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Exploring Our Little Corner of the World with the Galiano Naturalists

by Cheryl Bastedo

One morning I was lucky enough to witness a bald eagle looking for prey. The wings suddenly went straight up and the legs straight down, and it plummeted to the sea. When it hit the water and couldn't get up again, I thought I was going to be unlucky enough to watch it drown. Suddenly it started to do a winged version of a butterfly stroke and managed to "swim" about 300 metres to the shore with a very large fish in its talons. The next evening I read the reprint of Darrell Greenwood's "Ten Years Ago in The Active Page" account of witnessing the same thing. As I told people about this amazing coincidence, I heard several more stories about swimming eagles, some of them swimming half way across Active Pass against the tide. Someone also told me that they have seen an eagle eating its prey on the beach in Active Pass and when a ferry sounded its horn, dragged its meal further up the beach to avoid the waves from the ferry's wake.

Bald eagles (*Haliaeetus leucocephalus*) are a member of the Accipitridae family, which also includes hawks, kites, and old-world vultures. There are two subspecies of bald eagles. Studies have shown the "northern" bald eagles fly into the southern states and Mexico, and the "southern" bald eagles into Canada. Because of these findings, the subspecies of "northern" and "southern" bald eagles has been discontinued in recent literature. Both male and female adult bald eagles have a blackish-brown back and breast; a white head, neck, and tail; and yellow feet and bill. Juveniles are a mixture of brown and white;

with a black bill in young birds. The adult plumage develops when they're sexually mature, at about 4 or 5 years of age. The female is 35 to 37 inches with a wingspan which varies from 79 to 90 inches. The male is 30 to 34 inches long with a wingspan from 72 to 85 inches. They weigh from 10 to 14 lbs. Northern birds are significantly larger than their southern relatives.

Wild bald eagles may live as long as thirty years, but the average lifespan is probably about fifteen to twenty years. A captive eagle at West Stephentown, NY lived to be at least 48. Eagles sit at the top of the food chain making them more vulnerable to toxic chemicals in the environment, since each link in the food chain tends to concentrate chemicals from the lower link. Body temperature is 102 degrees Fahrenheit. They can tolerate cold temperatures as their skin is protected by feathers lined with down, the feet are mostly tendon and the outside of the bill is mostly nonliving material with little blood supply. Once paired, bald eagles remain together until one dies. The survivor will not hesitate to accept a new mate. Shrill, high pitched, and twittering are common descriptions for bald eagle vocalizations. Eagles do not have vocal cords. Sound is produced in the syrinx, a bony chamber located where the trachea divides to go to the lungs. These sounds may be a way of reinforcing the bond between the male and female, and to warn other eagles and predators that an area is defended.

The skeleton weighs about half a pound and is only 5 or 6 percent of its total weight. The feathers weigh twice that much. The bones are hollow. The beak, talons, and feathers are made of keratin. The wings are long and broad, making them effective for soaring. To help reduce turbulence as air

passes over the end of the wing, the tips of the feathers at the end of the wings are tapered so that when the eagle fully extends its wings, the tips are widely separated. Eagles use thermals to help them soar which is accomplished with very little wing-flapping, enabling them to conserve energy. Long-distance migration flights are accomplished by climbing high in a thermal, then gliding downward to catch the next thermal, where the process is repeated. Several eagles soaring in a thermal together is described as a "kettle of eagles". They can fly to an altitude of 10,000 feet. During level flight, a bald eagle can achieve speeds of about 30 to 35 mph. The tail is very important for flight and maneuvering, spread for soaring or gliding, acting as brakes for landing, and stabilization during a controlled dive or swoop toward prey. The strength of the feathers and the follicles holding the feathers is quite impressive.

Bald eagles have 7,000 feathers. They are lightweight yet extremely strong, hollow yet highly flexible. They protect the bird from the cold and heat by trapping layers of air. To maintain its body temperature it simply changes the position of its feathers. They do not have to migrate to warmer areas but to available food supplies. A lone eagle feather is believed to convey great power. North American Natives incorporated the eagle's primaries and tail feathers into their ceremonies and legends.

The hook at the tip of the beak is used for tearing. Behind it the upper mandible, with an edge sharp enough to slice tough skin, overlaps the lower, creating a scissor effect. A bald eagle's beak is a strong weapon, but delicate enough to groom a mate's feathers or feed a newly hatched chick. The female's beak is deeper (distance from top to chin) than the male's. The beak and talons grow continuously; a captive's must be trimmed annually as they are not worn down naturally.

Bald eagles in the Gulf Islands prey mainly on fish but will also take several birds and their eggs, such as herons, glaucous winged gulls, cormorants and coots. They have also been know to take small dogs. They kill their prey by penetrating its flesh with their talons. They can open and close them at will. If an eagle is dragged into the water by a fish too large to lift, it is because the eagle refuses to release it. In some cases this is due to hunger. An eagle might drown during the encounter or if it's unable to swim far enough to reach shore.

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Natural Mysteries

September's mystery was: Do deer chew their cud's? Absolutely. Like cows, deer are ruminants, meaning not that they sit for long hours on a porch contemplating life's twists and turns but that they have a rumen, the first and largest of a ruminant's four stomachs. Like a big vat, the purpose of the rumen is to let a deer bolt down whatever it can, before the gardener comes after it with a hoe, until sometime later, in a quieter and gentler place, the tomato vines and arbutus leaves can be regurgitated, remasticated, and reswallowed. More importantly, there's a whole community of microbes living down there in the rumen and the next stomach, the reticulum. These microbes ferment the cellulose and other plant materials which would otherwise be indigestible. This sludge of microbes and fermentation products gets pushed down through the third and fourth stomachs, the omasum and abomasum, which absorb the nutrients and digest the sadly expendable microbes as well. It's a clever system, one that allows deer to fast up a couple of weeks with no ill effects while the little food factory works away inside.

This month's Natural Mystery: Why do raccoons "wash" their food?

Have an answer? Send your thoughts to galianonaturalists@gulfislands.com. Have a Natural Mystery of your own? Let us know, and we'll try to answer it.

THE GALIANO NATURALISTS are a group of curious explorers who enjoy observing, marveling, and sharing information about the natural world around us. Come join us. (galianonaturalists@gulfislands.com)