**The AMERICAN BEAVER (*Castor canadensis*).**

The close relatives of beavers (Family: Castoridae) have been around for millions of years, blinking in and out of existence across the North American continent. Evidence of these ancient beaver (i.e., Paleocastor) can be found in fossilized corkscrew-shaped burrows, called daemonelices, found across the American west. These “Devil’s Corkscrews” date back to the Oligocene (33.9-22 million years ago).

Our modern American beaver nearly met the same fate as its ancient relative: that is, extinction. When European settlers first arrived, 60 million beaver populated the continent and beaver ponds covered over 234,000 square miles of the United States. In 1670, after only 35 years of trapping, beaver had become rare in New England. By the mid-1800s, the fur trade and intensive hunting had extirpated the American beaver from much of its native range. In 1897, trappers caught the last beaver in North Carolina.

Although still threatened by human-wildlife conflict and habitat loss, beaver populations today are on the rise across their range and in North Carolina after concerted intervention. In 1939, the North Carolina Wildlife Resources Commissions reintroduced 29 beaver to the Sandhills. By 1953, beaver occupied seven North Carolina counties and the population soared to one-thousand individuals. Re-stocking continued in North Carolina until the mid-1950s. Across their range, North American beaver populations have rebounded, reaching upwards of 12 million by 1990. Yet, North American beaver populations are but a fraction of what they were and the species has lost considerable genetic diversity. Once, authorities recognized at least 25 sub-species of beaver; today about four sub-species dominate the landscape.

Today, beaver live throughout North America, excluding far northern Canada and the deserts of Mexico and southwestern U.S. In North Carolina, beaver roam the entire state, but are more abundant in the Piedmont and the Coastal Plain, excepting the outer banks and coastal islands. Most beaver live along creeks and build lodges and dams; about 25% of individuals live in bank burrows rather than lodges. Other beaver live in deep lakes and rivers, and do not build dams.

When beaver do build dams, they tend to make them straight in slow moving waters and curved in faster moving waters. In some regions, dams have been reported to stretch one mile long and can be found every 20 yards along a stream stretch. The dams help create pools or ponds, ranging in area from one to 100 acres.

These ponds protect beaver lodges. Beaver construct lodges from branches and mud. The lodge has at least two fairly dry compartments: a lower compartment for drying off, located close to the underwater entrance, and a higher compartment for daily living. Lodges and dens are occupied by a colony or family group of up to eight beavers, generally including a mating pair, a pair of newborns, and older siblings.

In fact, beavers are monogamous, although they will “remarry” if their mate dies. They mate during November and December, and give birth to one litter of kits in April or May. Young beavers will stay with their parents for two years, sometimes helping care for the next litter of kits, before being driven from the lodge to establish a territory of their own. These adolescent beaver typically leave in spring, corresponding with when we see the greatest number of dead beaver on the roads. To maintain established territories, beavers communicate via tail slapping and low grunts. They also delineate their territory with scent mounds, small mounds of vegetation marked with castoreum, a musk-like substance exuded from musk sacs.

Beaver do not just use branches and vegetation for building lodges and defining territories, they rely on these for food. In the summer, beavers prefer to graze on aquatic vegetation, like duckweed, waterlilies, pickerelweed, cattails, and reeds. In the fall, beaver begin stockpiling food, and in the winter, when supplies get low, beaver shift to eating stems and bark. Beavers even have a winter food hierarchy, preferring to eat the easily digestible and protein-rich trunks of willows and cottonwoods before moving on to oaks, ashes, and sugar maples. Lowest on the list of preferred food are pines and hemlocks. If you see the bark of these being consumed, the beaver are desperate for food and typically leave or die within the year. On the other hand, if you see pines simply being girdled – chewed and left standing – then you know the beaver are creating space for their preferred tree species to thrive. To ensure that beavers eek out every last bit of nutrition from their food, they also engage in caecotrophy, re-ingesting their feces to extract more nutrients.

Beaver modify their environment in many ways, by building dams and lodges, felling and girdling trees, and piling up vegetation to create scent mounds. Beavers also fashion channels between the water and forest, along which they can drag poles and food back to their lodges or bank burrows. All of this industry makes beavers quintessential “ecosystem engineers” and that engineering can have a lot of benefits for the natural world.

The ponds created by beaver form wetlands that mitigate flooding, reduce stream-bank erosion, and keep water levels higher in rivers during the dry season. These wetlands also improve water quality by removing excess nutrients and chemicals (up to 70% of nitrates and 90% of herbicides in some systems) and trapping silt. With improved water quality comes more animals, including frogs, turtles, birds, mink, and raccoons. Moreover, the weight of beaver ponds is so great that they actually press water deep into the ground and recharge groundwater supplies.

Even beaver lodges and channels serve the greater good. Beaver lodges provide homes for aquatic macroinvertebrates (think: dragonfly larva) and safe nesting sites for swans, while beaver channels provides pathways for wood frogs to move from the forest to wetlands and back. In fact, beaver help increase habitat complexity, meaning more biodiversity in general – more aquatic insects, more fish, and more animals that feed on those fish.

In the wild beavers live between 10 and 20 years. Although coyotes can prey upon beavers, the beaver’s major predator is man. According to writer Ben Goldfarb, historically, Native Americans ate fat-rich beaver tail, wore the warm and water-resistant beaver fur, prepared castoreum as medicine, crafted chisels, scraper, and knives from the beavers big, yellow incisors, and use beaver molars as dice. In North Carolina, beaver-trapping season technically runs from November until the end of March, but landowners can dispatch any beaver that damages their property at any time without a permit.

**Did you know?**

* Beavers are the largest rodents in North America.
* They have transparent eye membranes to protect their eyes and see underwater.
* Newborn beavers can swim 24 hours after birth.
* Beavers have bacteria in their cecum (between the large and small intestine) that help them digest the cellulose found in the bark and cambium of trees.

**Identification**: A large (33-77 lbs. and 3 feet long), dark brown, thickly furred rodent with webbed hind feet and a flat scaly tail.

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**Barred Owl**

In March, you might hear Barred Owls hooting and calling, even during the daytime. Researchers have confirmed that Barred Owls have “one of the most diverse vocal repertoires among North American owls”. These calls include the typical “who-cooks-for-you” vocalization, screams (AKA alarm calls), mumbles, twitters, gurgles (typically from males), one phrased hoots (typically from females), and duet behaviors where male and female gurgles and hoots co-occur.

By March, some Barred Owls have already found their mates, having gone through a courtship of bobbing and bowing and calling while perched close. In fact, just prior to mating, male barred owls have been observed stretching out their necks, bowing nearly parallel with the ground, raising their wings, and fanning their tails. It is unclear if this display is for the females benefit or meant as a sign for “non-breeding floaters” or single males to stay away. If you hear a solitary call, this might mean a male has not yet found his mate.

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**The Copperhead**

*T*he [COPPERHEAD](http://www.bio.davidson.edu/projects/herpcons/herps_of_nc/snakes/Agkcon/Agk_con.html) (*Agkistrodon contortrix*) is the most widespread of North Carolina’s six venomous snakes. The copperhead probably occurs in every county in North Carolina, and is distributed throughout the southeastern United States. Known as “highland moccasins,” copperheads inhabit wooded areas ranging from riparian (streamside) habitat to ridgetops. They sometimes reside in more open habitat and are fairly tolerant of human development, often frequenting trash piles and abandoned buildings.

The copperhead is a stout, moderately large viperid (i.e., in the family of venomous, fanged snakes) that can attain a maximum length of almost 4.5 feet. Adults are pinkish-brown with darker, brownish hourglass-shaped crossbands. Neonates, or newborns, have bright greenish-yellow tail tips. They mate in both spring and fall, and give birth to around a dozen live young in September and October. In autumn, copperheads will gather to den communally along with other snake species to better endure the colder months. Normally a quiet, retiring snake, copperheads will strike vigorously if annoyed.

Word of warning: From late September through November, copperheads often lay in sunny paths to warm up. They also blend in very well with fallen pine needles and beech leaves.

Did you know?

* Copperheads in the North Carolina Piedmont are intergradations of both northern copperheads (*Agkistrodon contortrix mokasen*) and southern copperheads (*Agkistrodon contortrix contortrix*).
* Vipers are identified by their triangular heads and vertical pupils; Colubrids, non-venomous snakes, have circular pupils.
* Copperheads in North Carolina eat cicadas, caterpillars, frogs, toads, birds, mice, shrews, voles, lizards, hatchling box turtles, ringneck snakes and worm snakes.

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**Coyotes**

Reports of coyotes (*Canis latrans*) in North Carolina first emerged in the 1930s, often associated with imported specimens intended to help hunters practice for better game, i.e., red fox. Not until 1947, on Cherokee land in Swain County, did a forest ranger make the first recorded wild sighting of a coyote. In the mid-1980s the range of coyotes in North Carolina was primarily confined to some counties on the western boundary of the Piedmont. Yet today, coyotes occur in all 100 counties of the state. Their populations remain highest in the Western counties, but in the last ten to twenty years sizeable populations have grown in the Coastal Plain.

It isn’t difficult to account for recent increase in coyotes in North Carolina. The species is extremely mobile, with individuals dispersing up to 50 miles. Plus, coyotes can adapt to a wide-range of culinary delights. As a carnivore, most of a coyote’s diet is made up of small mammals, but they will also consume snakes, birds and large insects. If live food is scarce, coyotes will eat carrion. If carrion is scare, as it is in autumn and winter, they will eat berries and herbs. Fox hunters, houndsmen, and wildlife officials have unwittingly contributed to the rise of the coyote by releasing adults for training and accidentally introducing very cute coyote pups to gamelands instead of similar looking red fox pups. Moreover, the coyote’s natural predators in North Carolina have either been hunted to extinction (the gray wolf) or nearly so (the red wolf and mountain lion).

Besides being adaptable, coyotes are also prolific. They reach sexual maturity around the age of one year, and by age two they select a mate for life. Coyotes will begin courtship rituals between January and March, and after a gestation of only 63 days a female will give birth to between one and twelve young (average litter: 6 pups). The pups wean from their mother six to eight weeks after being born, but continue to get food from their father and hunting lessons from their mother until the young disperse after one year.

The clever and cunning antics of coyotes often increase their success. They watch the sky for ravens, letting the birds guide them to carrion. They hunt as a pair, with one partner jumping wildly at a rabbit forcing it right into the mouth of its mate. Coyotes also adjust their behavior to gain from humans: begging in parking lots in Death Valley or attacking pets in the suburbs.

Although coyotes terrorize local neighborhoods, sometimes eat small dogs and chickens, and may carry rabies, they do confer one benefit: coyotes eat feral cats, and thus they could improve depleted song bird populations. Unfortunately, this benefit only further demonstrates the trouble we humans have respecting Mother Nature’s balance…and it doesn’t work out so well for those poor cats either.

Did you know?

* Coyotes range from three to four feet long, and weight between 20 and 50 pounds.
* Coyotes can communicate with over ten different sounds.
* 50% to 70% of coyotes die before attaining adulthood
* Coyotes live between 10 and 14 years in the wild

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