



# VERMONT FURBEARER MANAGEMENT NEWSLETTER



Volume 6, Issue 1

Fall/Winter 2005

*The MISSION of the Vermont Fish & Wildlife Department is the conservation of fish, wildlife, and plants and their habitats for the people of Vermont. In order to accomplish this mission, the integrity, diversity, and vitality of all natural systems must be protected.*



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## Tracking the Elusive Bobcat — An Update

For many years bobcat trappers and hunters have talked about the importance of rocky outcrops, wetlands, and corridors to bobcat movement and survival. Through a cooperative research effort, the Vermont Fish & Wildlife Department and the Vermont Cooperative Fish & Wildlife Research Unit hopes to collect the scientific evidence to support these claims.



**Trapped Cat.** Photo by Cory Blodgett.

*(Continued on page 5)*

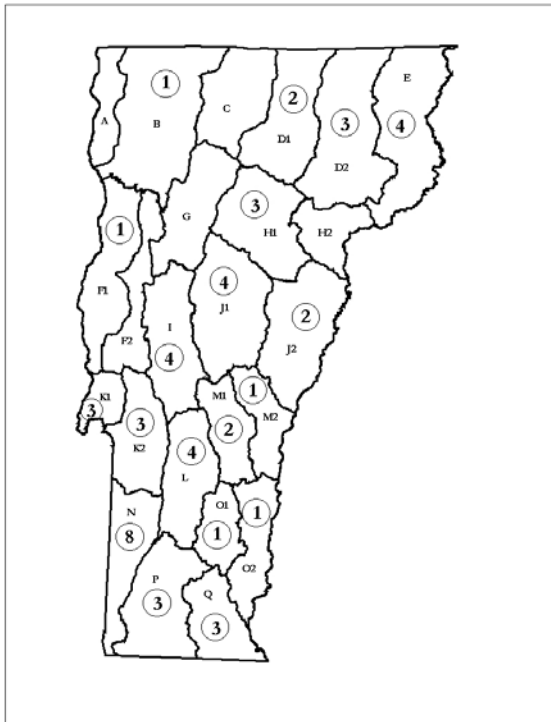
## Season Results 2004-05

Fifty-two bobcat, 567 fisher, and 181 otter were reported and tagged by Vermont’s Wardens during the 2004-05 season. Wildlife biologists and volunteers examined each carcass to determine their sex, age, and physical condition. These data are used to monitor changes in health, status, and population levels. We need to assess trends in furbearer numbers to set and defend trapping and hunting seasons, and to ensure that these animals exist for future generations of Vermonters.

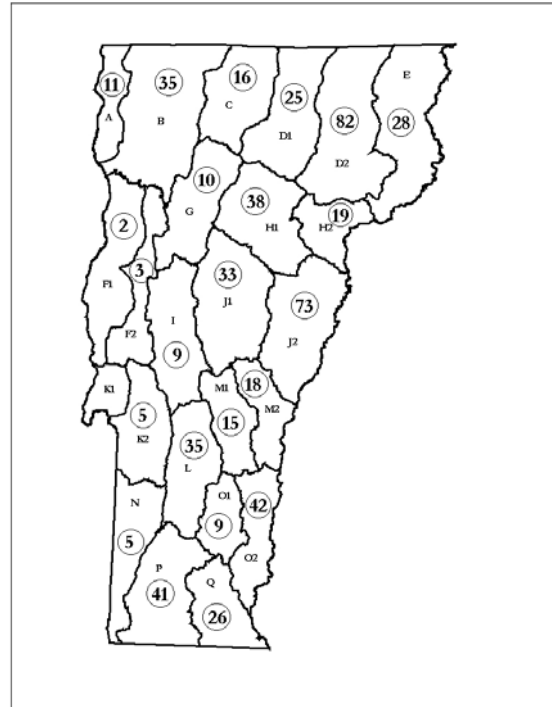
Bobcat and fisher were taken throughout much of the State, with the highest number of bobcats coming from WMU N in southwestern Vermont (Figures 1 and 2). We manage otter by Watershed Management Units, as this species is closely tied to waterways. Otter are well distributed throughout the

state (Figure 3). We monitor the harvest of raccoon, beaver, coyote, muskrat, red fox, mink, fisher, otter, and bobcat through the annual trapper mail survey (Figure 4). This survey also allows us to track trapper effort (# traps x # nights). Historically, trapping effort has been closely related to harvest size. This strong relationship is a reassuring indicator that we are not over harvesting furbearers in Vermont. We will continue to monitor trapping effort to assess trends in furbearer populations. Thanks to all of you who collect and/or contribute this essential information to the furbearer program. As pelt prices increase, monitoring harvest and effort data will become even more critical to understanding population dynamics and management.

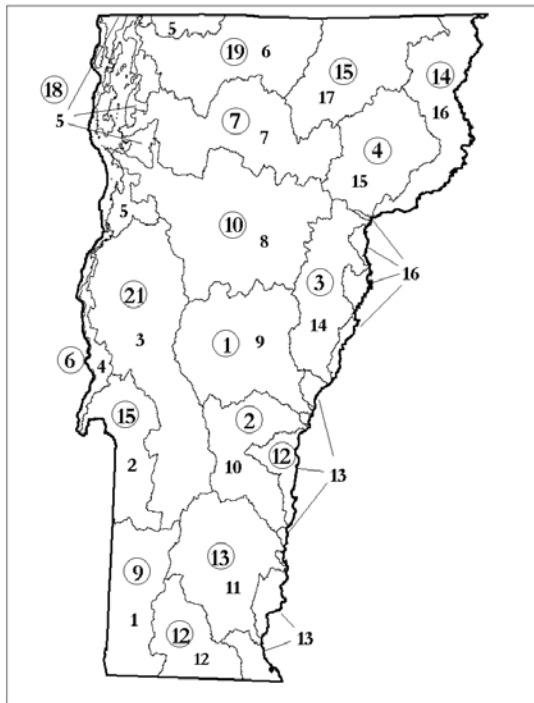
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**Figure 1.** Distribution of 52 bobcat taken during the 2004-05 season.



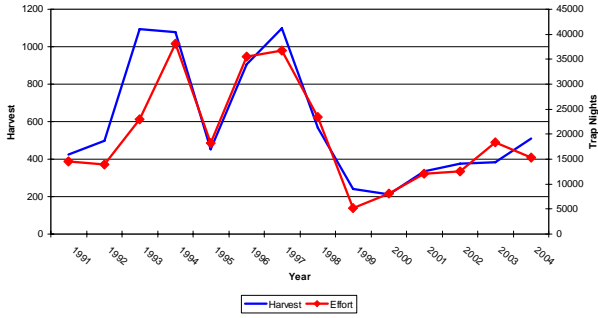
**Figure 2.** Distribution of 567 fisher taken during the 2004-05 season. (WMUs for the remaining 50 fisher are unknown).



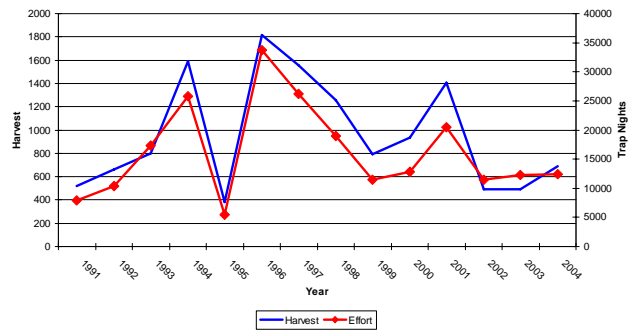
1. Batten Kill, Walloomsuc, Hoosic
2. Poultney, Mettawee
3. Otter Creek, Little Otter Creek, Lewis Creek
4. Lower Lake Champlain
5. Upper Lake Champlain, LaPlatte, Malletts Bay, St. Albans Bay, Rock, Pike
6. Missisquoi
7. Lamoille
8. Winooski
9. White
10. Ottauquechee, Black
11. West, Williams, Saxtons
12. Deerfield
13. Lower Connecticut, Mill Brook
14. Stevens, Wells, Waits, Ompompanoosuc
15. Passumpsic
16. Upper Connecticut, Nulhegan, Willard Stream, Paul Stream
17. Lake Memphremagog, Black, Barton, Clyde

**Figure 3.** Distribution of 181 otter taken during the 2004-05 season. The remaining 22 are unknown.

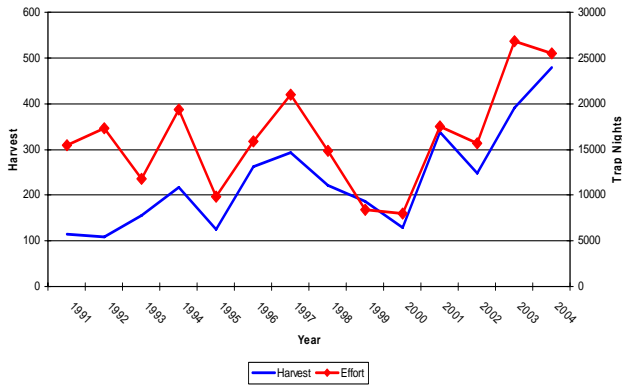
### Raccoon



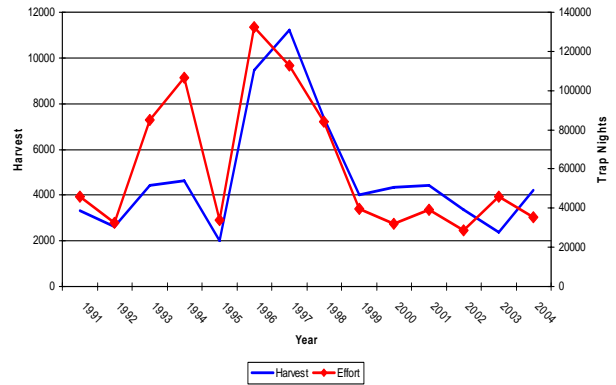
### Beaver



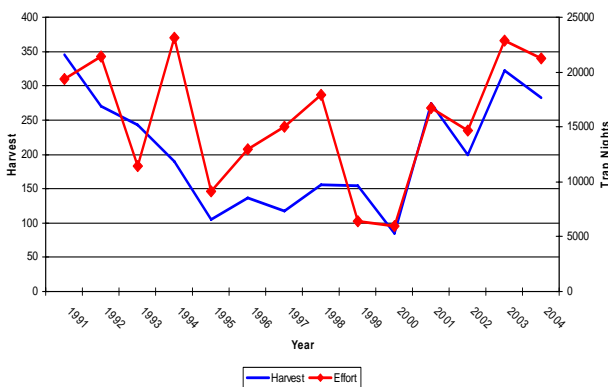
### Coyote



### Muskrat



### Red Fox



### Mink

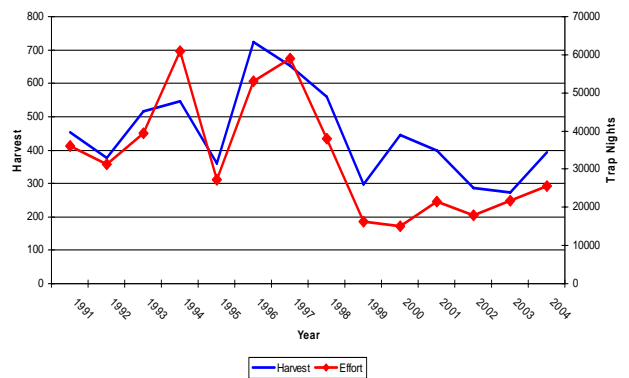
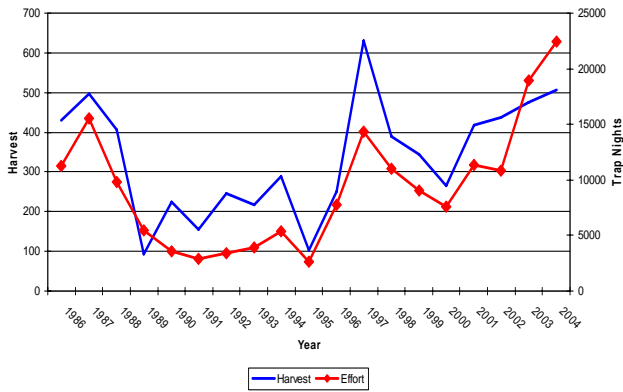
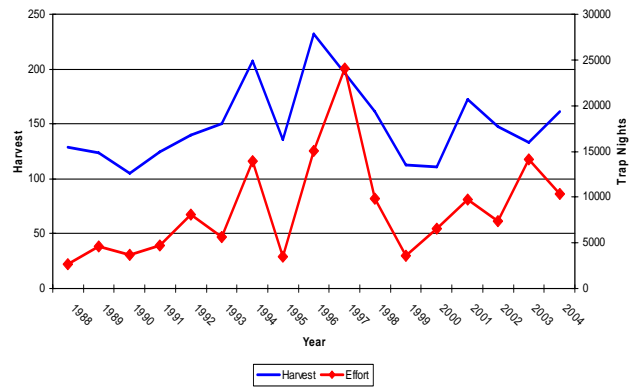


Figure 4. Harvest vs. Trapper Effort in Vermont (data from annual Trapper Mail Survey returned by trappers — thank you!).

### Fisher



### Otter



### Bobcat

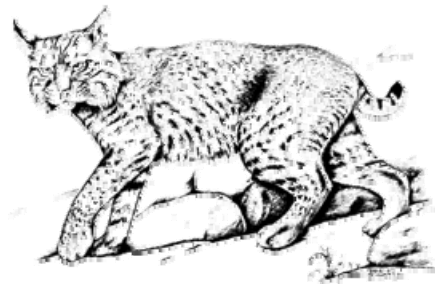
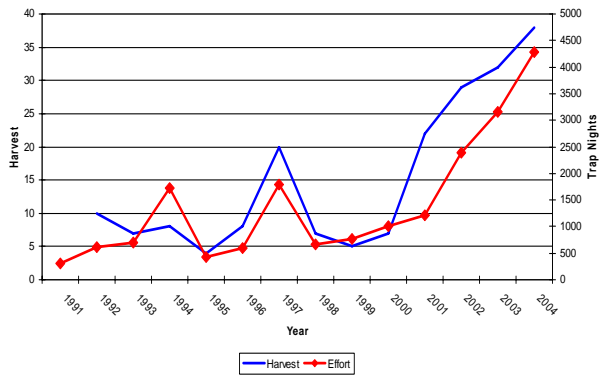


Figure 4. Harvest vs. Trapper Effort in Vermont (cont.)

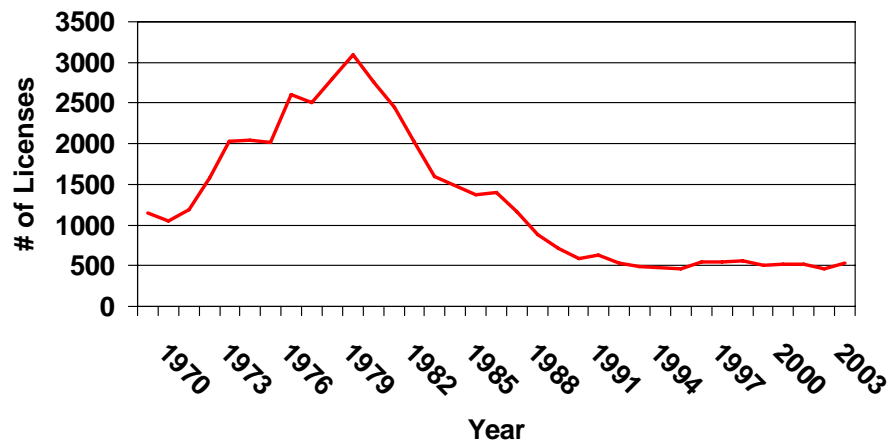


Figure 5. Total number of resident trapping license sales in Vermont by calendar year.

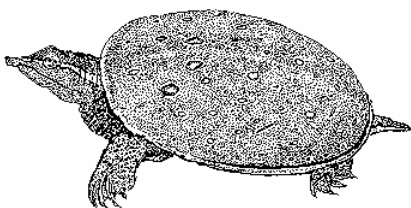
## Turtles Get A Helping Hand From Trappers

Steve Parren has been monitoring the nesting activities of turtles at two beaches on Lake Champlain in his role as coordinator for the Vermont Fish & Wildlife Department's Nongame and Natural Heritage Program. The beaches are important nesting sites for map turtles, painted turtles, snapping turtles, and the State-threatened spiny softshell turtles. One of the beaches normally supports over 150 turtle nests. By monitoring nesting beaches, Steve can determine hatching success or sometimes reduce the impact of predation.

Raccoons, skunks, and foxes enjoy feasting on turtle eggs and young hatchlings. These predators are happy to share their space with people and have adapted very well to the human-dominated landscape of the area. In contrast, the turtles prefer undisturbed beaches for nesting sites, which have become harder to find as more shoreline is developed. Turtle nesting becomes more concentrated on fewer beaches, making predation a greater threat to nesting success.

The U.S. Department of Agriculture's Wildlife Services has partnered with the department to help protect the turtle nests by trapping and removing potential predators. Only six softshell nests were preyed upon in 2004 compared to 38 in the 2003 active nesting season, which generally lasts from June to October.

— *Lilla-Stutz Lumbra, VT F&W Department*



## Tracking the Elusive Bobcat

*(Continued from Page 1)*

The project, which began in 2004, is funded by the State Wildlife Grants program and is overseen by graduate student Mark Freeman and the Cooperative Research Unit assistant leader Dr. Terri Donovan. To date, 15 bobcats have been captured and outfitted with radio collars. Approximately half of the collared cats were trapped by cooperating Vermont trappers. The collars are programmed to collect GPS location points from satellites several times during the day and night. The data are stored in the collar until, after approximately four months, the collar falls off the cat and is retrieved from the field. The data can then be downloaded onto a computer and analyzed to answer the questions posed earlier. Trapping will continue next fall and winter. Results should be available the winter of 2008. Stay tuned...



**Graduate Student Mark Freeman and cooperating trapper Barry Forbes. Photo by Cory Blodgett.**

## Featured Species: Mink (*Mustela vison*) (Also known as Minx, Vison, Water Weasel, Least Otter)



*The mink's trail will take you on a wondrous adventure through the thickest underbrush, over dreadfully thin ice, into ice-cold streams, and across marshes and swamps. Tracking mink requires all the outdoor skills you can muster, but doing so is almost always worth the effort."*

– Paul Rezendes, *Tracking and the Art of Seeing*

Resembling a scaled down version of its cousin, the River Otter, the American Mink is one of the most widespread carnivores in North America, ranging throughout Canada and the United States except for extreme northern Canada and the arid southwestern U.S. In 1853 in the Natural History of Vermont, Zadock Thompson described a mink this way:

*"It is very easily tamed and in that state is very fond of being caressed, but, like the cat, is easily offended, and, on a sudden provocation, will sometimes bite its kindest benefactor."*

Though at times mink can be almost as playful as otters, sliding for short distances or tunneling under soft snow, when hunting or mating they become quite aggressive. The ability to take down prey larger than itself has earned the mink a reputation of being vicious and bloodthirsty. Mating often includes brutal fighting, leaving the female with scabs and small scars. If threatened, a mink will empty its anal glands of musk in defense, raising its tail and rocking side to side to further disperse the pungent odor. No doubt this is why in Sweden it is called the "stinking animal from Finland."

The mink's body is typical of the Mustelidae (weasel) family – long and slender with short sturdy legs. It has short ears, a strong neck, a bushy tail and sharp, carnivorous teeth. Its feet are fully furred and partially webbed. Males are larger than females, weighing on average about 1.5 to 2 pounds and measuring 19 to 28 inches. Soft and lustrous, the water weasel's fur varies in color from dark brown to black with white patches on its chin, chest, and belly. The tail color deepens to black at the tip. Dense underfur and long, glossy guard hairs comprise the much sought after pelt.

During the January/February mating season, a female mink may mate with several males and, as a result of delayed implantation of the embryos, the kits of one litter may have different fathers. An average of four to six sightless young are born in April or May. With

eyes open after about three weeks, they are weaned at about five weeks and are ready to begin hunting at eight weeks. They stay with the mother until fall.

Mink rely heavily on sight when foraging, though they do not see well underwater. They are agile tree climbers, decent swimmers, and short-duration divers. They mostly hunt for food along waterways, stopping frequently to explore any nook or cranny that may be a refuge for prey or to search for aquatic prey on the water's surface. A carnivorous diet of fish, amphibians, crayfish, muskrats, and small mammals sustains the mink, though predation of waterfowl and their eggs is also common. In Manitoba, Canada, it was estimated that a male mink consumed 3-7 adult ducks, 15-25 week-old ducklings, and 18-30 duck eggs during a single waterfowl breeding season.<sup>1</sup>

*Mustela vison* make their home wherever there is a permanent body of water such as a lake, river, stream or marsh, and a dependable food source. Abundant vegetation along the shoreline is also an important habitat component, providing cover for traveling and foraging. A mink will commonly use an abandoned beaver lodge or muskrat, rabbit, or squirrel burrow for denning. Nomads by nature, mink will rarely stay in the same den for more than several days at a time, ranging over an area of up to 3.5 miles of shoreline. Females with kits may use a den for up to two weeks and occupy a smaller range.

Mink fur has been a staple of the North American fur trade since European explorers and Native Americans first made contact in the mid-seventeenth century. It was not recognized as valuable, however, until the decline of the beaver. Nineteenth century naturalist Dr. John Richardson wrote that during the period 1823 to 1827, *"the fur of Vison is of little value, and at many remote parts, their skins are taken by the traders from the Indians merely to accommodate the latter, but afterward burnt, as they will not repay the expense for carriage. The fur, however, is very fine, although short, and is likely, in the revolutions of fashion, to become valuable again."*<sup>2</sup>

<sup>1</sup>Larivière, Serge; Wild Mammals of North America: Biology, Management, and Conservation; 2<sup>nd</sup> Edition; Chapter 31; pp. 666.

<sup>2</sup>Andrei, Mary Anne; Mink and the North American Fur Trade; [www.bell.lib.umn.edu/Products/mink.html](http://www.bell.lib.umn.edu/Products/mink.html)

## VTrans and F&W Working Together for Wildlife

If you have lived in Vermont for a while, you probably realize Vermont's roads are getting busier. During the past ten years, Vermont's population has grown 8.2 percent while at the same time the number of registered non-commercial vehicles has increased 24 percent. There are about 14,251 miles of roads in Vermont, and according to the Vermont Agency of Transportation (VTrans), the number of vehicle miles traveled by Vermonters is growing at a rate seven times greater than the state's population.

Vermont Fish & Wildlife Department (VFWD) biologists have long recognized that a road's environmental footprint extends far beyond the edge of its pavement. Every year cars, vans, and trucks traveling on Vermont roads kill thousands of animals ranging from frogs to black bears to raccoons. Collisions with large animals, such as deer or moose, present a real threat to human safety.

Road construction also directly impacts wildlife by affecting their movement, destroying or fragmenting habitat, affecting water quality, and replacing natural cover with impervious surfaces and invasive species. Small, inadequate, or poorly placed culverts create barriers to fish migration in streams and also can block passage of terrestrial wildlife that use stream sides as habitat and travel corridors.

VTrans also recognizes the impacts roads have on wildlife and is collaborating with VFWD in several ways to incorporate habitat connectivity and wildlife movement when planning and developing transportation projects in Vermont.



“One of our first efforts was the installation of divided concrete underpass during the construction of the Circumferential Highway in Chittenden County,” said John Austin, VFWD biologist.

During the Bennington Bypass construction two bridges were extended well beyond the banks of the watercourses they span to accommodate wildlife movement.

VTrans also worked closely with VFWD and other state and federal regulatory agencies to develop a plan to improve wildlife movement, wildlife habitat, and habitat connectivity during the reconstruction of Route 78 in northwestern Vermont. The road bisects the Missisquoi National Wildlife Refuge and impacts a significant wildlife travel corridor. The plan includes building a 500-foot bridge to accommodate wildlife movement and improve ecological connectivity, moving the road away from the Missisquoi River to re-establish riparian habitat, and installing several large box culverts to provide passage ways for wetland furbearers, waterfowl, fish, and other aquatic organisms.

“Perhaps our most exciting collaboration has been the creation of an inter-agency Wildlife Crossing Team,” said Chris Slesar, environmental specialist for VTrans. The team's goal is to collect long-term data on habitat and wildlife movement associated with transportation projects throughout the state.”

VTrans and VFWD also are partnering to create a statewide Geographic Information System (GIS) database for wildlife crossings, habitat, road mortality, and transportation information. The database will be used to identify significant wildlife linkage areas associated with highways and town roads and assist in future transportation planning.

“By collaborating on the various projects, we greatly improve interagency coordination on transportation planning and environmental regulation as it relates to wildlife conservation,” said Austin. Through cooperation, we can make more effective and efficient transportation decisions and accomplish a great deal more for Vermont's environment, wildlife, and human safety.”

— Lilla-Stutz Lumbr, VT F&W Department

## VTA Funds Additional Furbearer Education Kits

You may recall from last year's newsletter that the Northeast Furbearer Technical Committee (furbearer biologists from 13 Northeastern states and 5 Canadian Provinces) developed furbearer education kits for each state and province to use as a prototype for the creation of additional kits. The kit includes a curriculum for middle school students, 14 furbearer pelts, skulls, rubber tracks and scat, three mammal track guide books, two skull keys, a CD, three videos, and more!!

Thanks to the Vermont Trappers Association who graciously funded additional kits, and to Mary Beth Adler who purchased all of the necessary materials, we now have enough (5 in all) so that a kit will be available in each of the four regional offices (Springfield, Rutland, St. Johnsbury, Essex) and Waterbury. Teachers, wardens, trappers, and others interested in conducting school education programs, can sign out the kits by contacting the local wildlife biologist.



## Get Paid to Improve Wildlife Habitat

Want to create high quality fish and wildlife habitat on your land? WHIP can help! The Wildlife Habitat Incentives Program is a voluntary USDA program that encourages restoration, enhancement, and creation of wildlife habitat. Through WHIP you can obtain technical and financial assistance for practices used to restore and/or manage upland, wetland, riparian, and aquatic habitat. These practices benefit a wide variety of species including furbearers such as mink, otter, beaver, red fox, grey fox, and fisher.

If you own land or manage land and are interested in wildlife, WHIP might be a program for you. For more information, contact your local USDA Natural Resource Conservation Service office or one of three Vermont Fish & Wildlife Department WHIP technicians: Dave Adams 802-879-2330; Mary Beth Adler 802-885-8836; or Fred Schroeder 802-786-3879. You can also find more information at the VFWD website [www.vtfishandwildlife.com](http://www.vtfishandwildlife.com). Click on Wildlife Programs and then Managing Your Land for Wildlife.

—Mary Beth Adler, VT F&W Department

## Thank You, Thank You

So many folks have contributed to the conservation of the furbearer resource through their help and support of the Furbearer Project. The following people have volunteered their time and expertise in so many ways including, but not limited to: collecting tissue samples for genetic testing, assisting at carcass processing sessions, serving on the Trap Standards Committee, assisting on the bobcat study, working as BMP trappers, designing curriculum standards for the curriculum kits, and much more. We can't possibly thank everyone but below are a few that have gone above and beyond this past year. Many, many thanks — we couldn't do it without you!

Mary Beth Adler  
Paul Ainsworth  
Bruce Baroffio  
Jim Calchera  
Barry Forbes  
Gary Gibbs  
Aaron Hurst  
Mak Keyes  
Bill Kilpatrick  
Wayne Lantagne  
Kevin Lawrence  
Scott Mayer  
Sue Morse  
Gary Pelton  
Bill Pickens

Rick Schoonover  
Vanessa Schoonover  
Mark Schiff  
Peter Smith  
Patrick Soneira  
Jim Stewart  
Brent Teillon  
USDA, APHIS, WS Biologists  
Fur Team Members  
VT F&W Biologists, Ecologists  
& Technicians  
VT Hunter Education Div.  
VT Information & Education Div.  
VT F&W Wardens  
Wildlife Educators





## Mink (*Mustela vison*)

(Continued from Page 6)

Dr. Richardson's prophecy was to prove true. While mink could not replace beaver for the making of hats, it was used for making coats and trimming various garments. The American mink grew in favor over its smaller cousin, the European mink (*Mustela putorius*), and became a fashion symbol of luxury. The demand was so high that mink farms were established to supplement the wild fur trade in North America and Canada in the 1860s. It was at this time that the value of mink skins increased and trappers began to target wild mink as their primary source of income.

In general, the mink population in Vermont today is considered secure. Short-term fluctuations are evident in the data collected from the Trapper Mail Surveys, but at present



mink are not a species of concern. Mink, like other Vermont mammals, however, are threatened with the loss of habitat due to development and other changes in land use as well as pollution of the waterways they depend on. It has been estimated that approximately 20 acres of regulated wetland and a similar amount of unregulated wetland are lost each year. Many rivers, streams, and lakes in Vermont no longer have healthy riparian areas, a key component to maintaining high quality aquatic habitat. Although they are far healthier in terms of pollution levels than they were 30 years ago, acid rain and nonpoint source pollution continue to have an adverse impact on them. Because mink are extremely sensitive to environmental pollutants, lower body weights, physical abnormalities, and lower population densities are the results of these impacts.

Reverend Dr. Samuel Williams wrote in [The Natural and Civil History of Vermont in 1794](#), "In our rivers, ponds, and lakes, the beaver, muskrat, mink, and otter are to be found in large numbers." Protecting its habitat, reducing water pollution and continued management of the population by the Fish and Wildlife Department will help to keep the mink as much a part of the Vermont landscape today as it was in Dr. Williams' time.

—Mary Beth Adler, VT F&W Department

## Recipes

### BBQ Beaver-wiches

1 medium beaver, cut into serving pieces  
 1 cup chili sauce  
 1 cup beer  
 3 tablespoons brown sugar  
 2 tablespoons minced onion  
 1 tablespoon minced garlic  
 2 teaspoons Worcestershire sauce  
 1 teaspoon dry mustard  
 ½ teaspoon liquid smoke  
 dash hot pepper sauce  
 salt and black pepper to taste  
 Kaiser rolls  
 cole slaw for a relish



In Dutch oven, combine all ingredients except Kaiser rolls and cole slaw; stir well to mix. Heat to boiling. Reduce heat and simmer for 1½ hours, or until meat is falling from bone. Remove beaver pieces with tongs and set aside until cool enough to handle. Pull meat from bones and return to sauce; discard bones. Reheat gently if necessary. Warm Kaiser rolls in oven and fill with meat mixture. Top with cole slaw. This is also very good served over rice.

Submitted by G. E. McIntyre from *Gamecalls.net's Online Cookbook*

### Muskrat Casserole

5 tablespoons butter  
 2 muskrats cut into pieces  
 1½ cups thick cream  
 1/3 cup vinegar  
 5 scallions diced  
 salt and pepper to taste  
 ½ teaspoon thyme



Melt 3 tablespoons of butter in casserole and brown the muskrat pieces lightly in it. Mix the cream, vinegar, scallions, salt, pepper, herbs, and butter to the ingredients. Pour half the cream mixture over the muskrat. Cover casserole and simmer over very low heat for an hour. Be careful not to burn the mixture. Skim off the butter and add remaining cream mixture. Heat gently for 10 minutes until sauce thickens.

From [www.nearctica.com](http://www.nearctica.com)

## Check Out These Web Sites

### Vermont Fish & Wildlife Department

<http://www.vtfishandwildlife.com>

### Conserve Wildlife

<http://www.conservewildlife.org>

### Vermont Trappers Association

<http://www.vermontrappers.com>

### National Trappers Association

<http://www.nationaltrappers.com>

### IAFWA Furbearer Resources Technical Work Group

<http://www.furbearermgmt.org>

### Furbearers Unlimited

<http://www.furbearers.org>

### Fur Takers of America

<http://www.furtakersofamerica.com>

### The Wildlife Society

<http://www.wildlife.org>

### Keeping Track

<http://www.keepingtrack.org/>



## THANK YOU, THANK YOU

Trappers, hunters, game wardens,  
furbearer team members, and trap  
standards committee members for your  
help in the management and conservation  
of Vermont's furbearers



The Vermont Agency of Natural Resources is an equal opportunity agency and offers all persons the benefits of participation in each of its programs and competing in all areas of employment, regardless of race, color, religion, sex, national origin, age, disability, sexual preference, or other non-merit factors.

This publication is available upon request in large print, braille, or audio cassette.

## VERMONT FURBEARER MANAGEMENT NEWSLETTER

VERMONT AGENCY OF NATURAL RESOURCES

### FISH & WILDLIFE DEPARTMENT

100 Mineral Street, Suite 302

Springfield, Vermont 05156-3168

Phone: 802.885.8855 | Fax: 802.885.8890

E-mail: [kim.royar@state.vt.us](mailto:kim.royar@state.vt.us)

**Editors:** *Kimberly Royar*  
*Christopher Bernier*

**Designer:** *Melissa Currier*



[www.vtfishandwildlife.com](http://www.vtfishandwildlife.com)