



## 22. Muskrats

Why the name “muskrat?”

“Musk” refers to a strong smelling substance released from the animal’s perineal glands. “Rat” describes its rat-like appearance.

### Biology

The muskrat (*Ondatra zibethicus*) is a rodent related not only to rats, but also to mice, voles, and beavers. The nation’s most abundant furbearer, the muskrat lives on or near the still or slow-moving water of ponds, marshes, streams, and rivers and, to a lesser extent, faster streams. The species is found throughout most of North America north of the Rio Grande, including the coastal tidal marshes. Muskrats are common in Pennsylvania, though not nearly as abundant as they used to be.

Adult muskrats are 22 to 25 inches in length, including the tail. They weigh 2 to 3 pounds; have a stout body; short legs; and an 8- to 12-inch tail that is flattened vertically, scaly, and practically hairless. Ears and eyes are small and well developed. In appearance, muskrats resemble small beavers with long, rat-like tails.

The tail functions as a prop when the animal stands on its hind feet, and as a rudder and propulsion-aid when it swims. The muskrat’s large, broad, partially-webbed hind feet power it through water. Its forefeet are small and agile, with well-developed claws for burrowing.

To insulate against cold water, a muskrat’s underfur is dense, silky, and soft, overlain with long, dark brown guard hairs shading to gray-brown on the throat and belly. Overall pelt color can be chestnut brown to almost black, or any color in between.

Muskrats feed on roots and stems of aquatic plants. The cattail is often an important item, as are bullrushes, water lilies, pickerelweed, and others. When they grow



near water, legumes, grasses, grains, garden crops, and fruits also are consumed. Muskrats eat a small amount of animal protein, including crayfish, freshwater mussels, fish, and frogs (often as carrion) and even carcasses of other muskrats. They don’t hibernate; during winter they subsist on roots and shoots dug from marsh bottoms and the twigs, buds, and bark of various trees, including willows, cottonwoods, ash, and box elders.

### Habitat

Muskrats build houses called lodges or huts, or burrow into stream banks, earthen dikes, and dams, often causing considerable damage. Both houses and burrows have underwater entrances and above-water living quarters. Houses are built of cattail stalks or other vegetation, chinked with mud and weeds above the waterline. They may be 8 to 10 feet across and 2 to 3 feet above water, with a single living chamber plus offshoots, or several chambers. Muskrats do not dam streams.

### Population

Muskrats have a high reproductive potential, giving birth to large litters and breeding from spring to fall. In breeding season, muskrats leave musk, or scent, in likely places around their territories to attract potential mates. Males

may impregnate several females, and play no part in raising young. Mature females have two, three, or even four litters each year, depending on the length of the warm season. Muskrats in southern Pennsylvania often have more litters than those further north. After a 30-day gestation period, the female bears five to eight naked, blind, and helpless young. In a month they are weaned and fully furred, and the female drives them off, especially if she is about to bear another litter. A female may overwinter with her final litter of the year, breaking up the family in the spring. Young disperse along streams or colonize new sections of marsh.

Muskrats are sexually mature the year following their birth, though few survive long enough to breed. Young muskrats and dispersing immatures are especially vulnerable to minks, hawks, owls, foxes, snapping turtles, and snakes. Often, there are too many individuals for optimal habitat to support in good health through winter and animals occupying less-optimal habitat are often lost to predators, taken by trappers, or forced to move to new areas.

Some prey populations may limit their own numbers by failing to breed in crowded conditions, or by aggressively defending a territory in overpopulated areas.

Minks seldom have much effect on local muskrat populations. Only if the habitat should change, such as a drought that dries up the marsh, would formerly-secure muskrats be vulnerable

to minks. Muskrats are tenacious fighters. Minks prefer to tackle young or sick muskrats, because a mature adult puts up a brisk defense. Females defending young will drive off attacking minks.

A bad winter, an outbreak of tularemia or Tyzzer's disease, or a flood during the height of breeding season might also cut muskrat numbers. Muskrats are parasitized by mites, fleas, flatworms, roundworms, and tapeworms. While the average lifespan is less than 12 months, some individuals may live five or six years. Population size can vary widely from year to year, and tends to peak about every 10 years.

Through their feeding, muskrats open up areas of densely vegetated marsh; this can change local habitats to benefit waterfowl and other aquatic wildlife. Muskrats also damage agricultural and ornamental crops near water and their tunnels riddle dams, dikes, and canal banks. This is a serious problem for which trapping is the most effective and least expensive solution.

