

Mysterious Marten

Seeking Clues in the Forests of the North Country

BY JILLIAN KELLY



The trapped marten nervously paced in the trap, aggressively striking at the sides as it vocalized its irritation with a ferocious series of growls and hisses. Meanwhile, I prepared to tranquilize the marten so I could remove it from the trap and take measurements. Though I had spent my growing-up years in the forests of the North Country, hearing and seeing this marten at such close range was exciting for me. It marked both a new phase in my budding career as a wildlife biologist — and the start of a new collection of information about these solitary creatures and their lives in New Hampshire.

In Colonial times, American marten were common in New Hampshire, especially in Coos County. Yet by the early 20th century, the cumulative effects of unregulated trapping, the conversion of forest to farmland and the rapid

deforestation of the landscape from logging led to the extreme decline of the state's marten population. They remained scarce, probably because of such low population numbers, despite New Hampshire's gradual re-forestation. As a result, the marten was one of the first species added to the state's endangered species list after its enactment in 1979.

Since the early 1980s, New Hampshire has seen increasing evidence of marten presence. In fact, based on tracks

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Jillian Kelly, biological technician in Fish and Game's Region 1 office, has spent two years studying marten. She is a graduate student in wildlife management at the University of Massachusetts.

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Live-trapping marten helps biologists determine their distribution in New Hampshire.

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and sightings, the state's northeastern border has become a hotspot for marten activity. Directed searches for marten appear to show an expanding population and range. Nonetheless, there's much we still need to learn about marten population

status, habitat availability and distribution.

Marten conservation and forest-industry impacts on wildlife habitat are of particular interest to people in my own preferred habitat — northern New Hampshire. I set out to learn more about marten, to see what this secretive creature could teach us about where it lives and what it needs to thrive.

Trapping for Data

I started studying marten in 2002, with the objectives of estimating the current distribution of marten in New Hampshire; examining the relationship between marten distribution and possible limiting factors; verifying marten reproduction in occupied areas; and identifying the current amount of available or unoccupied marten habitat.

The first step in this process was to collect and compile all distribution data — historical accounts, recent sightings, incidental captures, road kills, and live trapping records — into a database, to create a known distribution map for marten in New Hampshire. I'm in the process now of using those data to examine potential factors that would limit marten distribution — including the distribution and abundance of fisher, a wildlife competitor; snow depth and conditions; and landscape characteristics such as elevation and fragmentation (when

American marten

Martes americana

The American marten, also known as the pine marten or American sable, belongs to the weasel family and is closely related to fisher and mink. Marten pelts vary in color from a dark brown to blond, yet the most distinctive characteristics are an orange or buff throat patch and pronounced ears.

Marten, similar to other mustelids (weasels), are very inquisitive animals, spending the majority of their time on the forest floor, feeding on small mammals such as red-backed voles and the occasional snowshoe hare. Other common food sources for marten include berries, nuts and carrion. Because of their extremely inquisitive nature, marten are considered by some to be easily trapped and therefore susceptible to over-harvest, especially in areas with easy access to their habitat. Female marten attain sexual maturity around 2-3 years of age, while males attain sexual maturity at around one year. Young are born mid-March to late April, with 1-5 young per litter.

In the Northeast, marten can be found in many different types of habitat, including coniferous forests, cedar swamps and mixed hardwood-conifer stands. Marten seem to prefer areas with extensive woody structure or coarse woody debris near the forest floor. Stands with large amounts of woody debris and dense clusters of small-diameter live conifer stems offer excellent cover for marten and their prey, plus access points beneath the snow for denning, feeding and hiding.



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The author, biological technician Jill Kelly, weighs a marten. This one, like most of those trapped, is an adult male; it weighs about 2 pounds.

habitat parcels are broken up and unconnected to one another, making it difficult for wide-ranging species to survive).

Live trapping was the best survey method to identify current marten presence or absence. So, I designed the trapping survey to use Tomahawk single-door live traps at randomly selected locations over set periods of time. I covered the traps with pine boughs, moss or other natural insulation to minimize stress on the captured marten; then baited the traps with sardines and scented them with a pungent lure of skunk essence and Chanel N° 5 perfume.

Setting out at sunrise to walk the trapline each day, I recorded trap activity, whether the trap was open or closed, if the bait was added or replaced, if the trap was re-scented, if a capture occurred — and if so, what was captured. If a trap contained a marten, I restrained the animal using a device called a Tamarack holding cone and gave it a tranquilizing drug. I took a hair sample from each

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marten and froze it for future genetic analysis, and placed ear tags at the base of each ear to individually identify the marten. Tag return information will provide important information from marten that are incidentally trapped or recovered from the field over the next couple of years.

I recorded each trapped marten’s total body and tail length, girth behind shoulders and around neck, hind leg and hind foot length, body condition based on coat condition, and the presence of parasites like ticks; and I extracted a first premolar tooth to be used to age the animal. After no more than 10 minutes, I returned each marten to the trap with a supply of strawberry jam to aid in its full recovery from immobilization; then released it back into the woods when it was alert and ready.

Habitat Needs

Marten require large areas of relatively intact forest and are sensitive to forest fragmentation, yet can adapt to a wide range of forest types within their territories. Therefore, they are often considered an ideal “umbrella” species. (An umbrella species is one with a large home range that also serves as habitat for a variety of other wildlife.) As a result, marten are often used to help evaluate



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landscape effects of forest harvesting, and can aid in long-term forest planning. For example, over the past 20 years, dramatic changes have occurred in the ownership of New Hampshire’s large blocks of industrial forest. New Hampshire has battled to keep the remaining ownerships large, intact and part of the working forest — to maintain both essential wildlife habitat and jobs crucial to local economies. Knowing exactly where marten are (or are not) found in suitable habitat areas can help us determine the overall health of the forest, and how effective current management practices have been for wildlife in New Hampshire. In the long run, findings about marten and other species could help communities make good planning decisions and reduce further habitat fragmentation.

Though I haven’t yet finished analyzing all the marten data, it definitely appears that marten have established a breeding population and once again have recolonized portions of the northern third of the state. I’ll continue to compile and analyze the information, so it can be used to identify areas likely to be colonized or used by marten throughout New Hampshire. The research will also be used to identify future research goals and objectives for marten management, as well as to help guide habitat management activities on both private and public lands. Over the years to come, as I learn more about the mysterious marten, I’ll share my findings on these pages.

Marten measurements: Kelly logs tail length and other figures.



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You can help!

If you’ve seen a marten, please contact the author at Fish and Game’s Region 1 office in Lancaster, (603) 788-3164. Who knows, maybe you help add to our knowledge of marten distribution in New Hampshire!



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