

Vennobleundeirei Management Newsletter

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AFWA—A Wealth of Furbearer **Management Resources**

The Association of Fish and Wildlife Agencies (AFWA), formerly the International Association of Fish and Wildlife Agencies (IAFWA), was founded in 1902. AFWA represents North America's fish and wildlife agencies to advance sound,



science-based management and conservation of fish and wildlife and their habitats in the public interest. The 50 US state fish and

as well as provincial and territorial governments in Canada, are members. Federal natural resource agencies in Canada and the United States are also members.

Furbearer managers and trappers alike have benefitted from the work AFWA does. The

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Reflecting On 40+ Years Working With Furbearers

i All! It is with mixed feelings that I write to say that this is likely my last newsletter. After a long, fulfilling, enjoyable, sometimes challenging but never boring, career with the Fish & Wildlife Department, I have plans to retire sometime in late May of this year. I have truly enjoyed working with Vermonters to further the conservation of all wildlife including furbearers in this beautiful state. In the 40+ years I have been involved



with the furbearer program, there have been many changes and numerous collective accomplishments to be proud of:

- The recovery of American marten in the southern Green Mountains.
- Ten years of participation in the national trap testing research effort to develop Best Management Practices (BMPs) to improve animal welfare, selectivity, safety, efficiency, and practicability—the largest trap research effort in history.
- Assistance with the recovery of fisher in Connecticut.
- The collection of anecdotal furbearer road crossing information that has led to partnerships with Vermont Agency of Transportation and the restructuring and/or modification of under- and overpass structures.
- The establishment of one of the longest running beaver baffle programs in the country (20+ years) with the goal of maintaining beaver-created wetlands while addressing human/beaver conflicts.
- The researching of coyote and fox habitats and home range requirements in partnership with the University of Vermont.
- Participation in a research study of bobcat habitat needs with the University of Vermont Cooperative Research Unit.

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A Wildlife Monograph

"Demonstrating that trapping devices and methods can be acceptably humane, selective, and efficient is critical for ensuring that traps remain viable tools for use by avocational trappers, wildlife control operators, public health officials, and wildlife managers and researchers (Novak 1987b). Batcheller et al. (2000) identified the adoption of BMPs as an essential component of sustaining avocational trapping and the use of traps in furbearer management and research."

The Wildlife society publication, Wildlife Monographs, publishes articles on focused investigations in the area of conservation and management of wildlife. A monograph is a detailed written study of a single, specialized subject. The paragraph above is an excerpt from an article published in Wildlife Monographs in 2020 titled "Best Management Practices for Trapping Furbearers in the United States." Written by 14 wildlife biologists in federal, state, and nongovernment organizations from around the country, it is an article of significant importance considering the ongoing challenges to trapping and the management of furbearers.

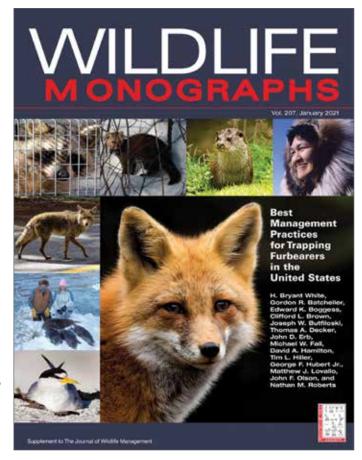
Many of you are familiar with Best Management Practices (BMPs) for Trapping Furbearers. The development of BMPs was a response to address concerns and requirements of the Wild Fur Regulation in the European Union in 1991 that "included a commitment by the United States to evaluate trap performance and advance the use of improved traps."

"The need for trapping BMPs was borne out of both national and international concerns related largely to animal welfare and selectivity. Our data and trapping BMPs are critical mechanisms by which to move those discussions forward in a more objective manner, and to help ensure that a variety of traps remain viable tools in wildlife research, wildlife conservation, wildlife damage management, and sustainable harvest of these species."

Since the research began in 1997, over 600 trap types have been evaluated for 23 species of furbearers in North America. The article explains the methods that were used, how testing efforts were prioritized, field and laboratory data collection, and the criteria used to evaluate the traps. It presents performance data for 84 models of restraining traps across 19 furbearing species, or 231 trap-species combinations.

Additionally, there are discussions concerning the financial and cultural benefits of trapping to individuals and society, the indirect and direct benefits of trapping to management and conservation, societal concerns and regulatory challenges to trapping, and the management implications for anyone with an interest in furbearers.

The article can be found online here: wildlife.onlinelibrary.wiley.com/doi/10.1002/wmon.1057



Reminder to Renew Your Permanent License

If you are a permanent or lifetime license holder, please take a minute to "renew" your license each year to help us refine our mailing lists. Licenses can be renewed online at our website or in person at your nearest licensing agent or VFWD District Office (Note: A license agent may charge you up to \$1.50 for reprinting your license).

To renew online, visit our website at vtfishwildlife. com. Click "Buy Your License" photo on the homepage. Look for the

green "Update
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License" button and then follow the instructions from there.

UPDATE YOUR PERMANENT LICENSE ONLINE

A Word (or Three Hundred!) of Thanks

When you consider the challenges and responsibilities that come with managing 14 different species of wildlife under the umbrella of one management program, it should come as no surprise that the Furbearer Project Management team relies upon the efforts of other VFWD staff along with partner organizations and a crew of dedicated volunteers to help us fulfill our department's mission to conserve fish, wildlife, and plants and their habitats for the people of Vermont. Along with the help of department biologists, game wardens, our education and outreach specialists and biologists and technicians from other organizations, we value the role trappers, hunters, researchers, students, and community scientists play in the management and conservation of Vermont's furbearers.

Trappers in particular have contributed to much of the conservation work we have accomplished and continue to do. Many of the projects in the list outlined in the article *Reflecting On 40+ Years Working With Furbearers* of this newsletter would not have been successful without your help as ethical, responsible, conservation-minded trappers.

We would not be a regional leader in collecting biological data and tissue samples for research without the carcasses you bring to us. And we would not be able to respond to requests from researchers on short notice without knowing that you are willing to make the extra effort to support studies such as those mentioned prior. An example demonstrating all three is the outstanding response we received from those of you who participated in the coyote/fox sample collection for *Echinococcis multilocularis*, without much lead time. The way you stepped up to the plate when called upon was truly commendable.

Sincere and many thanks from the Furbearer Management Project staff to all of you—trappers, hunters, community members, researchers, wardens, biologists, and support staff. It is a privilege and a pleasure to work alongside of you. Your cooperation and efforts are a vital part of maintaining sustainable furbearer populations for future generations, and for that we are grateful!

Thank you from the Furbearer Management Project staff!



Reflecting On 40+ Years (continued from page 1)

- Working jointly with the Vermont Trappers Association (VTA) and the Vermont Fish and Wildlife Board to improve trapping practices and expand and/or reduce seasons based on science as needed to maintain sustainable populations of furbearers.
- The collection and maintenance of the largest available database of biological data for bobcat, fisher, and otter in the Northeast (and possibly the nation).
- The collaboration with Cornell University and New York and Maine furbearer biologists to model bobcat and fisher harvest and biological data to create a more in-depth population model.
- Ongoing partnerships with multiple universities and researchers to collect disease, genetic, and contaminate data from the carcasses trappers are required to turn in on an annual basis. These data are critical to understanding the status of furbearer population health and well-being.
- Improving website content and outreach materials.
- The protection and/or acquisition of thousands of acres of wildlife habitat which will benefit all wildlife populations in the state for current and future generations.

We can all be proud of our respective roles in these efforts. The information, expertise, and support provided by trappers have contributed to the long-term sustainability of Vermont's wildlife. It has been an honor and a pleasure to have partnered with you over the years in these valuable conservation actions. I encourage you to continue to work to be effective leaders in conservation and maintain your critical efforts to conserve these populations for future generations.

Necropsy News

The carcasses you provide are put to good use. Besides the annual collection of sex and age data that are used to monitor furbearer populations over the long term, we are also collecting important disease, contaminant, and genetic information that furthers the conservation and management of these species for future generations. Without the support and help of trappers and hunters, much of the critical information below would be difficult to collect.

SARS CoV2 in Vermont canids and furbearers

SARS-CoV-2 is the pathogen that causes Covid-19. Recent studies show that SARS-COV-2 may have spilled over from humans to wildlife species. At present, it is unclear which members of the wildlife community may be exposed, how spillover occurs, whether wildlife experience symptoms, and whether spill back to humans is possible. The University of Vermont have been sampling furbearers, coyotes, and foxes turned in by trappers and hunters to explore whether SARs-CoV-2 is present in Vermont's furbearer and canid populations, what the prevalence is, and how prevalence varies among species.

Rodenticides

This will be the third year that the department will collect liver samples from fisher for rodenticide testing. We hope to fill in some of the gaps with this year's testing. We also plan to collect samples from bobcat to see if the rodenticide levels are similar to what we found with fisher. Other states in the region are also planning on sending samples to the same lab; however, they are more challenged due to the fact that, unlike Vermont, few other states have mandatory collection of fisher, otter, and bobcat carcasses.



The department collected samples from bobcats to test for rodenticides levels.

Echinococcus multilocularis

The department is working with Virginia Tech University to collect samples from coyotes and foxes voluntarily turned in



The department collected samples from coyotes voluntarily turned in by trappers to test for a zoonotic tapeworm.

by trappers and hunters to test for *Echinococcus multilocularis* (EM) a zoonotic tapeworm that can cause Alveolar echinococcosis (AE), a severe zoonotic disease in humans that affects the liver.

Collection of genetic material from furbearers, canids, and other species to better understand wildlife movement and landscape connectivity

The Northeast region provides key habitats that allow for the movement and genetic exchange of animals across several states and provinces, which promotes healthier and more resilient populations. This region also represents a critical linkage for the movement of species northward as climate conditions change. However, habitat fragmentation, alteration, and loss represent persistent conservation problems that can substantially impact wildlife populations by limiting how and where species move across the landscape.

A team of researchers from the University of Vermont is collecting genetic samples from 11 species including furbearers and canids to enhance the understanding of wildlife movement and connectivity across the northeastern states, based on the composition and configuration of land cover. This work will help to inform future land and species management decisions, and conserve/enhance connectivity for these species across the region.

Genetic testing for fisher diversity

The University of New Hampshire will continue the collection of genetic material from fisher to build on work done in the past. Using the samples we provide, researchers will analyze and characterize fisher genetic diversity in Maine, Vermont, New Hampshire, and New York, characterize microsatellite diversity, compare populations across the regions and between states, and attempt to identify borders to diversity from natural or man-made boundaries.

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Necropsy News (continued from page 4)

Testing bobcats for the presence of gammaherpes-virus and parvovirus

To better understand the frequency and potential impact of viral infections on bobcat population health, St. Michaels College will be conducting an ongoing molecular epidemiological study of two viruses in the Vermont bobcat population. Through the collection of samples from trapped and hunted bobcats, they will identify the presence of viral DNA from gammaherpesvirus and parvovirus in wild Vermont bobcat tissue samples, estimate the relative prevalence of viral infection, test for associations with bobcat age, sex, and location and characterize levels and types of genetic diversity in viral genomes.

Take the High Road

Many forms of hunting and trapping are being challenged by members of the public—many of whom have limited exposure to these activities. Therefore, it is critically important that participants put their best foot forward when engaging in, or advocating for, these pursuits.

Hunters and trappers have a history of promoting conservation not only through their generous funding of conservation work but also through their commitment to species and habitat protection and the respect they show for the animals they harvest. Today's sportsperson must take the high road and continue to be leaders in conservation as well as demonstrate regard for the people who may disagree with them.

It is easy to grow defensive in the face of a blatant attack, but it is counter-productive to cave to the baiting. Continue to take the lead in on-the-ground conservation efforts, advocate and show respect for wildlife and the habitats they depend on, follow the law, and maintain the highest ethical standards—the future of furbearer conservation depends, at least in part, on our actions going forward.

Permanent License Holder But Not a Trapper?

Those of you who hold permanent combination licenses but are **not** trappers may wonder why you get the Annual Trapper Reports in the mail. Trapping might have been inadvertently added to your license without your knowing of it, most likely because the clerk forgot to ask or just didn't know to ask if you wanted it and checked the box. If this is the case, please call or email:

Mary Beth Adler 802-289-0629 | marybeth.adler@vermont.gov or

Melissa Currier 802-289-0613 | melissa.currier@vermont.gov

We'll have trapping removed from your license and take your name off our mailing list.

AFWA—A Wealth of Furbearer Management Resources (continued from page 1)

Association represents its state agency members on Capitol Hill and before the Administration to advance favorable fish and wildlife conservation policy and funding and works together with member agencies to ensure furbearer management has a clear and collective voice.



AFWA staff, working with member agencies, including the Vermont Fish & Wildlife Furbearer Management Team, have developed a strategic plan for effective communication about regulated trapping and furbearer management, conservation briefs and science briefs that underscore the value of modern, regulated trapping, the selectivity of traps, and the sustainable use of fur, and a variety of resources for trapper education.

Most notably for furbearer management, AFWA developed the *Best Management Practices (BMPs) for Trapping in the United States* with the cooperation and participation of many state wildlife agencies, expert trappers, and trapper organizations. The BMP program is an effort to improve regulated trapping by evaluating trapping devices and techniques used for the capture of furbearers and educating those who use traps about the most humane, safe, selective, efficient, and practical devices.

The BMPs and many other projects have helped to further the AFWA goal "to maintain the regulated use of trapping as a safe, efficient, and acceptable means of managing and harvesting wildlife for the benefits it provides to the public, while improving the welfare of trapped animals," in Vermont and throughout North America.

Check out the wealth of resources available at the AFWA Furbearer Management webpage: fishwildlife.org/afwa-inspires/furbearer-management



Donations made to the Vermont Habitat Stamp in 2021 totaled \$239,163. An 18 percent increase from 2020, it was the highest amount of contributions since the program began in 2015.

Helping Landowners Improve Wildlife Habitat

Projects in 2021 included working with private landowners to improve habitat for birds, pollinators, and

Wildlife biologists with the department

other wildlife. Department biologists worked with 16 different partner organizations to provide landowners with the best possible technical assistance available and delivered interactive workshops, trainings, and other resources.

These partnerships also allowed the department to complete a variety of on-theground projects in towns like Charlotte and Hinesburg to improve shrubland and streambank habitat by removing large amounts of invasive plants, planting native shrubs and trees, and collecting native seeds for future songbird and pollinator habitat enhancement.

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Habitat Stamp (continued from page 6)

Using Habitat Stamp funds, a collection of informational signs describing the habitat improvement work being done was installed at the Hinesburg Town Forest to form a self-guided walking tour for visitors.

Restoring Aquatic Habitat

Efforts continued to reconnect streams and rivers by removing dams and upgrading culverts to increase the resilience of wild fish populations and other aquatic organisms. The department supported the Connecticut River Conservancy's efforts to implement four dam removals in the lower Connecticut River watershed and the Pelletier Dam on the North Bretton Brook in Castleton will be removed using Habitat Stamp donations. Removing the dam will allow trout to access 37 miles of habitat.

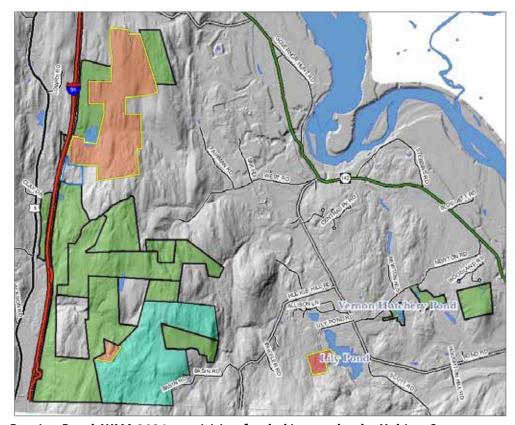


The department's fisheries biologists worked with partners to restore natural forest communities in riparian areas along Vermont's streams and rivers by protecting and restoring trees to shade and feed fish, filter pollutants, and stabilize streambanks. An experimental tree planting was designed and implemented on the Otter Creek WMA to test forest restoration in the presence of beavers.

Caring For Our Wildlife Management Areas

The Habitat Stamp is essential for the stewardship of the department's 100 Wildlife Management Areas (WMAs). In 2021, Habitat Stamp funds were used to control invasive plants, to maintain forested openings, to mow grasslands for improving bird habitat, and to restore riparian habitat by planting native trees and shrubs. The funds were used to match federal Recovery Land Acquisition Grant funds to add 446 acres to the Roaring Brook WMA. This land supports the state and federally endangered northeastern bulrush and long-eared bat, along with a rare black gum swamp, deer winter habitat, vernal pools and important oak and beech that provide valuable food for many wildlife species.

You can help protect Vermont's wild places by donating when you purchase your hunting or fishing license or by visiting our website to donate online: vtfishandwildlife.com/vthabitatstamp



Roaring Brook WMA 2021 acquisition funded in-part by the Habitat Stamp.

Land added to the WMA

Existing WMA Property

Vernon Town Forest

Castleton, opening up 37

miles of habitat for trout.

Furbearer Harvest and Effort Data

The furbearer team thanks you for your efforts to provide the critical data necessary to monitor the health and sustainability of furbearer populations in Vermont. Below are the harvest numbers for every furbearer species based on your trapper mail survey reports and the blue card returns (otter, bobcat, and fisher). We use this information both to monitor changes in harvest levels and to compare the harvest with the effort expended (number of traps X number of nights) by trappers. This is very important when monitoring wildlife populations so we can know what factors may be most significantly affecting the harvest.

Summary of annual trapper mail survey derived estimated* furbearer harvests, 2011-12 through 2020-21.**

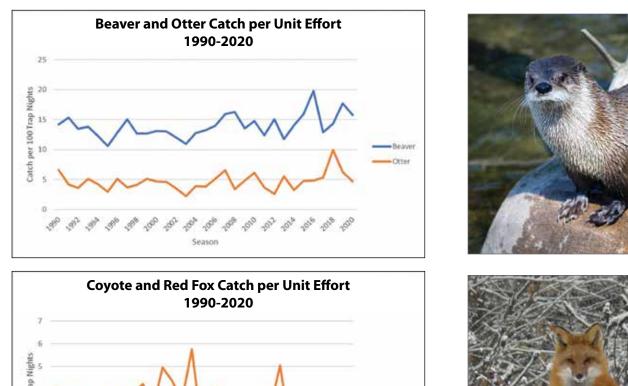
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Season		2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	10-year Average
Mink		601	749	748	800	299	212	168	95	125	184	398.1
Raccoon		850	1,044	1,004	953	648	382	504	442	273	361	646.1
Muskrat	E	4,222	10,770	8,737	9,053	8,199	2,490	1,558	1,291	686	716	4,772.2
Skunk		245	385	218	218	241	204	106	183	89	105	199.4
Opossun		99	139	61	214	79	63	109	56	27	66	91.3
Weasel		26	340	36	92	11	72	14	54	18	46	70.9
Coyote	11	494	612	726	626	462	378	511	357	298	352	481.6
Red Fox	570	184	229	306	270	181	126	221	118	81	130	184.6
Grey Fox	M	109	175	130	81	69	31	60	51	26	43	77.5
Bobcat	R	55	80	116	55	51	54	44	39	117	111	112.7
Fisher	Æ	407	588	359	432	235	213	190	239	198	179	312.2
Otter		234	269	246	154	155	113	111	73	85	90	156.7
Beaver		1,472	2,125	2,139	1,504	1,789	1,198	865	776	725	844	1,343.7
Total Es Harvest	timated	9,065	17,526	14,922	14,509	12,489	5,608	4,512	3,864	2,748	3,227	88,470

^{*} Total reported harvest multiplied by correction factors until 2017-18 season when figures represent those reported from the mandatory survey.

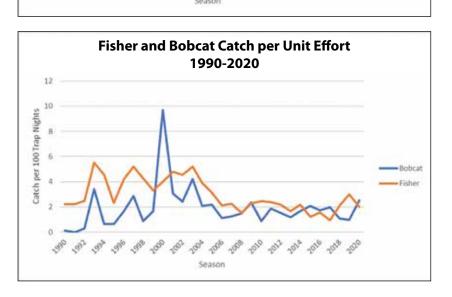
^{**}Fisher, otter, bobcat data are from pelt tagging records.

The Fish & Wildlife Department monitors furbearer population trends through the annual collection and assessment of trapper derived Catch per Unit of Effort (CPUE) data. It is an indirect index of population trends that helps biologists track the growth or decline of furbearer populations over time. This index is universally used across the world to measure capture rates for trapping, and is similarly used for other applications including wildlife field camera surveys, hunter sighting rates, etc.

In the case of trapping, CPUE is the average number of animals trapped per 100 trap nights, where trap nights equals the number of traps set multiplied by the number of days they were deployed (e.g. 5 traps X 6 days = 30 trap nights). The graphs below show the trends from 1990 to 2020.







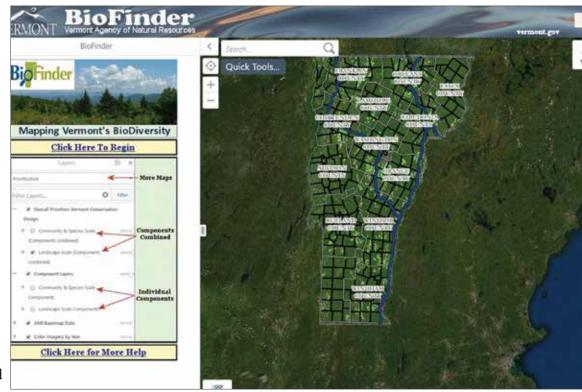
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020



REMINDER – Annual Trapping Reports are due May 15, even if you did not trap!

Vermont Conservation Design—A Roadmap For The Future

For the past 10 years, the Vermont Fish & Wildlife Department has led an effort with a wide group of partners to develop a map that identifies high priority large forest blocks and connecting corridors in order to ensure an ecologically functional landscape into the future. A connected landscape with large intact forest blocks is more likely to sustain clean air and water, store carbon to slow climate change, and protect against severe floods. It will also allow plants and animals to move across the state and region and adapt to climate change as well as support numerous social and economic values, including



outdoor recreation, the forest products economy, and the natural beauty that draws people to Vermont.

The Vermont Conservation Design map is a science-based vision to sustain the state's valued natural areas, forests, waters, wildlife, and plants for future generations. The full range of conservation tools will be needed to achieve this vision. Voluntary stewardship and management of private lands, with public support and incentives, will be essential to success.

For more information, visit: anr.vermont.gov/node/1182



Your Furbearer Management Project Staff!

We are here to serve the wildlife resource and you! Please don't hesitate to contact us with questions or comments.



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

Welcome Tyler Brown

Many of you have already met Tyler Brown. He has been employed as a seasonal technician with the department for the last 10 years in both the fisheries and wildlife divisions. For the past six years Tyler has been working with private landowners, Vermont Agency of Transportation, town road crews, and on public lands to mitigate human infrastructure/ beaver conflicts with the goal of protection and maintaining beaver-created wetland habitats.

beaver-created wetland habitats.

In January of this year, we were able to transition Tyler to a year-round limited-service employee. Tyler will continue to work to maintain wetland habitats and mitigate human/beaver conflicts, but he will also take on some new responsibilities including working with private landowners to improve wildlife habitat and protecting critical wildlife habitats through Act 250.

Tyler is an avid outdoors person who spends his off time out in the woods. Please welcome Tyler when you see him. His commitment to wildlife conservation and his expertise has been and will continue to be a great asset to the department.

