2,500 individuals. Sadly, today the Florida manatees number only approximately 2,300.

The manatee is obviously a very special animal and thankfully there are many measures placed to grow and conserve these numbers. In Florida there are many conservation programs that are paying off. Maybe these critters have little to no effect on our mountain lives, but they are out there and worth saving. Should you plan a sojourn to Florida be sure to see a manatee and remember that what is known as a "sea cow" is quite spectacular and one of the most friendly and worthwhile species found in the ocean's waters.

Well, I hope you have enjoyed these facts and have come to know the manatee better. There is much more information out there about these critters, so you can read on. As for us landlocked individuals, hopefully the new year is progressing as one would hope. I'll be back next month and will surprise you with facts about an amazing species we should all get to know. Bye-bye for now and be sure to take in our mountain splendor whenever you can.