The Marsh

Story By Stacy Iwanicki
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Learn how muskrats maintain beneficial marshes—and even help endangered species.

A soft munching sound—chhh chhh chh chh chh—wafts through the cattails. One long, waving leaf slowly sinks out of sight. Then another. Something is moving out there. It comes closer and the kindergarten group quietly walking Volo Bog State Natural Area's boardwalk spy tiny eyes atop a soft, brown, furry head.

A muskrat is munching away on cattails, one of its favored food sources. Occasionally, the muskrat's menu also includes crayfish, clams and other invertebrates.

This was a few years ago, when water levels were higher in the marsh moat around the Lake County bog and muskrats were a common sight. Their lodges, brown bumps of dead cattails, sedges, ferns and other vegetation, stood up to 4 feet above the waterline and measured from 4 to 8 feet across. Other, lesser lumps (feeding stations) also were visible. Their scat, little brownish-gray droppings deposited strategically on rises in the marsh, also gave sign of their presence.

Muskrats are rodents, but unusual ones for sure. About the size of a small to mid-sized rabbit, their eyes are placed high atop their head in frog-style, an adaptation to life in and around water. Sporting five-toed hind feet typical of all rodents, muskrat feet are slightly webbed and fringed with hairs along their toes, adaptations to help propel them through the water. Their scaly, hairless tail differs from the top-to-bottom flattened beaver tail by being slightly compressed from side-to-side, making it an effective rudder when swimming

Monitor

Roots and stems of cattails provide a preferred food source for muskrats.

quickly through open water, swinging their legs simultaneously side-to-side.

Like beavers, muskrat cheeks and lips pinch in behind their incisors to allow them to chew under water. Their soft, thick underfur repels water, traps insulating air and provides buoyancy, while the surface guard hairs aid in waterproofing and add a dark brown luster, especially in winter when their pelts are most valued by trappers.

Volo Bog's marsh moat now stands absent of muskrats after five years of less-than-average precipitation. They are occasionally seen in the center of Volo Bog where the pond is "bottomless," and have taken up residence under the floating platform and along portions of the boardwalk, burrowing into the foam float blocks and using vegetation and peat to plug the slats between the boards.

Baby muskrats, about the size of a mouse but pink and hairless, have been seen through the cracks of the boardwalk. In Illinois, muskrats generally produce two or more litters per year, with litters averaging seven young apiece.

Muskrats are born blind and their tail is not yet flattened. Their teeth begin to emerge at about one week. At two weeks, their eyes open and they begin to swim. At four weeks they are completely weaned. Their tail begins to flatten at about two months of age. Young born later in the year grow faster than those born to earlier litters. All reach adult size by winter. When the second litter is born, some of the first are forced out of the parental territory resulting in an increase of road-killed muskrats.

Muskrats prefer still or slow-moving water in which to swim and some soft vegetation to eat. Equally at home at the edge of a lake, shore of a backwater slough, drainage ditch or an open sunny marsh, when the water's deep enough for swimming, muskrats will set up housekeeping in the form of a lodge or burrow.

In marshes, lodges are built of cattails, bulrushes and other soft-stemmed vegetation as well as small, woody material like young willow branches. Sometimes packed with insulating mud, the lodge is warm in winter and cool in summer. There is usually a single "room," sometimes more, about 1 foot in diameter excavated a little above the water line. The entrance is underwater to discourage coyotes, foxes, raccoons and other potential predators.

A bank burrow is usually more complex and may involve multiple "rooms," each about 6 inches in diameter. The entrance is underwater and the burrow

(Photo curtesy of SIU Cooperative Wildlife Research Lab.)

Unlike the wide, flattened tail of its beaver relative, the relatively narrow tail of the muskrat serves as a streamlined rudder.

may rise above the water level to dry soil. There are separate rooms for sleeping, eating and defecating, and vertical tunnels for ventilation. Such structures are often where we humans find them to be inconvenient as humans or livestock might risk breaking through to their tunnels and twisting an ankle—in the lawn along the shore of our waterfront home, next to a boat dock or in a farm field.

Muskrats are a part of the natural cycle of marshes and play a vital role in controlling vegetation and maintaining a hemi-marsh—a wetland mosaic of half water, half vegetation. The open water they create provides habitat for ducks, turtles, herons, cranes and frogs, and the roof of the lodge is used by nesting waterfowl and cranes. Recently in the northwestern Illinois community of Savanna, a muskrat lodge served as a nest for the state's first nesting pair of trumpeter swans in nearly 160 years—a successful nest with two young hatched. On the opposite side of the continuum, if the marsh remains flooded for long periods, or muskrat numbers get too high, vegetation begins to disappear, banks may erode and the desired habitat structure is lost.

Muskrats often build lodges from mud and plant material. But they also burrow into banks and dams, where they sometimes cause human conflicts.

If there's enough shoreline to share, both muskrat and homeowner might be content if creativity is used in landscaping and a portion of the waterfront is planted with native vegetation. An attractive, meandering grassy path created with a lawnmower can be maintained to reach the shore. Unwanted holes along the path should be filled as they are made.

Ever-hungry muskrat populations serve as natural managers of vegetation growth in lakes and wetlands.

In water-control berms and levees, where muskrat burrows can quickly become giant water breaches, removal of the animals is the best option. Regulated trapping during the legal season, which runs from early November through mid-January, is the best option for resolving problems while making use of the luxurious pelt (more than 28,000 muskrat pelts were sold in the 2005-2006 Illinois trapping season). At other times of the year they can be removed with a nuisance animal removal permit issued by DNR or by a licenced wildlife control operator.

Whether in the city or country, along a lakeshore, river or waterway, muskrats are a common sight in Illinois' aquatic habitats. But at Volo Bog, visitors anxiously await the return of higher water levels and the return of muskrats.

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