



West Virginia Division of Natural Resources

## Furbearer Management Newsletter

Fall/Winter 2018

Wildlife Resources Section

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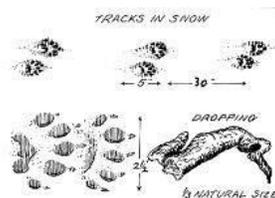
By now, most of you are getting prepared for the coming trapping and furbearer hunting seasons. **Take some time to look through this newsletter and see if you can assist with any of the new furbearer research projects that are getting underway.** All research and surveys being conducted by WVDNR are designed to assure stability of populations of furbearer species and the future of your sport. Please direct correspondence to: Rich Rogers, WVDNR, 1 Depot St., Romney, WV 26757 [Rich.E.Rogers@wv.gov](mailto:Rich.E.Rogers@wv.gov).

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### Fisher Study at WVU

As noted in the previous issue of this newsletter, WVDNR is participating in a project with West Virginia University to determine the genetic health of our state's fishers. Graduate student, Caroline Harms, will be reaching out to trappers to donate a piece of hide or other tissue from trapped fisher carcasses over the course of the next two trapping seasons. She will provide materials and envelopes for mailing samples and will be contacting successful fisher trappers from the last as well as this coming season. DNA from tissue samples will help determine if there are smaller, distinct fisher populations which may benefit from more intensive management. It will also help determine how well we can expect fishers to adapt to changing habitats and other environmental conditions in the future.

If you have a pelt or carcass from last year or obtain one during the coming season, contact Caroline Harms at [ceh0038@mix.wvu.edu](mailto:ceh0038@mix.wvu.edu), Dr. Amy Welsh at (304)293-0718, or Rich Rogers at (304)822-3551.





certificates will be mailed at a later date. Trapped animals will not count against the season bag limit. A maximum of 50 bobcats per year will be collared with WVDNR reserving the right to refuse animals depending on location, condition, and age of the cat. Otherwise, collared or ear tagged bobcats are legal game and WVDNR asks that trappers and hunters notify them if one is taken or released.

Past successful bobcat trappers will be receiving information in the mail regarding this project. See the flyer below for more details on trapping for the project:

## ATTENTION EXPERIENCED BOBCAT TRAPPERS!

The **West Virginia Division of Natural Resources** and **West Virginia University** are asking for help trapping bobcats to study home range and habitat selection

Counties that the bobcats **MUST** be located in:

- **Berkley**
- **Grant**
- **Hampshire**
- **Hardy**
- **Jefferson**
- **Mineral**
- **Morgan**
- **Pendleton**
- **Pocahontas**
- **Randolph**
- **Tucker**

DNA will be taken to confirm location of bobcat

- All bobcats **MUST** be trapped during the legal trapping season for 2018 & 2019
- All bobcats will be fitted with a GPS collar and released on site
- **We reserve the right to refuse animals based on location, condition & age of cat**
- They will **NOT** count against your season bag limit if released
- We are only collaring a **MAXIMUM** of 50 bobcats per year



A \$100 gift card will be given for each bobcat that is used

Trappers are asked to contact one of the number listed below ASAP when a bobcat is caught,

\*Kirsten Belcher- (304)293-0050

Rich Rogers- (304)822-3551

District 1 office- (304)825-6787

District 2 office- (304)822-3551

District 3 office- (304)924-6211

\* Contact person for weekends

For more information,

email [kmbelcher@mix.wvu.edu](mailto:kmbelcher@mix.wvu.edu) or call (304)216-8482 and ask for Kirsten.

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## Otter Research to Begin – REWARD! For Carcasses

The WVDNR will be collecting otter carcasses for the next three trapping seasons to determine changes in yearly survival, reproduction, and age class distribution since the opening of the modern-day trapping season in the last decade. Trappers will receive a **\$20 gift certificate** for use at certain stores for each useable otter carcass turned in. Biologists would like to collect at least 50 otter carcasses per year during the course of the study. Data will be used to update the otter population model which helps monitor health and stability of West Virginia’s otter populations. It will in turn let biologists know if an increase in trapping bag limit is defensible.

Otters may be delivered to a WVDNR District Office, Elkins Operations Center, or arrangements may be made to have the carcass picked up by calling your district office.

Contacts are listed below:

District 1 - Farmington	Steve Rauch	304 825-6787
District 2 - Romney	Rich Rogers	304 822-3551
District 3 - French Creek	Tyler Evans	304 924-6211
District 4 - Beckley	Todd Dowdy	304 256-6947
District 5 - Alum Creek	Kem Shaw	304 756-1023
District 6 -Parkersburg	Jeff McCrady	304 420-4550
Elkins Op Center	Keith Krantz	304 637-0245

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## New Spotted Skunk Research

In cooperation with Frostburg State University, WVDNR began trapping and collaring spotted skunks in Hampshire and Pendleton Counties this past winter. Graduate student Kendyl Hassler is studying home range, movements, and natural history of the skunks to add to the current sparse body of knowledge regarding this species. In the past few decades, spotted skunk densities have declined and distribution within states has contracted. The reason for the decline is unknown, but may be linked to changes in habitat,

changes in uses of agricultural pesticides and herbicides, or competition from other species. While historically common at lower elevations, it appears that skunks are currently limited to higher elevations in rocky and brushy woodland habitats.

Skunks were caught in live traps at pre-baited sites, fitted with radio collars, and released after physical data were collected. One male skunk travelled several miles and crossed a major river in a relatively short period of time before returning within a month. It was noted that there were no bridges in the area, indicating that the skunk swam the river. Some of the skunks have travelled several miles in a single day. The reason for such movements is unknown but may be tied to searching for mates. These long movements may be exposing the skunks to increased risk of predation with owls being a probable major predator. If predation is a limiting factor, poor or changing habitat is very likely a major problem for this species.



Biologist radio-tracking collared skunks.



Fitting skunk with a radio collar.

Thus far, the skunks seem to prefer rock outcrops for den sites and have been caught on camera carrying salamanders and millipedes, presumably for food. Other den sites include root balls and, interestingly, tree holes in live or dead standing trees well above ground level. Spotted skunks can evidently climb quite well. Some of the used tree holes have been over 15 feet up the bole of the tree.

Currently, West Virginia is one of two states that still allows a trapping harvest of these animals with relatively few taken each year. No pelts have shown up at the West Virginia Trappers Association fur sales in the past several years. West Virginia appears to be at the northern edge of the specie's range. Intensive searches across the Potomac River in Maryland have yielded no evidence of their existence, and only one has been recorded in Pennsylvania in the recent past.



Collared female skunk in Hampshire County during spring of 2018.

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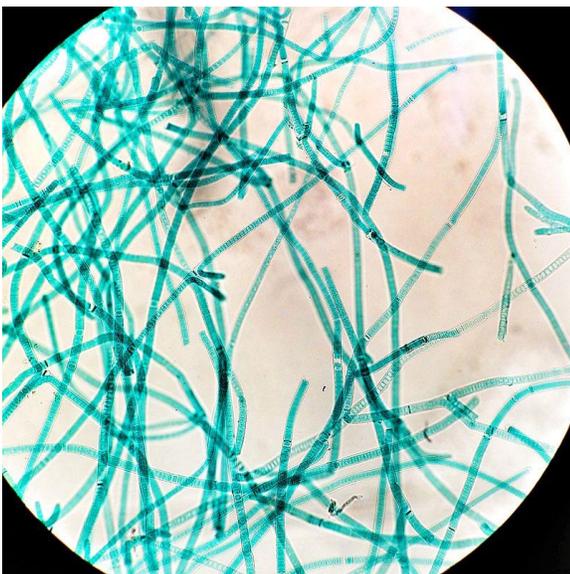
## Muskrats and Cyanobacteria

Over the next two years, WVDNR will be trapping muskrats in the eastern panhandle to determine if cyanobacteria blooms, otherwise known as algal blooms, have been affecting muskrat health and survival. Cyanobacteria are photosynthetic bacteria which exist in moist soils and open fresh and salt water. They have been commonly known as blue-green algae due to their color and consistency in water. Cyanobacteria growth is most apparent in waters that are calm with rivers experiencing blooms during times of low water and high temperatures. Even the slightly elevated yearly temperatures that have been attributed to natural climate change have been suspected as causing increasing frequency of cyanobacteria blooms globally. High phosphorus and nitrogen concentrations in water have also been linked to algal blooms, which may implicate fertilizers and other man-made chemicals.





Sampling algal bloom.



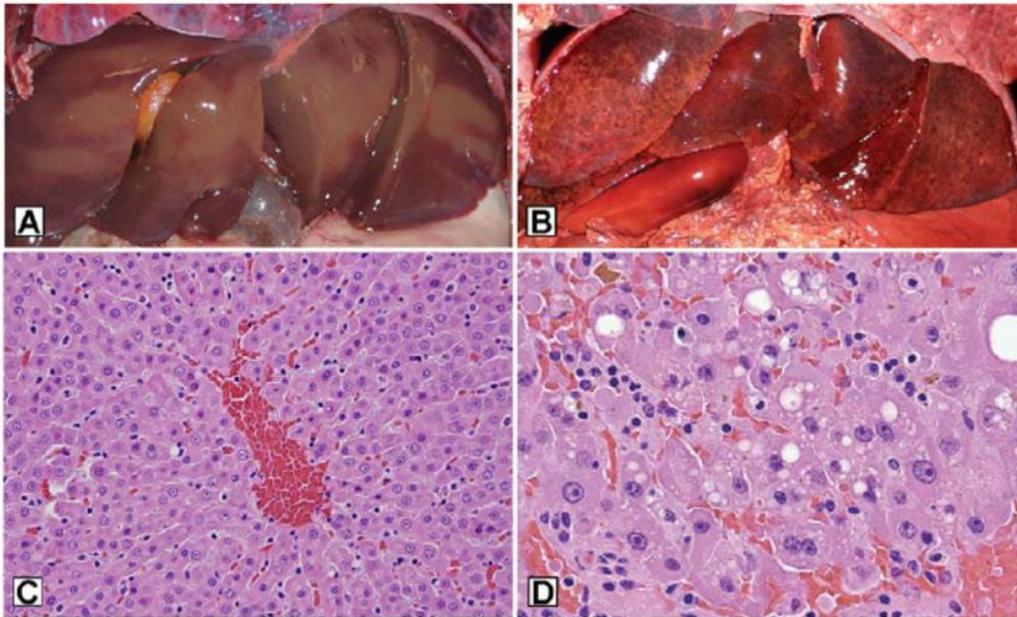
Microscopic view of filamentous strands of Cyanobacteria.

During blooms, cyanobacteria are able to outcompete beneficial algae and diatoms. These blooms deplete oxygen in the water and result in high concentrations of cyanotoxins produced by cyanobacteria. Many of these compounds are extremely toxic to other living organisms, and certain cyanotoxins have recently been identified as endocrine disruptors. Endocrine disruptors are chemicals that interfere with normal development and function of hormones in the body.

In the early 2000s, algal blooms became more common in the South Branch River watershed at the same time as an increase in fish kills. It was also discovered at that time that many of the sampled bass exhibited intersex characteristics – male fish producing egg cells in their testes. Microcystin, one of the most common and readily detected cyanotoxins, was found in higher than normal levels in tissues of sampled fish from the South Branch drainage. It has been hypothesized that there may be a link between the two. It is also possible that cyanotoxins, along with other factors, may be one of the factors negatively affecting muskrat populations as well as those of other organisms.

WVDNR will be collecting close to two hundred muskrat carcasses from the eastern panhandle over the course of the next two years to test for the presence of microcystin in

muskrat livers. Microcystins are hepatotoxic, meaning they cause liver damage in animals. Even if the toxin is not detected, evidence of damage to the liver will be detectable under microscopic examination. If microcystin or damage are detected in a significant number of livers, it may be necessary to expand the study area and compare results to those found in other states.



Normal sea otter liver (A). Lesions due to microcystin damage (B). Results will be similar in muskrats.

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## Trap Tagging Requirement Law Change

It is now legal for trappers to use their WVDNR ID number on their trap tags instead of name and address, if they so desire. This is the same number hunters and trappers use to check game on the electronic checking system. Trappers are still free to use their name and address on tags as usual. The change is the result of a WVDNR recommendation attempting to protect the identity of trappers engaging in legal activities from individuals who oppose trapping. Law enforcement will still be readily able to identify individuals by the ID number. Legislators were reminded that individuals illegally trapping generally do not place tags on their traps.

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## Bobcat Occupancy and Density Estimation in West Virginia

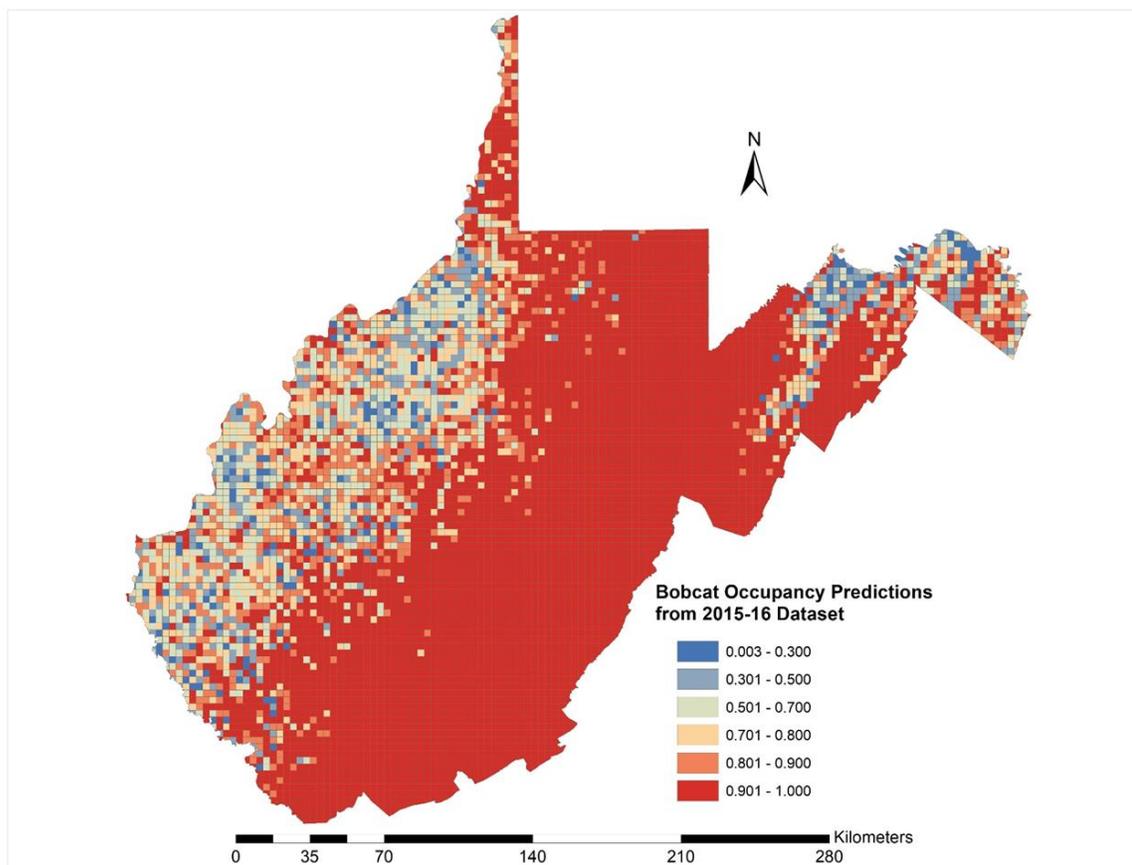
The first part of the West Virginia bobcat study is now fully completed. Dr. Thomas Rounselle presented his results this past July at West Virginia University. The study involved placement of hair snare cubbies, in 2015 and 2016, throughout the state to determine bobcat abundance. Hair samples were collected on brushes as animals passed through the cubby and were analyzed microscopically and genetically to identify species and individual animals. Data were then used to determine probability of occupancy and densities of bobcats in the state.



What is the difference between simple distribution and occupancy modeling? To determine simple distribution, one collects data on occurrences of animals in specific areas. Either the animal was detected or it wasn't. However, not being detected does not necessarily mean that the species is not there. Enter occupancy modeling. Occupancy modeling uses known detections and correlated habitat and land features to determine the probability of detecting an animal in an area. This is then used to calculate abundances and densities of a species in a given area.

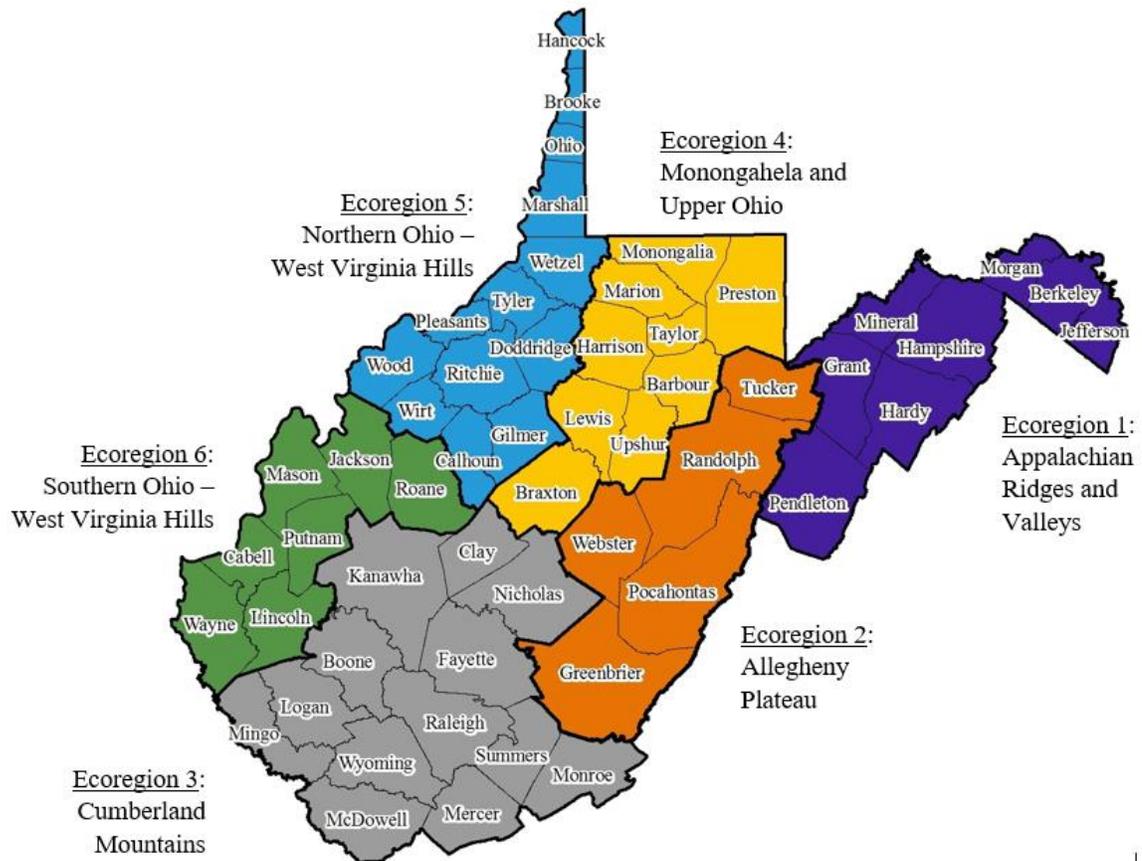
Major findings of the study are as follows:

- Of the 4,122 hair samples collected over the course of the study, 378 (9.2%) were identified as bobcat. This is a high rate of success when compared to other hair snare designs.
- Distance to minor paved roads had a positive influence on probability of detecting bobcats as did year of study. Year of study may have been indicative of mast conditions and effects of such on prey species and juvenile survival.
- Elevation had a positive influence on whether an area was probably occupied. Road density, percent of area in forest, and linear distance to interstate highways all negatively influenced occupancy.
- Probability of bobcats occupying an area ranged from 6% to 100% with an average of 83% for the whole state.



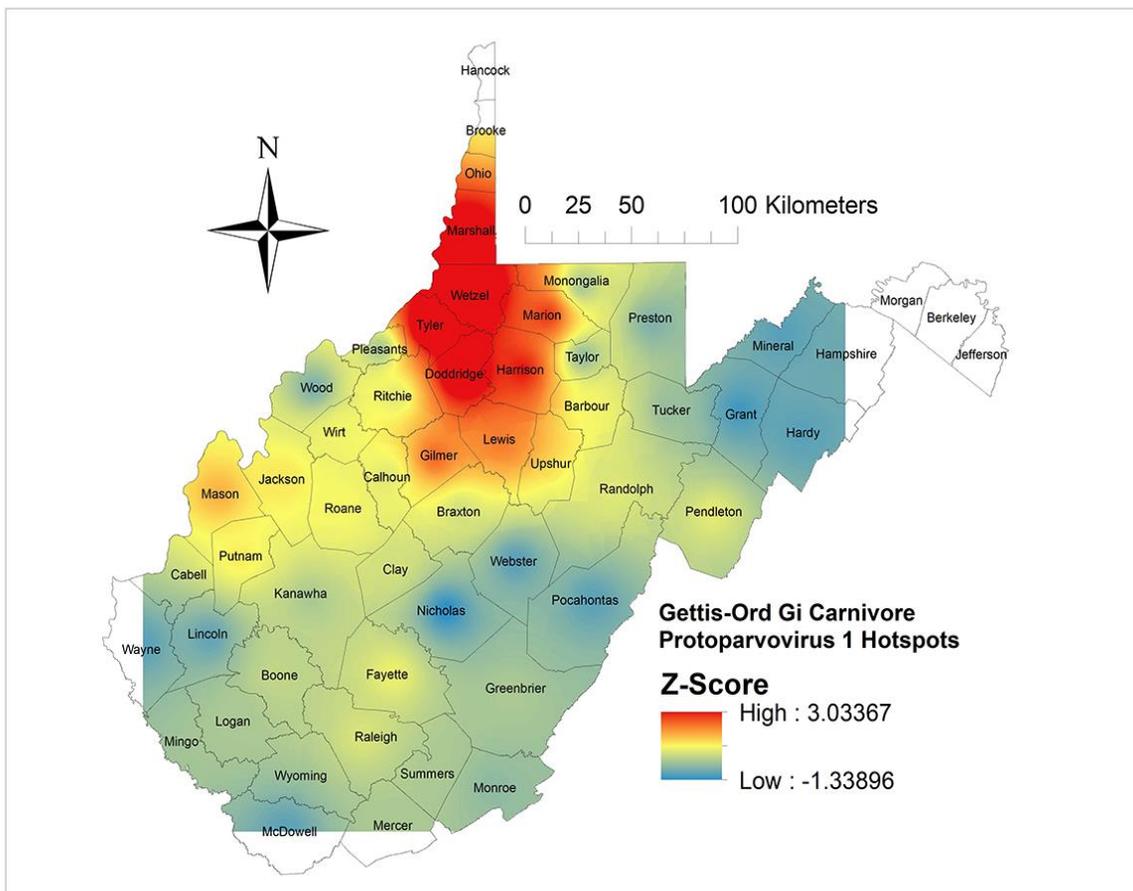
The red shaded area represented the best bobcat habitat and highest probability of occupancy as predicted by the model.

- DNA/genetic analyses indicated that there are no significant barriers to gene flow and that bobcats in the state are very similar to one another genetically. This may be the result of the population still recovering from record lows in the 60s and 70s. Since there are no distinct and separate genetic populations in WV, bobcats may still be managed as a single population.
- A model to estimate density yielded an estimate of approximately 9,549 individuals plus or minus 2,587 on either side. This estimate is very close to the estimate obtained by the current model used by the WVDNR. Harvests typically are never above 20% of this and allow for growth or stability of the current population.
- Highest densities of bobcats are in Ecoregion 4.



- Sites with greatest densities of bobcats are located adjacent to early successional habitats. This is most probably related to higher densities of prey species in these areas. Heavily forested areas often have low densities of bobcats.

- 528 bobcats were tested genetically for presence of canine parvovirus and feline panleukopenia virus. Of these, 17.6% tested positive. Of those testing positive, 96.9% were positive for canine parvovirus. Only 3.1% were positive for feline panleukopenia. Highest number of positive animals came from the northwestern part of the state. This also happens to be an area with higher densities of raccoons and it is suspected that raccoons may be the reservoir for this group of diseases.



Red color indicates higher numbers of bobcats testing positive for parvoviruses.

Overall, the study was a success and yielded some important information. West Virginia's bobcat population is healthy and well able to withstand the current level of harvest with no net population change. If the next part of the study - described in a previous section - indicates that home ranges are smaller than suspected, this would indicate that our population density estimates are very conservative and we may be able to consider an

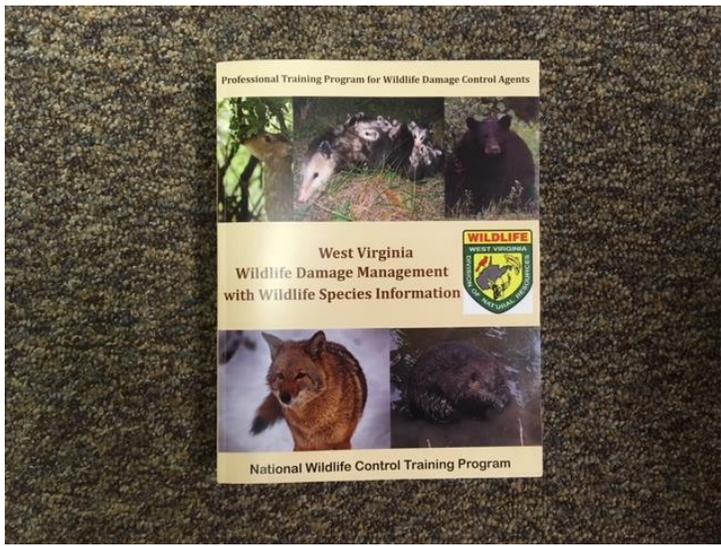
increase in bag limit in the future. Until then, increasing the bag limit at this time is not advised.

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## New Wildlife Damage Control Agent Manual Available

A new book, *West Virginia Wildlife Damage Management with Wildlife Species Information*, is now available for wildlife damage control agents (WDCAs) in the state. This is a comprehensive treatise which includes chapters on all aspects of the wildlife damage control business in West Virginia. This book is specific to West Virginia and includes a full chapter on state law and individual chapters dedicated to common species encountered by WDCAs in the state. It was produced in cooperation between WVDNR and the National Wildlife Control Training Program and is the official replacement for the now unavailable *Prevention and Control of Wildlife Damage* book previously recommended for use by WVDNR for WDCAs. The book is available for \$49.99 from <http://WildlifeControlTraining.com>.

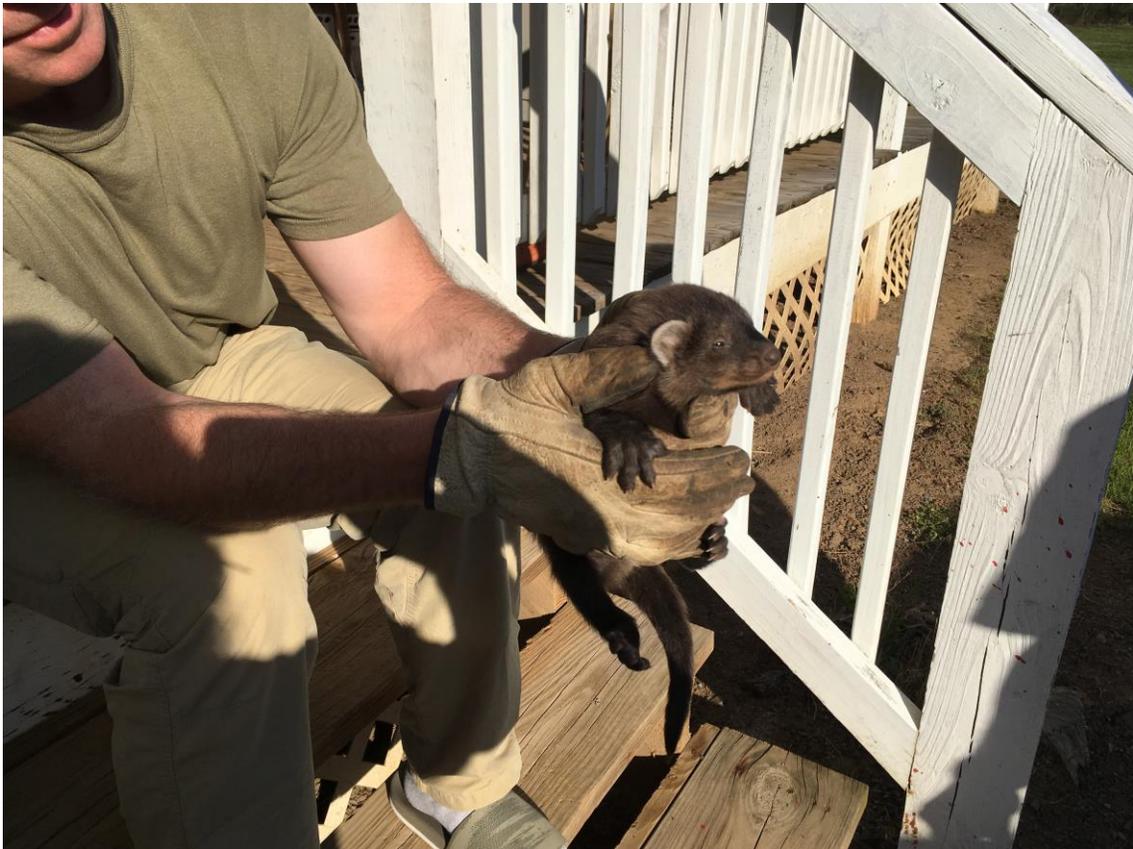
An West Virginia online training and certification program will be available sometime this fall. The course costs \$200 and will be found at <http://store.nwctp.com>. It will be self-paced and includes 13 core training manual chapters and 30 species accounts as printable files. This course will prepare users for testing administered by WVDNR required to receive WDCA licensing in West Virginia.



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## Fisher Kits to French Creek

This past summer a logger in Hampshire County unknowingly and innocently cut down a tree containing a den of young fishers. He contacted a local Wildlife Damage Control Agent who got in touch with WVDNR to pick them up. Three healthy young fishers were picked up and delivered to the French Creek Game Farm for use in their live animal display. Tyler Evans, wildlife biologist in charge of the Game Farm, said they were needed to replace an older fisher which was approaching the end of its lifespan.



One of three young fishers from Hampshire County before being sent to French Creek.

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## Links

West Virginia Division of Natural Resources

[www.wvdnr.gov](http://www.wvdnr.gov)

West Virginia Trappers Association

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

Guide to State Game Depts.

[www.identicards.com/links/statednr.html](http://www.identicards.com/links/statednr.html)

Assoc. of Fish and Wildlife Agencies

Furbearer Resources

[www.fishwildlife.org/furbearer.html](http://www.fishwildlife.org/furbearer.html)

National Trappers Association

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

Fur Takers of America

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

Conserve Wildlife

[www.conservewildlife.org](http://www.conservewildlife.org)

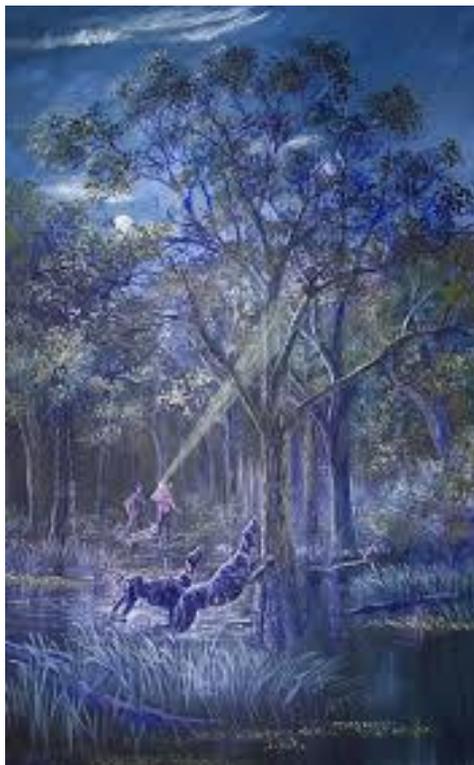
Furbearers Unlimited

[www.furbearers.org](http://www.furbearers.org)

CITES

[www.cites.org](http://www.cites.org)

## Take a kid hunting or trapping!



**2018-2019 TRAPPING REPORT FORM**  
**West Virginia Division of Natural Resources**  
**Wildlife Resources Section**

Read instructions on back side before completing this report.

Name *(It is not necessary to include your personal information)* \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_ Phone \_\_\_\_\_

SPECIES	County:									
	# OF DAYS TRAPPED	# KILLED								
Beaver										
Bobcat										
Coyote										
Fisher										
Gray Fox										
Mink										
Muskrat										
Opossum										
Otter										
Raccoon										
Red Fox										
Spotted Skunk										
Striped Skunk										
Weasel										
Other:										

## INSTRUCTIONS FOR TRAPPING REPORT FORM

This is a voluntary report that will be used to help West Virginia Division of Natural Resources biologists collect more accurate data regarding trapping success and numbers of animals harvested each year.

1. Fill in your name and full address only if you wish to include this information.
2. Provide your phone number only if you would like to.
3. During the trapping season, fill in columns for # days trapped and # animals killed for **EACH COUNTY** that you trap during the legal trapping season. Two columns are provided for each county. Do not include animals that you release.
4. Use more than one sheet if you trap more than 5 counties.
5. Try to accurately record number of days trapped. If in doubt, give the closest approximation of number of days trapped.
6. Sign and date your data sheet before sending in to:

**Rich Rogers  
Trapper Survey  
West Virginia Division of Natural Resources  
1 Depot St.  
Romney, WV 26757**

7. If you have any questions, call Rich Rogers at (304)822-3551.
8. **Send all completed forms in by April 30 of each year.**
9. **DO NOT** include animals caught on Animal Damage Control licenses or on nuisance wildlife permits.