

Marine Matters Ecological Almanac

The Gray whales are back again! – From Mexico to Alaska

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Whoosh! The blow of a gray whale grabs our attention. Five people on the sailboat swivel our heads in time to see a bumpy, barnacle-encrusted back as the whale dives. Momentarily forgotten are the nearby sea ducks, seals and sea lions. The size and mystery of whales dominate again.

Watching gray whales at Second Beach last year was a personal highlight after moving to the Islands. I discovered a great book at the local library entitled *Gray Whales, Wandering Giants* written by Robert Busch. Their feeding behaviour is amazing. Did you know that the whales are “right-mouthed?”

When gray whales dive, they roll onto their side and push their heads into the bottom sediment. Scars, scraped barnacles and worn baleen plates on the right side of their mouths reflect this habit. When a whale pushes into the seabed, its’ two to five throat grooves expand and the huge tongue (up to 1300 kg!) pulls back to create suction. Mud, water and food flow into the mouth. The tongue pushes most of the dirt and water out through the baleen plates, while the food is trapped. Made of keratin like your fingernails, the 160 pairs of baleen plates are solid at the top and toothbrush-bristled at the bottom.

How much food can an 11 m long, 30 tonne whale filter? Between 400 to 1300 kilograms a day! Gray whales eat a variety of marine organisms including shrimp, tube-dwelling worms, clams, snails, and spawning squid. Important foods in spring are crab larvae, krill, and herring roe. Apparently, the whales will scrape small crustaceans off kelp and eelgrass. Many whale stomachs have contained plants, leading to the belief that they eat marine plants to scour their intestines, just as dogs eat grass.

Gray whales can reach marine plants and animals in water less than three metres in depth. Their huge horizontal tail flukes are estimated to be equivalent in power to a 500 horsepower engine. Powerful tail flukes and streamlined bodies help push them into shallow water to feed, or along coastal waters on their 6000 kilometre annual migration from California to Alaska.

Another neat adaptation for the marine environment is the gray whale’s oxygen storing capacity. Gray whales have a 130 kg heart, two to three times more blood per unit of body weight than humans, and an iron-based protein in their muscle tissue that allows storage of 41 percent of their oxygen (compared to 13 percent in humans). Their lungs weigh 300 kilograms, have more air cells, and two layers of capillaries to increase air exchange. With each breath from its double blowhole, a gray whale expels 80-90 percent of its oxygen-depleted air, compared to 15 percent for humans.

On deep dives, up to 120 m in depth, a gray whale can stay underwater for up to 25 minutes. Luckily for whale-watchers, the gray normally dives less than 30 metres and surfaces after three to five minutes. So on the second weekend in April, five of us on a sailboat are treated to sightings of two gray whales repeatedly surfacing, blowing, and flashing their gray and white barnacle-covered heads and backs. As I write this article, I am already planning to head over to Skidegate near high tide to watch for more whales. I may even drop over at low tide to look for grooves in the mud flats where the whales shoved their “right-mouthed” heads. See you there!