

## Severe early winter may have forced muskrats to seek better life

by Ted Bailey

It was on one of the few above-freezing days we had in back in mid-November that I came across an unexpected track of an animal.

Etched in the bottom of a furrow in the snow were the drag marks of a tail between closely spaced footprints. It was the distinctive trail of a muskrat on the move miles from any open water. I followed the trail and could see where the muskrat struggled through the deep snow, first through a black spruce thicket, then an open bog, through a small birch-spruce forest and toward a nearby lake.

As I approached the shoreline of the frozen lake I suddenly lost the muskrat's trail—it just disappeared. Backtracking, I discovered that I had missed seeing a small hole under a clump of snow where the muskrat burrowed underneath the snow and ice, presumably into the safety of the water below.

The weather then turned bitterly cold again with daily temperatures well below zero. Several weeks later, in December, after a warm day near 30 degrees, I discovered another trail of a smaller muskrat coming from the same direction. The temperature the previous night had already dropped to minus 10, and the snow was eight to 10 inches deeper than before.

However, this muskrat unknowingly turned away from instead of toward the distant lake. Its trail was more torturous as it zig-zagged from the base of one tree to another, where there was less snow. It then struggled through deep snow in a large open bog and continued wandering aimlessly parallel to the unseen, distant frozen lake shoreline.

I finally abandoned the meandering trail in the bitter cold. An inspection of the lakeshore nearby did not reveal a trail of an approaching muskrat. This second muskrat had presumably perished in the bitter subzero night.

Both muskrats appeared to have come from the same smaller lake. One wandering muskrat hopefully survived the ordeal by reaching safety under the ice of the larger lake; the other probably froze to death in the woods nearby. Although I had witnessed this mid-winter wandering of muskrats during warm spells in

severe winters before, I decided to consult the findings of an expert on this matter.

Paul L. Errington was perhaps the world's greatest authority on muskrats. He started as a professional trapper in South Dakota, but soon turned his love of the outdoors to studying muskrat ecology and population dynamics.

He spent 30 years as a professor at Iowa State University, most of them studying muskrats and mink in Iowa marshes, lakes, rivers and creeks. He died 40 years ago, in 1962, the same year I began my studies in zoology and wildlife science.

He wrote several classic books about muskrats, marshes and predation. I have most of them because I admired his research more than that of any other wildlife biologist at the time. I particularly liked his unpretentious style of writing, and I consulted two of his books—*Muskrats and Marsh Management* and *Muskrat Populations*—regarding the wandering and deaths of muskrats in the winter.

Errington wrote: "They freeze to death. The tips of the tails of muskrats freeze first when long exposed to cold. If that is the worst that happens, the animals gnaw away the frozen and festering tips and go through the rest of their lives with bobbed tails. In the more advanced cases of freezing, eyes and feet freeze, or the victims may be so beaten by cold that they just huddle and die. Where winters have been long, cold, and short of snow, the descent of frost lines to depths of several feet can bring death to the majority of muskrats of tremendous areas."

Instead of freezing in place, some muskrats gnaw and dig their way out through the frozen ground or ice and take their chances on finding a better place to live elsewhere. However, only a few muskrats survive such perilous excursions. Most perish. The bitter cold of this winter's past November and December may thus have doomed unknown numbers of the peninsula's muskrats.

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