

Vermont Furbearer Management Newsletter



Vermont Fish & Wildlife Department



The **MISSION** of the Vermont Fish & Wildlife Department is the conservation of fish, wildlife, and plants and their habitats for the people of Vermont.

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Inside this issue:

Changes to the Beaver Dam and Lodge 10' Setback Rule	4-5
What's up with the Muskrats?	5
Canada Lynx in the News	6
Carcass Processing: Better Than a Good Day in the Office (or Jury Duty!)	7
Your Carcasses at Work	7-8
Trapping Trivia	8

Introduction

Those of us who choose to earn all or a portion of our livelihood outdoors, or just plain like to spend every spare moment recreating there, can relate to the common bumper sticker, "A bad day of fishing (or hunting, trapping, hiking, skiing, birding, etc.) is better than a good day of work." No matter what the task is that brings us inside for even a short period of time, it is precious time away from where we'd rather be. For you as a trapper and avid outdoors person, filling out the "blue cards" and the annual Trapper Mail Survey probably fall into that category of tasks. The Furbearer Program staff here at the Vermont Fish & Wildlife Department recognizes your efforts and greatly appreciates your continued diligence in providing us with this much needed data. In the short articles to follow, we hope to share with you some of the ways *your* data and efforts were used this past year in the hopes of fostering a better understanding of what it is we do and of your role in making it possible.

2010-11 Season Data Collection Efforts and Summary

Each year, the Vermont Fish & Wildlife Department's Furbearer Program collects a variety of data related to the harvesting of furbearers. Through careful analysis of this data, we are able to monitor the population trends of the animals you pursue and, in so doing; are in a better position to make informed and meaningful decisions regarding the management of these species. The data you provide is essential for ensuring healthy populations through the future. Additionally, but no less significant, we annually use this information to properly inform those who are less than supportive of trapping about the health of our furbearer populations, the ecologic and economic benefits of trapping, and the **cooperative and ethical character of Vermont's trapping community**. Without you, the trapper, we would have virtually no information on these species and would be at a great disadvantage for managing healthy furbearer populations.

There are currently three core sources of data we annually collect, analyze, and rely upon for managing Vermont's furbearer resources. The first of these is the *Fur Dealer Reports*. All licensed Vermont fur dealers are annually required to report the number of pelts per species they've purchased from Vermont furbearer trappers and hunters. This system provides an index of between year fluctuations in pelt sales but underestimates the true magnitude of the harvest because the annual totals exclude out-of-state pelt sales by trappers to non-resident fur dealers. During the 2010-11 furbearer trapping/hunting seasons, a total of 1634 pelts were purchased by licensed Vermont fur dealers. Most of the pelts, 1248, were purchased at the two annual fur auctions hosted by the Vermont Trappers

2010-11 Season Data Collection Efforts and Summary *(continued from page 1)*

Association. The remaining 386 pelts were purchased directly from Vermont trappers and hunters by seven individual Vermont fur dealers. The total number of pelts purchased this season was again below the ten year average of 2325.9 pelts and further contributes to the downward trend in pelt purchases (Figure 1). Red fox, muskrat, and beaver pelt purchases accounted for the bulk of this decline.

The second substantial source of data for the furbearer program is the *Trapper Mail Survey*. This annual mail survey is designed to collect data on a per species basis related to the magnitude and distribution of harvest, the effort expended, the average price received, and the markets into which pelts were sold including to out-of-state fur dealers. Since implementing the mail survey, Furbearer Program staff have been able to use the out-of-state pelt sale and average pelt price data in concert with the fur dealer report data to extrapolate the magnitude and total value of the annual furbearer harvest. Additionally, the catch per unit effort (CPUE) and incidental take of each species is annually calculated based on data collected via the mail survey. CPUE data is particularly important because simple harvest numbers alone are less meaningful if you don't know how much effort went into the harvest. For example, if a species is abundant, it should take less effort to catch one individual (higher CPUE). Conversely, if a species is less abundant, it would take more effort to catch one individual (lower CPUE). Therefore, by tracking CPUE over time, we can

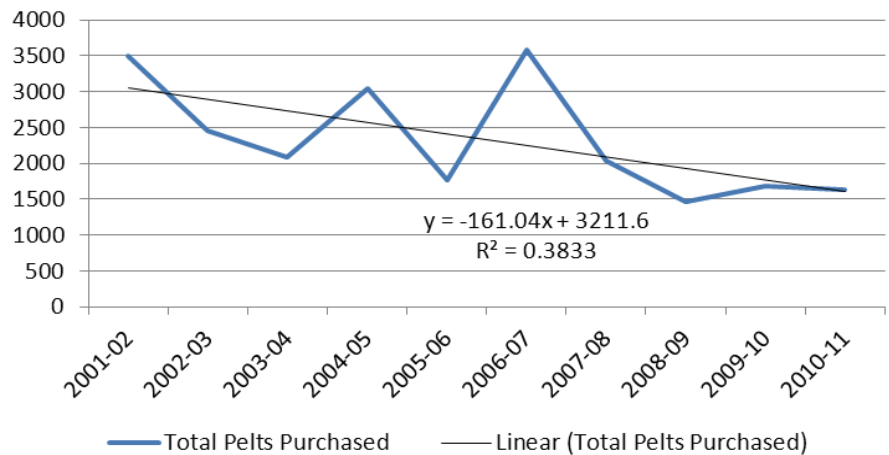


Figure 1. Summary of Vermont Fur Dealer reported pelt purchases, 2001-02 through 2010-11.

As of this writing, we have had only 20% of the surveys returned thus far (average annual response rate is approximately 60%). In the past, multiple reminders have been sent out at a great expense, both in terms of dollars and time. Budgets and staff time are very tight these days, and we will therefore only be sending out this one reminder — **PLEASE RETURN YOUR SURVEY**. Another copy of the survey has been enclosed for your convenience and of course you can always complete the online survey at: www.vtfishandwildlife.com/AnnualTrappersReport.cfm. The online survey does require your license number so as to ensure only legitimate surveys are submitted. However, because only licensed trappers are directly mailed the survey, we can be reasonably assured that any survey we receive in the mail is from a licensed trapper. Mail in surveys may, therefore, be submitted anonymously if you so desire.

determine whether populations are increasing, decreasing or stable.

It is important to note that **the value of this information is directly related to how many surveys are returned to us each year**. Because of the voluntary nature of this survey, it is unrealistic to expect 100% participation so we therefore have to estimate the final numbers based on the assumption that those trappers who did not respond to the survey trapped, harvested, and sold furbearers at the same rate as those that did respond. This is a

major assumption and, as you might imagine, the accuracy of the data improves with every returned survey — **whether you trapped or not**.

Based on the information provided by trappers who responded to last season's survey, the total *estimated* harvest for the season was 9,922 animals taken and 7,114 pelts sold. The *estimated* total value of statewide pelt sales is \$94,534.05 which represents an approximate value of \$247.47 received per active trapper. Although more closely

2010-11 Season Data Collection Efforts and Summary *(continued from page 2)*

approximating the actual values of the season’s statistics than simply just the raw numbers collected from the surveys, these estimates are likely an overestimate due to the fact that trappers not responding to the mail survey probably participate in trapping activities at lower rates than those that do respond. Again, efforts to improve survey response rates will only increase the accuracy and value of these season statistics.

A summary of the 2010-11 season CPUE compiled from the trapper mail survey responses is provided in Table 1. The 2010-11 CPUE values for mink, raccoon, muskrat, coyote, grey fox, and river otter are all slightly above the 10-year average CPUE values and add to the relatively stable trends observed for these species. Because

skunk and opossum are commonly taken incidentally to the harvesting of other species, the reporting of harvest data for these species is often highly variable resulting in an analysis of limited value. Beaver CPUE rose sharply in 2010-11 with a 135% increase in reported catch per unit effort from the previous year and 48% higher than the ten-year average reported CPUE. This observed increase in CPUE for beaver is possibly reflective of higher catch rates resulting from an overall decrease in effort (61% less than the 10-year average effort). Although the CPUE values for bobcat and fisher appear to be trending downward, season changes enacted in 2004-05 are likely in part responsible for this trend, particularly for fisher whose season length was nearly doubled at that time. The red fox CPUE

continues to trend downward, however, this is likely a result of population declines related to the persistence of diseases in this population. We will closely monitor this species.

The third source of data critical to the furbearer program, and perhaps the most time consuming for you, is the tagging and collection of bobcat, fisher, and otter carcasses. Information gathered via this tagging includes the town, watershed/wildlife management unit, date of harvest, type of take (trapped, hunted, road-killed, etc.), and the target species. The collected carcasses are annually examined to determine the sex, age, and physical condition of each

Continued on page 4

Table 1. Summary of annual trapper mail survey reported catch per unit effort (CPUE). 2001-02 through 2010-11.

Season	Mink	Raccoon	Muskrat	Skunk	Opos- sum	Weasel	Coyote	Red Fox	Grey Fox	Bobcat	Fisher	Otter	Beaver
2001-02	1.86	2.75	11.34	3.90	16.48	2.34	1.92	1.65	0.87	1.97	3.53	1.52	6.87
2002-03	1.62	2.93	11.61	13.25	42.86	4.34	1.53	1.31	1.33	1.16	2.93	1.61	4.35
2003-04	1.32	2.56	5.27	5.18	4.36	2.86	1.57	1.63	0.66	1.14	2.18	0.83	3.98
2004-05	1.41	3.23	10.21	4.16	36.21	4.21	1.85	1.32	0.46	0.91	2.20	1.53	5.15
2005-06	2.08	3.05	10.75	4.29	—	4.30	2.10	1.69	0.86	0.84	2.06	1.75	6.13
2006-07	1.62	2.48	11.55	5.39	6.81	1.82	1.23	1.46	0.48	0.59	1.24	1.63	7.58
2007-08	2.57	4.01	10.43	2.67	5.28	2.32	1.38	1.53	0.68	0.65	1.36	1.75	4.30
2008-09	1.64	3.04	10.47	7.24	5.38	3.07	1.57	1.26	0.65	0.75	1.17	1.08	5.01
2009-10	1.80	2.66	14.21	13.34	7.25	3.56	1.47	1.07	1.25	0.87	1.52	1.12	3.44
2010-11	2.19	3.00	12.11	10.73	10.81	2.17	1.73	0.87	0.88	0.88	1.43	1.71	8.10
10-yr Average	1.81	2.97	10.79	7.02	15.05	3.10	1.64	1.38	0.81	0.97	1.96	1.45	5.49

2010-11 Season Data Collection Efforts and Summary *(continued from page 3)*

specimen. Sex and physical condition are determined through internal examination of the carcasses whereas ages are attained by the examination of tooth sections at a commercial laboratory. Pelt tagging and carcass examination data are annually analyzed, tabulated, and mapped to determine the harvest magnitude and distribution as well as the age/sex structure of these harvested populations. When combined with the trapper mail survey results, information gathered via this program gives us the ability to very closely monitor these key species.

A total of 68 bobcat, 430 fisher, and 175 otter was reported and tagged by game wardens during the 2010-11 season. Additionally, 650 of these carcasses (66 bobcat, 418 fisher and 166 otter) were collected for later examination.

Bobcat: The 2010-11 season bobcat harvest was well distributed throughout the state with the heaviest harvests recorded in the northeast, south-central, west, and southwest portions of the state. Although the distribution of the harvest is heavily influenced by where hunting and trapping effort is applied, these harvest records minimally show that bobcats exist in each of the State's 24 Wildlife Management Units (WMU) and that the effort for and harvest of bobcats have remained relatively consistent for the past 10 years. Of the 68 bobcats harvested during the 2010-11 season, 35 (51%) were trapped, 24 (35%) were hunted, and the remaining 9 (13%) were taken either incidentally, in defense of property, illegally, or were road-killed. This breakdown

is remarkably close to the 10-year averages for these statistics and reflects the stable nature of both the bobcat hunting and trapping seasons as well as the stability of the bobcat populations throughout the state. Although the proportion of females in the 2010-11 season harvest was amongst the highest recorded in the past 10 years, the high juvenile/adult ratio, coupled with the low male/female ratio, indicate that this increase is a result of a higher proportion of juvenile females in the harvest. Again, a review of the age and sex structure of the bobcat harvest reveals no alarming trends and reflects the relatively stable nature of the present bobcat population.

Fisher: Similarly, the fisher harvest was also well distributed throughout the state with the heaviest harvests occurring in the WMUs situated east of the Green Mountains. Close examination of the fisher harvest distribution reveals that the 2010-11 season is reflective of the 10-year average harvest thereby indicating that the effort for and harvest of fisher have remained relatively consistent for the past 10 years. An analysis of the 2010-11 fisher biological data reveals a sex and age structure of the harvest that is remarkably similar to the 10-year average values for these statistics. Although the ratio of juveniles to adult females (≥ 2 yrs) is lower than the ideal of 5-7 reported in the literature, the 2010-11 ratio of 3.07 equates to the 28-year average of 3.1 (range, 2.0 to 4.5) further strengthening the belief that Vermont's fisher population is stable and conservatively harvested.

Otter: Although the distribution of the 2010-11 season otter harvest is largely comparable to the 10-year average harvest, one significant difference was noted. The 2010-11 season resulted in a higher than average otter harvest in Watershed Management Unit number 16. A review of the biological information reveals that all sex and age statistics for 2010-11 were less than the 10-year averages of these indices. The decrease in proportion of males and juveniles in the otter harvest may indicate an increase in trapping pressure relative to the otter population. However, a review of the catch per unit effort and reported trap night data compiled from the trapper mail surveys indicates a relatively stable otter population and trapper effort with no significant changes observed. The otter harvest will continue to be closely monitored.

Changes to the Beaver Dam and Lodge 10' Setback Rule

In September 2011, the Vermont Trappers Association (VTA) petitioned the Vermont Fish & Wildlife Board (FW Board) to eliminate a rule which requires all traps to be set no less than 10' from beaver dams and lodges. In its petition, the VTA cited logical rationalization for the elimination of this rule prompting the FW Board to request additional information from the Vermont Fish & Wildlife Department. Since the filing of this petition, furbearer

Changes to the Beaver Dam and Lodge 10' Setback Rule *(continued from page 4)*

program staff and the VTA Board have met on several occasions to discuss the various merits and implications related to this rule. **Using data you provided through the trapper mail survey and blue cards**, the Department and the VTA have largely agreed upon a proposed rule change which is currently being pursued.

Of the many options considered, the Furbearer Program staff and the VTA have settled on one which we believe will in large part address the concerns raised by the VTA in its petition, will meet the objective of harvesting more in-season beaver, and will preserve measures aimed at minimizing the incidental take of otters. In essence, this proposed change is to align the opening of otter and beaver seasons to the

fourth Saturday in October resulting in an expansion of the beaver season by at least two weeks and to eliminate the 10' rule in all but the period between March 1 and March 31 when the otter season is closed and the beaver season remains open. It is expected that the lengthening of the beaver season in combination with the elimination of the 10' rule will result in an increased in-season beaver harvest. This change should not result in an appreciable increase in the out-of-season otter harvest and may, in fact, result in a decline in incidentally taken otter should the objective of decreasing out-of-season nuisance beaver trapping be realized. The Department does expect, though, that the proposed changes will result in an increase in the in-

season otter harvest. However, given the harvest data collection protocols currently utilized and **the ongoing cooperative nature of trappers in providing critical data**, everybody acknowledges that sufficient mechanisms are in place to detect such increases. We will revisit the rules as necessary to protect this population should such actions be warranted.

Although the intent all along has been to enact these rule changes prior to the beginning of this fall's trapping season, we are only part way through the process, and there is no guarantee that the changes will be finalized in time for this season. Rule changes such as this righteously require multiple levels of review and input which of course takes time. Stay tuned...

What's up with the Muskrats?

Trappers and wildlife biologists from around the region continue to express concern for the muskrat population. Here in Vermont, the reports are mixed. Anecdotally, some describe wetlands completely devoid of muskrats where they were once plentiful while others are witnessing healthy, abundant populations. At face value, this information minimally indicates that the problem is not statewide in nature but is, rather, restricted to certain areas. Similarly, theories behind these apparent declines are also widely scattered. Predation, tularemia, habitat loss, pollution, etc. have all been voiced as possible causes yet, the fact remains, we still do not know for sure. These declines are likely the result of a combination of things rather than one "smoking gun." For our part, the Vermont

Fish & Wildlife Department will continue to participate in the regional conversation regarding muskrats and will cooperate with research efforts as such opportunities arise. At home, we will continue to collect and analyze the sex and age data on the pelts you bring to the VTA auctions.

Although our sex/age dataset is just now beginning to get to the point where there is enough data in it to provide meaning, a precursory review of this information does not reveal any obvious alarming trends. Since 2008, when we first started collecting this data, the sex and age structure of the harvested muskrat population appears to have remained relatively stable with more males harvested than females and more juveniles than adults.



Albeit stable, the ratio of juveniles to adult females does appear to be lower than it should be given the reproductive capacity of these animals and the vulnerability of juveniles to trapping pressure. However, when the age and sex data is looked at in concert with **the trapper mail survey information that you provide**, the catch per unit effort data for these animals, which has not statistically changed for the past 20 years, supports the stable nature of the sex and age structure of the harvest. This indicates that the overall population is not in immediate jeopardy.

Canada Lynx in the News

It was hard to miss the flurry of press coverage the Canada lynx surveys in the Northeast Kingdom got this past winter, but it is even harder to make sense of what these surveys mean for Vermont. As is typical of things of this nature, the emotional reaction to the news has ranged from downright elation to extreme anxiety. Quite frankly, I'd be remiss if I didn't tell you that I myself have personally experienced the whole emotional array. However, when I step back from the vortex and examine the facts, it doesn't take long for both my elation to be subdued and my anxiety to be calmed.

Historical records of Canada lynx in Vermont are few. Although the actual status is not clear from historical records and documentation, it is believed that lynx were found at low densities prior to European contact into Vermont. Only four records of lynx exist in Vermont between 1797 and 1968 which leads one to believe that lynx historically occurred here only sporadically. Since 1998, the Vermont Fish & Wildlife Department has received 26 reports of supposed lynx sightings. Ten of these reports were deemed to be of high quality and resulted in nine actual confirmations based on various criteria and assorted methods of follow-up investigation. Most of the high quality reports and all of the actual confirmations were located in the northeast portion of the state in Caledonia, Essex, and Orleans counties. Although only

limited inferences can be made from such sightings data, it has been clear for some time now that these animals are moving into the state. What remains unclear, though, is what these animals will do through the future.

The two surveys conducted this winter in the Conte National Wildlife Refuge were the first attempts in Vermont to document their existence in a scientific manner. The refuge was chosen as the site for this survey effort because of its central location within the Northeast Kingdom, its suitable lynx habitat, and its proximity to the high quality and confirmed sightings. If we were to be successful in documenting lynx anywhere in the state using methodology adapted from Maine, it was here. Two identical lynx track surveys within the refuge were conducted under near ideal conditions in late February and early March. In sum, a total of 14 lynx tracks were intercepted by the survey crews during the two events. Based solely on the track locations and their direction of travel, we can confidently say that the 14 tracks represent at least five individual animals. Additionally, 12 scat and four hair samples were collected during the surveys and are currently being genetically analyzed for both species confirmation and individuality. Having developed and tested this survey protocol, we now have the ability to track the presence of lynx in the state through time in a



scientific way. Given this animal's specific habitat requirements, its sporadic historical presence in the state and the fact that Vermont is on the southern fringe of its range, it is entirely possible that this population could disappear as quickly as it appeared. That's the nature of fringe populations such as this. Now, with a tested scientific monitoring protocol in place, we will be able to document such trends in occurrence thereby allowing us to make meaningful management decisions.

Working in close cooperation with the Vermont Trappers Association's Canada Lynx Working Group, the Vermont Fish & Wildlife Department will process this "new" information and chart a course of action moving forward that strives to both conserve this awesome animal in the state while preserving the liberties we all enjoy as we live, work, and recreate in the great outdoors. In the coming months and years, we will continue to monitor lynx in the state and will adjust our course as necessary to achieve these goals.

Carcass Processing: Better Than a Good Day in the Office (or Jury Duty!)

Recently Vermont Fish & Wildlife Department personnel, along with a dedicated team of volunteers, completed the last of six carcass processing sessions. We performed necropsies — animal autopsies — on almost 750 bobcat, otter, and fisher combined. As it is every year, it was a monumental task that couldn't have been done without so many willing hands.

For those not familiar with carcass processing, once you turn in the carcasses to your Game Warden, they are brought to a large freezer at the Department's lab in Roxbury. The night before each session, Tim Appleton, Fish & Wildlife Specialist for the Barre field office, sets out about 120 animals on the lab floor to "soften a bit". Performing a necropsy includes confirming the gender of the animal, determining the general health by how much fat is evident, weighing it, and cutting off the lower jaw. The jaw is then simmered for a while to make tooth extraction easier. The canines are pulled from each species and

the fourth premolars from fisher as well. They are sent to Matson's Lab in Milltown, Montana (www.matsonslab.com) where they take a cross section and determine the age.

As can be imagined, the process is not the most pleasant one on our list of duties. But despite the slime and smell, the conversations that happen as we work are interesting and productive. It's a great chance to hear how the trapping season went, what trappers are seeing as trends from season to season and in various regions of the state, and different perspectives on changes and concerns facing the trapping community. This year we were joined by student research groups from Johnson State College, Green Mountain College, and University of Vermont (see related article below). There is good interaction between trappers, wardens, researchers, students, and Fish & Wildlife personnel. None of us left any of the sessions without learning something new.

Many, many heartfelt thanks to those who braved the grisly scene to help perform the necessary necropsy work. Our volunteers this year include Peter Smith, Gary Gibbs, Mak Keyes, Mark Schiff, Brent Teillon, Paul Ainsworth, and Jonathan Cummings. Martha Dunbar and Tony Musante from USDA APHIS Wildlife Services each lent a hand for a day. Pitching in from Vermont Fish & Wildlife Department were Pete Emerson, Alyssa Bennett, Cedric Alexander, Paul Hamelin, Tim Appleton, Tony Smith, Dave Gregory, and Mike Wichrowski. We have said it before but will say it again — we could not accomplish this without your willing efforts. Hope to see you all next year!

If you would like to join us in the carcass processing next year, please call or email and we'll add you to our volunteer list (802-885-8836 or marybeth.adler@state.vt.us).

Your Carcasses at Work

During the carcass processing sessions this year, we were joined by several groups of college students and their professors collecting samples for various research projects. It was a great opportunity for interaction between students, professors, trappers, and biologists. The following is a brief synopsis of some of the research being done **using the carcasses you provide**.

Dr. Robert (Bob) Genter at Johnson State College and several students collected samples of fecal material

from the large intestines of otter, fisher, and bobcat. He and his students are doing research on the sources of the bacteria *E. coli* that occur in rivers and streams in the Lamoille River basin. *E. coli* lives in the digestive systems of warm-blooded animals. Their research uses a genetic fingerprinting technique called ribotyping to identify the bacteria. They need fresh fecal material from these animals in order to create a "library" of known genetic fingerprints from animals with confirmed identifications so that

they can put names on the sources of *E. coli* collected from stream water samples. One possible outcome of this work is the ability to detect the presence of otter in a watershed by simply testing water samples.

Results from Dr. Genter's 2012 necropsies suggest that freshly-killed animals may be preferable to the stored and frozen animals when it comes to obtaining *E. coli*. Please contact him at (802) 635-1693 or at bob.genter@jsc.edu if

Your Carcasses at Work *(continued from page 7)*

you would be willing to let him sample the animals, especially otter and bobcat, when they are freshly collected.

Carol Shaw, Lab Manager at Green Mountain College, brought students to four of the six necropsy sessions this past year. Since 2009 she and her students have collected tissue from fisher carcasses taken by trappers from across the state during the trapping season. These samples are currently being used in two research projects at GMC. The first is a genetic analysis of population structure among Vermont’s fisher population. The goal of this project

is to determine the degree of genetic connection among geographically distant fisher populations in the state. The second project is to determine the infection rate and impact of CPV (canine pavo virus) on Vermont fisher populations.

Carol and her Green Mountain College students are also investigating the presence of methyl mercury and overall mercury toxicity in Vermont’s otter population. Carol notes that “these studies would not be possible without the availability of carcasses each year” and thanks Vermont trappers for their support of the

Green Mountain College students and the various research projects.

Ultimately, students engaged in these activities gain a broader understanding of the use of furbearers as well as an appreciation for the harvesting of these animals as a tool for both management and conservation. We look forward to having future student groups join us and being able to assist them with their research.

Trapping Trivia

Oldest of the “Blue Card” species as determined by tooth aging:

	Bobcat	15 years	(one taken in Ryegate in 2008, one taken in Starksboro in 2010)
	Otter	16 years	(One taken in Morristown in 1996, one taken in Guilford in 2008)
	Fisher	10 years	(5 total taken in Woodstock, 1986; Brighton 1993; Tunbridge 1998; Glover 2002; Eden 2003)

Check Out These Websites

Vermont Fish & Wildlife Department
www.vtfishandwildlife.com/

Conserve Wildlife
www.conservewildlife.org/

Vermont Trappers Association
www.vermonttrappers.com/

National Trappers Association
www.nationaltrappers.com/

Association of Fish & Wildlife Agencies
www.fishwildlife.org/index.php?section=furbearer_management&activator=27

Furbearers Unlimited
www.furbearers.org/

Fur Takers of America
www.furtakersofamerica.com/

The Wildlife Society
www.wildlife.org/

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

THANK YOU, THANK YOU

Trappers, hunters, game wardens, biologists, seasonal staff, education specialists, support staff, and volunteers for your help in the management and conservation of Vermont's furbearers



Your purchase of hunting and fishing licenses as well as equipment supports Fish and Wildlife Restoration.



Fish & Wildlife Department

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