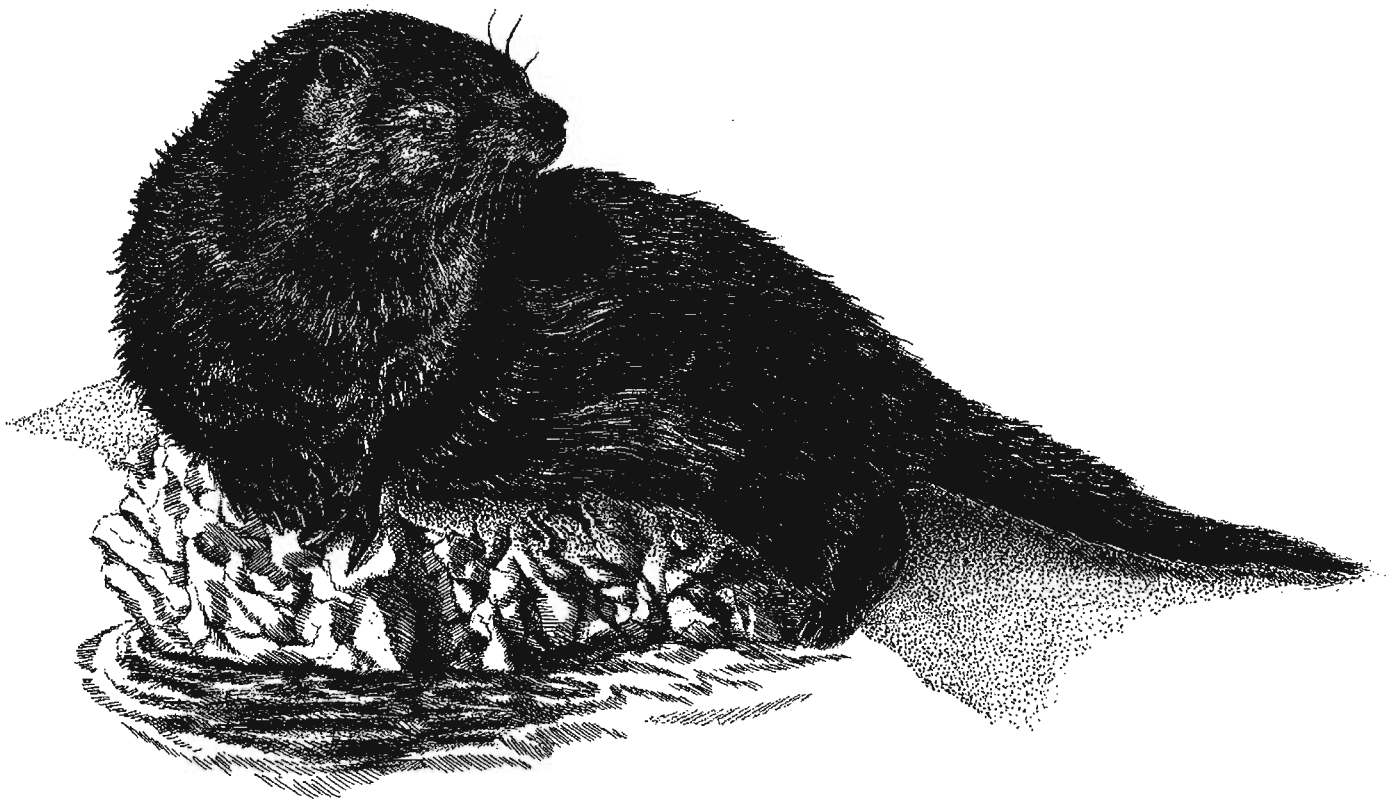
Furbearers of Ohio



A collection of activities compiled by the ODNR-Division of Wildlife

OHIO Project WILD

OHIO'S FURBEARERS

CONTENTS:

Part One: Ohio's River Otters. This section contains current biological and historical information on Ohio's river otters, as well as activities and content for teachers and students to use.

Part Two: Management of Ohio's Furbearers. This section contains information on trapping mammals in Ohio, as well as various points of view on consumptive and non-consumptive uses of wildlife. This information can be used by teachers as background for the following activities or it can be used by students as research to conduct debates in class or for reports. It is intended to be a starting point for students to explore and develop their own opinions about uses of wildlife in Ohio.

- Mink
- The Muskrat, Wild Cards
- Opossum – Life History Notes, Publication 96
- The Opossum, Wild Cards
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II. Activities
- **Project WILD Activity:** Tracks!
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III. Furbearers and Trapping
- Introduction to Furbearers and Trapping, Trapping and Furbearer Management Guide
- 2006-2007 Trapping Season Dates, Ohio's Trapping Regulations
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IV. Ohio Academic Content Standards and References
- Ohio Academic Content Standards for Science, Ohio Department of Education
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Part One: Ohio's River Otters

This section contains current biological and historical information on Ohio's river otters, as well as activities and content for teachers and students to use.

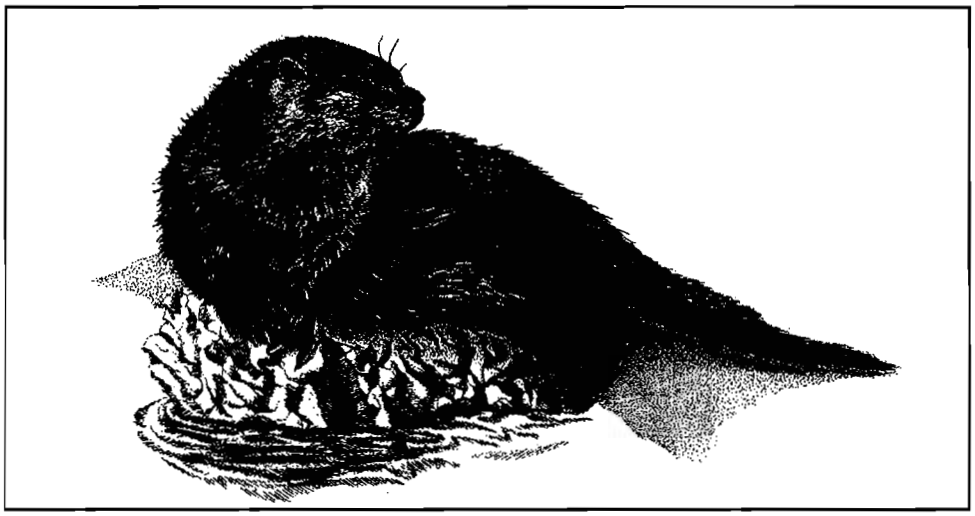
Background Information

ODNR Division of Wildlife

Life History Notes

River Otter

Scientific Name: *Lontra canadensis*



Publication 384
(R803)

Introduction

River otters were historically distributed throughout much of North America, excluding the frozen Arctic and the Southwest. Otters are native to Ohio, but were extirpated by the early 1900s. In 1986, the ODNR Division of Wildlife began a seven-year project to reintroduce the species to the state. Over this period, 123 otters were captured in Arkansas and Louisiana using modern foothold traps and were released in the Grand River, Killbuck Creek, Little Muskingum River, and Stillwater Creek. Since then, river otters have been sighted in nearly two-thirds of Ohio's counties and young otters or family groups have been seen throughout eastern Ohio.

Description

Otters are highly adapted for swimming, possessing a long, tapered body with sleek, short, dense fur. Its small head widens to the neck and shoulders. There are long, stiff and highly sensitive facial whiskers behind and below the nose that aid the otter in finding and capturing prey. Their teeth are like those of other carnivores-- adapted for grasping, grinding, shearing, and crushing. Their large feet are completely webbed. The tail is flattened and is well muscled; the tail is important in the animal's swimming ability and makes up about 50 percent of its total body length. Maximum length is reached at three to four years of age. Adult weight ranges from 11 to 33 pounds.

Habitat and Habits

Otters live in aquatic habitats--rivers, lakes, and marshes. Otters can live in both marine and freshwater environments. They prefer tributaries of major, unpolluted drainages where there is minimal human disturbance. Log jams and submerged trees provide resting and feeding habitat. Often dens are in abandoned beaver lodges. Aquatic habitat must provide an abundant amount of prey, such as slow-moving rough fish. Home ranges are used throughout the year and can be large and linear (5 to 30 square miles). During the breeding and rearing season the range is much reduced for females.

Otters are generally nocturnal (active at night) or crepuscular (active at dawn or dusk), although diurnal (daytime) activity is not uncommon in undisturbed areas. River otters are often seen in family groups in the summer and early fall.

Reproduction and Care of Young

Otters usually reach sexual maturity at two years of age. The river otter's reproductive cycle involves delayed implantation of the fertilized egg, an arrested period of development and embryo growth. This process is not fully understood. Delayed implantation results in a gestation period of 290-380 days.

Breeding occurs in early spring following the birth of a litter. Newborn pups are silky black, blind, toothless, and helpless. The pups usually weigh four to six ounces and are 8 to 11 inches long at birth. They grow rapidly and emerge from the den at two months of age. Young eat

solid food at this age as well; however, they are not weaned until they are three months old. Litters are cared for by the female otter.

Young otters are self-sufficient by the time they are five to six months, but the family group remains intact for at least seven or eight months or until just prior to the birth of a new litter. Yearling otters can disperse up to 20 miles or more from where they were reared.

Management Plans

Otter releases are complete now that the Division of Wildlife has met the Strategic Plan goal of establishing reproducing populations in suitable habitats. The Division continues to conduct extensive research and monitoring programs to ensure otters remain a healthy part of Ohio's heritage, and current management programs are based on the best biological information available. Otter populations are monitored using many different methods, including a helicopter snow-track survey, a bridge-crossing survey, and public observation reports.

Viewing Opportunities

The chance to observe river otters increasing every year as the population continues to grow. Although gregarious in behavior among others of their species, otters generally avoid contact with humans; thus, most sightings are accidental. The best opportunities to see otters, their tracks or other sign in Ohio are at the Grand River, Mosquito Creek, Pymatuning Creek, Chagrin River, Killbuck Creek, Stillwater River, Little Muskingum River, and their tributaries.

At a Glance

Mating: Monogamous

Peak Breeding Activity: March - April

Gestation Period: 290-380 days, including delayed implantation

Young are Born: February-April and are dependent on their mother. They generally leave the family group at 8-12 months of age.

Litter Size: 2-4 pups

Number of Litters per Year: 1

Adult Length: 38-58 inches, head to tail

Adult Height: 7-10 inches

Life Expectancy in the Wild: 10-15 years

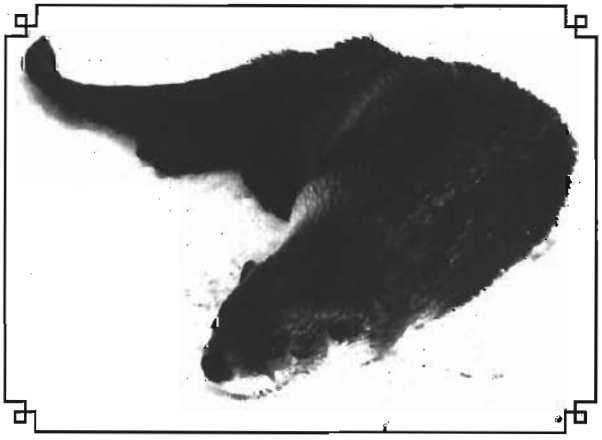
Migration Patterns: Year round resident; young go 10-20 miles to establish their own territories.

Feeding Periods: At night (nocturnal) or twilight (crepuscular)

Typical Foods: Fish, aquatic insects, crayfish, snakes, frogs, and to a lesser extent waterfowl and mammals.

Native to Ohio: Yes

The river otter was removed from the state endangered species list in 2002.



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Otter Parts

Objectives
Students will be able to
1) describe the characteristics of a river otter.
2) describe how each characteristic helps the otter survive.

Method
Students make a paper otter by cutting and pasting body parts together.

Grade Level
Elementary

Setting: Indoors

Materials
1. Copies of otter parts drawing (attached)
2. Scissors
3. Glue
4. Crayons or markers
5. Construction paper
6. Metal brads
7. Pipe cleaners
8. Pictures of otters

Key Vocabulary
Adaptation
Predator
Prey
Insulate
Water resistance

Subject Areas
Science
Art
Language Arts (extension)

From the Indiana Division of Fish & Wildlife's "North American River Otter Education Packet"

Background Information

Adaptations are body features or behaviors that allow an animal to be better suited to its environment and therefore have a better chance of survival. River otters have many physical adaptations that help them survive in their river habitats. The following is a list of features and their advantages to the otter:

Body Shape - torpedo shaped and streamlined to offer very little water resistance as they move through the water. This gives them added speed.

Fur - the back is covered with a thick, rich, dark brown fur that is light brown under the belly and silver gray around the face. Air trapped within the fine, hairlike inner fur underneath the coarse outer fur provides insulation and waterproofing.

Whiskers - are very sensitive. Used for detecting and capturing prey even in murky water through vibrations and touch. They are light or white in color.

Eyes - are small and located near the top of the head, almost even with the ears. This allows the otter to swim with only the top of its head above the surface.

Ears - are small and can be closed by a series of specialized valves to keep out water.

Legs and Feet - legs are short and powerful with large paddle like feet. The toes are completely webbed to help propel the otter when swimming.

Tail - is long and rudder-like for steering in the water.

Lungs - are capable of holding air for up to four minutes underwater.

Teeth - are sharp, canine teeth for shearing and tearing flesh. The otter is a carnivore.

Procedure

1. By assembling an otter, the students are going to learn about physical characteristics and adaptations which help otters survive. Present and discuss physical adaptations, defining the term and giving examples. Using pictures of animals familiar to the students, let them explain how these anima are adapted to their environment.

2. Have the students cut out all the otter body parts and glue the body and tail parts to a piece of construction paper. Ask them why a "torpedo shaped" body and "rudder-like" tail would be important adaptations.

3. Have the students attach feet and legs with brass brads. Ask why short powerful legs and large webbed toes would help the otter survive.

4. Add the head to the body and once the otter is complete discuss the other features that make otters such good hunters and swimmers — sensitive whiskers, ears that close, eyes near the top of their head, sharp teeth and lung capacity.

5. Discuss the otter's fur. How does it insulate the otter? Discuss the terms insulate and waterproof. Otters have two layers of fur; thick fine inner fur and course outer fur.

6. Have students color their otters while looking at pictures of otters they have found at the library or from other sources. You can also use colored paper or felt to make the otters.

7. When the students have finished their otters, ask them to share their otters and describe at least one adaptation.

Extension/ Evaluation

1. Bag an Otter

Collect the following items in a bag. Students can work in groups or individually as they take an item out of the bag, tell what part of an otter the item represents, and explain how that part helps the otter to survive.

White pipe cleaners -	whiskers
Balloon-	lungs
Rudder or steering wheel -	tail
Flippers or paddles -	feet
Nose or ear plugs or corks -	specialized valves
Periscope -	eyes
Submarine -	body
Scissors -	teeth

2. River Otter Advertisement

Working in small groups, have students design an advertisement to express their understanding of otter adaptations. Students can compare otters to automobiles. For example:

Make - Otter
Model - River Otter
Specifications - Rudder-like steering for quick moves. Torpedo body style for easy gliding. Sensitive facial whiskers for quick reactions. Specialized fur for energy conservation. Two tone coloring. Travels on land and water. Shut off valves in nose and ears for touring.

GLOSSARY

Adaptation: the process of making adjustments to the environment. Wildlife may have physical adaptations (such as an otter's webbed feet which help it swim in rivers to catch food and escape danger), behavioral adaptations (e.g. some birds flying south for the winter so they can find food) or physiological adaptations (e.g. a chipmunk hibernating for the winter to conserve energy through stressful times). These adaptations help the animal survive in their particular habitat.

Insulate: (in animals). To prevent the passage of heat in or out of an animal's body by the interposition of some insulating material such as fur or fat.

Predator: An animal that kills and eats other animals.

Prey: Animals that are killed and eaten by other animals.

Water Resistance: Any liquid or gas exerts a resistance to any object moving through it due to friction between the liquid or gas and the surface of the object. This resistance is reduced with a streamlined object.

Attach tail here
front leg
rear leg
Attach head here

OTTER RETREAT

Adapted from "Riparian Retreat" in the Project WILD Aquatic Activity Guide.

Objectives
Students will be able to:
1) describe habitat for and food requirements of otters.
2) identify behavioral patterns of otters
3) state importance of quality riparian areas to otters.

Methods
Basic life requirements and habitat needs of otters are described through the use of a simulated field trip and art work

Grade Level
Upper elementary, middle school and high school

Setting: Indoors or outdoors by a stream

Materials:
Art materials:
crayons
poster board
markers, etc.

Key Vocabulary
riparian

Subject Area
Language arts
Art
Social studies
Science

From the Indiana Division of Fish & Wildlife's "North American River Otter Education Packet"

Background Information

Riparian areas are important and valuable in many ways. Riparian areas are the green areas of life found on the edges of water courses (streams, lakes, ponds, etc.). Conditions there support plant communities that grow best when their root systems are near a level of high ground water.

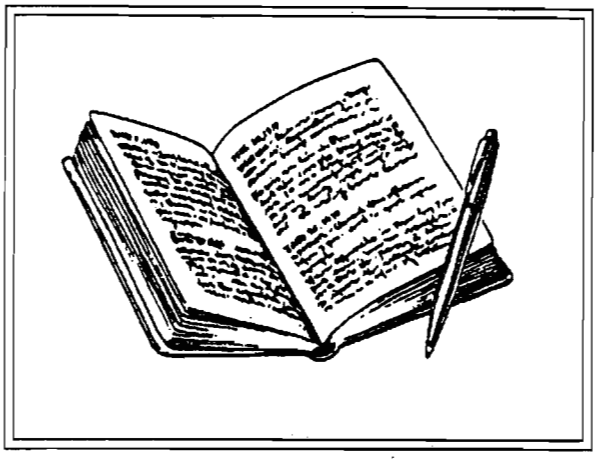
These riparian areas provide important cover for the river otter. Exposed root systems of trees that grow along river banks can provide potential denning sites for otters. They can also provide loafing sites and eating areas for the otter.

Procedure

1. Find out if anyone has ever been to a stream or riverbank. What was it like? What did the area look like? Were plants growing there? Was it hot or cool? Encourage students to talk and share descriptions of any area (stream or river bank) they may have visited or seen in pictures. Next ask if any students have seen a river otter. What was the otter doing? Where was it? Did you see it eating or see signs of food?

2. Discuss riparian areas and how important they are to wildlife and people. In order to learn more about these areas and one special animal which lives there, the students will need to close their eyes and visualize what you describe. They will picture these things from their experience and your descriptions. Invite the students to get comfortable, close their eyes and do their best to picture what they hear. (Read the section about simulated
field trips that appears in the appendices of the Project WILD guides for additional suggestions concerning the use of this teaching strategy.)

3. Read the following story to your students as they sit with their eyes closed.



It is a bright spring day and you are out for a walk. You are traveling through an old farm field which has grown up in tall grasses. The grass brushes along your legs as you approach a line of trees and bushes that mark the path of a stream. The sunlight plays on the many bright green colors of the new leaves. The young trees and bushes grow close together at the edge of the woods and you have to push them aside to enter the woods. As you move further into the woods, the trees become bigger and further apart. The shadowed ground is carpeted with wildflowers and the scent of spring is in the air.

All around you birds are singing and ahead of you a woodpecker is rat-a-tat-tatting on a tree to mark its territory. As you walk, you go down a wooded hill to the edge of a stream. There you find a trail that follows the bank of the stream. The path is a bit muddy and in places there are puddles. As you walk along the trail, you feel the cool breeze as it blows across the water and against your face.

As you step around a puddle, you notice some interesting tracks with which you are not familiar. They are almost as wide as your hand, have five toes, and appear to be webbed. You frown as a strange smell reaches your nose. It is a very musty fish smell. You look around, expecting to see a dead fish but see none. As you begin to walk away, you look to the edge of the path near the stream and notice some animal droppings. You realize that you have found the source of the strong smell! Looking closer, you see the droppings contain fish scales, crayfish parts, and small bones. An area almost two feet across is covered with the droppings.

As you notice a small path leading to the bank of the stream, you think about what type of animal could have left the tracks and droppings. Walking to the stream's edge, you observe the trail dropping over the bank and a well worn mud slide leading down to the water. Your curiosity is strong. You decide to sit quietly and wait, in hopes of catching a glimpse of this creature. As you look out over the stream, you see many logs crisscrossing in the water. There

are large trees overhanging the stream with roots sticking out over the water. You are wondering what it is like under the logs when suddenly you hear a splash among the logs. You look, but don't see anything. You hear loud crunching sounds coming from the area under a large tree's roots. There are logs blocking your view, but you sit patiently and wait. You hear the water ripple again, near the middle of the stream among some fallen logs. More crunching! You see the water rippling from the area of the roots. You are surprised to see an animal swimming in the stream. It dives under the water and stays under for a few seconds before it climbs on a log.

The animal is rather large, about four feet long from head to tail. It is dark brown, and appears black as the sun glistens off its beautiful fur coat. The fur covered tail is about a foot long, broad, flat at the base and tapers to a point. As the animal sits on the log, you notice it has a fish in its mouth. Its eyes are small and are located toward the top of its head, almost even with its small ears. While it crunches its morning meal, you observe it has whiskers.

Suddenly you notice another of these creatures. It comes out of the water and walks down the log toward the breakfast table. The two of them chatter playfully and grunt as they climb over one another. They slip in and out of the water, moving gracefully over, along and under the logs. They submerge, emerge, swim and play. They disappear for a short time before surfacing near the bank. One climbs a fallen tree to the top of the bank and disappears into the weeds. As you watch, you notice the other one leave the water and follow. Just as it reaches the top of the bank, the first one appears. It slides gracefully and quickly down the slide you noticed earlier! Soon after it hits the water and disappears, the second one slides

down and splashes into the creek. They make trip after trip; playing, sliding, climbing, swimming, eating. You catch yourself smiling and wishing you could join the fun.

As you prepare to sneak away, both animals emerge from the water. One has a large crayfish, the other, a frog. They disappear under the roots of a large tree and you take this opportunity to leave quietly and quickly.

As you walk down the trail, you think of the exciting scene you have just witnessed. You notice the clean water, trees and shrubs lining the stream. The stream is quiet, secluded and undisturbed. As the birds sing and shadows pass below your feet, you wonder what adventure awaits you around the next bend!

4. Ask students to continue to sit quietly with their eyes closed and review the whole experience. Ask them to pay particular attention to their favorite images. Tell them they are going to be asked to describe this setting as they saw it. Invite them to open their eyes.

5. Ask them to describe their favorite images. Once each student has done this, invite all the students to select art materials to draw, paint, sculpt, etc., their favorite images. You may want to have students write about their experience. The Project WILD activity, "Animal Poetry", works well for this.

6. Discuss the experience with the students. Ask them to identify some of the characteristics of a riparian area. Ask them what animal do you think is discussed in this story? What do the animal's tracks look like? How many toes does it have? What does the animal eat? Where does it live? Where does it raise its young? Why are quality riparian areas important to this animal? How does this animal differ from a beaver? A muskrat?

Extensions/Evaluation:

1. Find pictures of river otters, their food, tracks, and their habitat that show what you imagined while listening to the story. Find pictures of other animals that live in a riparian habitat.

2. Write your own story about another animal frequently found in a riparian area.

3. Visit a riparian habitat. Look for things you encountered in your story. List things that are in this area that you did not picture in your story.

4. Generate a list of things that could be done to make it possible for people to visit a riparian area without damaging or destroying it.

GLOSSARY

Riparian: Located along or living along or near a stream, river, or body of water.

RIVER OTTER GAME

Twin Groves Virtual River Otter Preserve

Your Mission…

You are a newly born river otter growing up in the wetlands. Can you survive?

To play this game you will need the following:

1. Two dice
2. Copy and assemble the board game provided at the end of the activity.
3. Make a copy of the River Otter Question Cards, cut apart and place face down on the board where it says "Place Food Cards Here."
4. Gather small pieces of material such as Indian corn, bingo chips, etc. to use as food pieces and place in the spot on the board where it says "Food Collection."

Set Up

1. Place the Question (Food) cards on the board where indicated.
2. Place the food pieces in the place indicated on the board.
3. Take the dice and place them between players, next to the cards.
4. For markers, use any small items found around your classroom or home such as paper clips, refrigerator magnets, erasers, etc.

Object

The object of the game is to be the river otter that reaches the "Wetlands Finish" with the most food pieces.

How to Play

1. Each player picks a marker and places it at the starting point.
2. Each player rolls the dice to determine order of play.
3. The first player rolls the dice and moves his or her piece to the correct spot. Each player follows the directions on the square they land on. If he or she lands on…

   FREE SPACE – he or she gets a rest.

   FOOD SPACE – your opponent takes a card from the Food card stack and reads the question to the player on the Food Space. If the player answers correctly, they get to take a food piece. If the player answers incorrectly, play passes to the next player.

4. Follow in this manner until all players have made it through to the "Wetlands Finish." The player with the most food pieces wins the game.

Stop Light! You are now an adult.	Food Square	Free Space	You left your food unguarded. Lose one piece.	Food Square

Go hunting with the group. Get 1 food piece.
Food Square
You found a lost pup, and you returned it. You are rewarded two food pieces.
Food Square

River Otter Game

Upper Right Board Section

Lower Right Board Section

Stop Light! Turn in 7 food pieces.	Food Square	You have lost your pup. Go back 3 spaces to try to find him or her.	Food Square	Humans have destroyed your home. Go back 10 spaces to find a new home.	Go on night hunting trip. You get two food items but you miss a turn because you need to catch up on lost sleep. After all, you sleep 1/2 the time!	Teach your pup how to hunt.
						Stop Light! You now have a child. You must collect two more food items. All questions are worth one more point.
						Food Square
						Stop Light! Turn in 5 food items
						Food Square

Upper Left Board Section

Lower Left Board Section

Question Card

Points: 2

What keeps otters from getting cold?

Answer:
Its dense, fur coat.

Question Card

Points: 2

Name one body feature that allows the river otter to swim well.
A) Thick tail at the base, smaller as it goes out
B) Webbed feet
C) Shortened legs

Answer:
Any of the above

Question Card

Points: 2

Besides Illinois, where else are river otters found?

Answer:
They can be found in places all over the U.S. and in Canada.

Question Card

Points: 1

What body parts do river otters close up when they swim?

Answer:
A) nostrils and ears?

Question Card

Points: 2

How long do most otters live?
A) 39 years
B) 29 years
C) 19 years

Answer:
A: 19 years

Question Card

Points: 2

Where are river otters most abundant?
A) Mississippi River
B) Lake Michigan
C) Lake Erie

Answer:
A: Mississippi River

Question Card

Points: 3

What is a river otter often mistaken for??

Answer:
A beaver (because it lives in the same habitat and looks the same.)

Question Card

Points: 2

Since 1940, in how many Illinois counties have river otters been sighted?
A) 13
B) 23
C) 33

Answer:
C: 33

Question Card

Points: 3

During what months are river otters born?

Answer:
April/May

Question Card

Points: 3

In what family does the river otter belong?

Answer:
The Weasel family

Question Card

Points: 3

How many different species of river otters live in Illinois?

A) 1
B) 12
C) 16

Answer:
B: 1

Question Card

Points: 2

How long are river otter's bodies?

A) 1 meter
B) 2 meters
C) 3 meters

Answer:
A: 1 meter

Question Card

Points: 2

About how much do adult male otters weigh?

A) 20 lbs.
B) 25 lbs.
C) 30 lbs.

Answer:
C: 30 lbs.

Question Card

Points: 3

Why are otters hunted by humans?

Answer:
For their thick and luxurious fur.

Question Card

Points: 2

Name two products that pollute the water the otters live in?

Answer:
Toxic chemicals, fertilizer, oil

Question Card

Points: 2

How do settlers take away a river?

Answer:
They take all of the water out and then they build on top of it.
(draining)

The History of River Otters in Ohio

River Otters in Ohio: A Journey through Time

River otters were once common throughout most of the continental United States and Canada. Ohio's population of river otters suffered a sharp decline during the 19th century. Significant loss of wetland habitat, polluted waters and unregulated trapping and hunting all contributed to the population loss. By the mid 1900's, the river otter was considered extirpated, or eliminated, from Ohio.

Ohio Division of Wildlife biologists began studying otter reintroduction efforts in other states, such as West Virginia, Illinois and Missouri, in the early 1980's. Otters require clean bodies of water that have adequate food supply and cover. After extensive water quality testing and a close study of available habitat needs, it was decided a river otter reintroduction could take place.

On December 21, 1986 the first six river otters were reintroduced into Ohio's waters at the Grand River Wildlife Area in Trumbull County. These first otters were trapped in Arkansas and transported to Ohio. Reintroduction is a slow process and often a sustainable population takes many years to stabilize. Louisiana also participated in relocating otters to Ohio. The next year, eight otters were successfully reintroduced. In January of 1990, twenty-six otters were reintroduced. Between 1986 and 1993, a total of 123 otters were successfully reintroduced into Ohio's waters.

Through the late 1980s and 1990s, river otter numbers were steadily increasing, not only because of the introductions, but also because the river otters were breeding and raising young. A stable population was developing.

Since then, river otters have been sighted in nearly two-thirds of Ohio's counties and now they are so numerous that they were taken off the state endangered species list in 2002! Otter releases are complete now that the Division of Wildlife has met their goal of establishing reproducing populations in suitable habitats. The otter numbers have increased so dramatically that they now need to be regulated. A limited trapping season was introduced in 2006 to manage the population. The Division continues to conduct extensive research and monitoring programs to ensure river otters remain a healthy part of Ohio's heritage.

NonGame Quarterly

Ohio Department of Natural Resources | Division of Wildlife

Newsletter of the Ohio Nongame & Endangered Wildlife Program

Volume 2, Number 3 | Spring 1987

River Otter Reintroduction Begins

by Denis Case

A major step was taken on December 21, 1986, in efforts to reintroduce the river otter in Ohio. This was the day that the first group of otters was released into Dead Branch, a tributary of the Grand River in Trumbull County. The objective is to establish a self-sustaining population of otters in the Grand River watershed through a series of releases of wild otters from other states. It is thought that this can be achieved by releasing a total of 20 adult animals, ideally consisting of 12 females and 8 males.

All of the initial otters have come from Arkansas. Ohio has been cooperating with that state's Fish and Game Commission over the last several years, allowing live ruffed grouse to be taken back to Arkansas to help in their efforts to reestablish the bird. The two states agreed that the 83 grouse taken so far were worth about 20 otters for Ohio. Another reason for working with Arkansas was that Missouri has also been acquiring otters from them for the last two years as part of the "Show Me" state's otter reintroduction project, and so Arkansas had already developed the necessary internal communications network and physical facilities for handling live otters.

To date, a total of 23 otters have been picked up in Arkansas. When they acquire five or more otters, they give us a call, and the Division's aircraft is dispatched to Little Rock to pick them up. The 23 otters have been brought back in four trips. Unfortunately, this has not resulted in all animals being released in the Grand River. The box score at this time is 13 otters actually released, with a total of six males and possibly one female alive as of this writing. Mortality has been high, and although it is higher than anticipated at the time of working out the original grouse-otter trade agreement, subsequent experience between Arkansas and Missouri involving over 80 otters has indicated that we should expect mortality rates in excess of 60%. A lot of factors are involved in the otter mortality, but they are mostly related to the difficulty of trapping, handling, and holding live otters.

Ohio personnel have demonstrated that these difficulties can be overcome with an otter that is received in reasonably good condition. This is no small feat, and all persons involved in the project deserve credit for a job well done.

Otters dash for freedom at the Grand River Wildlife Area.

Once the animals get to Ohio they must be individually separated, anesthetized, weighed, examined, and prepared for surgery. A radio transmitter is placed inside the abdominal cavity and any wounds or injuries are treated. The transmitters are crucial to the evaluation of the project. Without them, it would be difficult to assess survival, dispersal, habitat use, and reproduction. Although the surgical procedure undoubtedly adds to the stress for the otters, our observations of the animals' recovery, and experience gained from other projects utilizing similar techniques, indicate that the benefits far outweigh any negative effects and that the surgical procedure itself is not a significant factor in the otter mortality.

Dr. Catherine Temple surgically implanting radio transmitter.

Results from initial radio tracking of the otters are encouraging. They are remaining in the release area, supporting the idea that the habitat is suitable. We know that they are feeding, and that they have been able to locate suitable den sites in a relatively short time. Now that our original trade agreement with Arkansas has been satisfied, additional sources of otters are being investigated. We hope that enough additional animals can be acquired to reach the desired stocking number and sex ratio by spring of this year.

Opinion Survey

A lot of you helped to develop Ohio's nongame wildlife program through your participation in the workshop at Ohio State University in the fall of 1984. That effort resulted in the identification of specific projects that guide the majority of the Division's nongame activities today. Your assistance is now requested on a set of nongame policy questions. The enclosed form has some interesting questions on it, and there are probably a lot of legitimately different points of view. Please fill out the form, fold and staple or tape it shut, put a stamp on it, and mail it back before May 1, 1987. The results will be published in the next issue. Thanks for your help.

The first group of river otters was released in the Grand River Wildlife Area on December 21, 1986.

Wildlife News

Ohio Department of Natural Resources
Division of Wildlife

FOR IMMEDIATE RELEASE January 8, 1990

COLUMBUS, Ohio - As part of a continued endangered species reintroduction effort, the Division of Wildlife announced Monday it plans to release 25 river otters on the Grand River Wildlife Area in northeast Ohio during the next three to five weeks.

The 15 male and 10 female river otters are being purchased from a Louisiana trapper and supplier at a cost of approximately $15,000. Funding for this reintroduction project is provided through the Ohio income tax checkoff and other contributions to the Division's nongame and endangered wildlife program.

Among the 10 female river otters will be 4-6 pregnant otters which are expected to give birth shortly following their release along the Grand River. Wildlife biologists said releasing a large number of river otters, including some which are ready to produce newborns, will help ensure a viable river otter population can be established in northeast Ohio. The average size of a river otter litter is three pups. Female river otters are able to breed shortly after they give birth to their young. It takes approximately one year for a female river otter to give birth after she is bred.

Six river otters were initially released along the Grand River in early 1987 as part of a research effort to determine the feasability of reintroducing river otters to Ohio. Eight more were released in early 1988. Each of these animals was fitted with a radio

transmitter which provided valuable information regarding habitat requirements, food sources and survival. Enough of the animals survived to allow wildlife biologists to conclude that suitable habitat has been restored in Ohio.

"We will be handling these river otters as little as possible and do not plan to fit them with radio transmitters since that information has already been obtained from previous releases. We will, however, mark the animals so that they can later be identified," said Denis Case of the Division of Wildlife.

Wildlife News

Ohio Department of Natural Resources
Division of Wildlife

FOR IMMEDIATE RELEASE

January 21, 1992

RIVER OTTERS TO BE RELEASED IN NORTHEAST OHIO

COLUMBUS, Ohio - The Division of Wildlife plans to reintroduce 25 river otters along Stillwater Creek near Freeport in Harrison County on Friday, January 22. The animals were expected to arrive from Louisiana for release Friday afternoon.

These animals will join others which have been reintroduced in recent years along the Grand River, Killbuck Creek and Little Muskingum River. The loss of clean waters and streamside habitat combined with unregulated trapping wiped out much of Ohio's original river otter populations during the 1800s. The otter is one of four mammals included on Ohio's endangered list.

"Public input concerning endangered wildlife and the reintroduction of the wild animals which were once native to Ohio has always been very positive. I'm proud that we can make this project possible and our success is positive proof that Ohio has made great strides toward improving the water quality of our streams and in protecting streamside habitats," said Division of Wildlife Chief Richard Pierce.

Six river otters were initially released along the Grand River in early 1987 as part of a research effort to determine the feasibility of reintroducing river otters to Ohio. Eight more otters were released in 1988 to help complete the study.

The first major reintroduction effort occurred with the release of 25 otters along the Grand River in early 1990. With the other reintroduction efforts which have occurred since, including this week's release in Harrison County, wildlife biologists estimate as many as 1,000 river otters will exist in Ohio by the year 2000.

Few mortalities have been reported since the reintroduction effort began several years ago. The Division of Wildlife has received reports from casual observers of river otters with young pups present in northeast and eastern Ohio counties.

Wild Ohio MAGAZINE

Division of Wildlife Mission Statement: *We are dedicated to conserving and improving the fish and wildlife resources and their habitats, and promoting their use and appreciation by the public so that these resources continue to enhance the quality of life for all Ohioans.*

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Wild Ohio

Winter 1999-2000
Volume 10, Number 4

Wild Ohio Features

Front Cover:

The river otter is a native species that has been restored to Ohio. (Photo by Tim Daniel)

Visit the Ohio Division of Wildlife online at: **http://www.dnr.state.oh.us/odnr/wildlife**

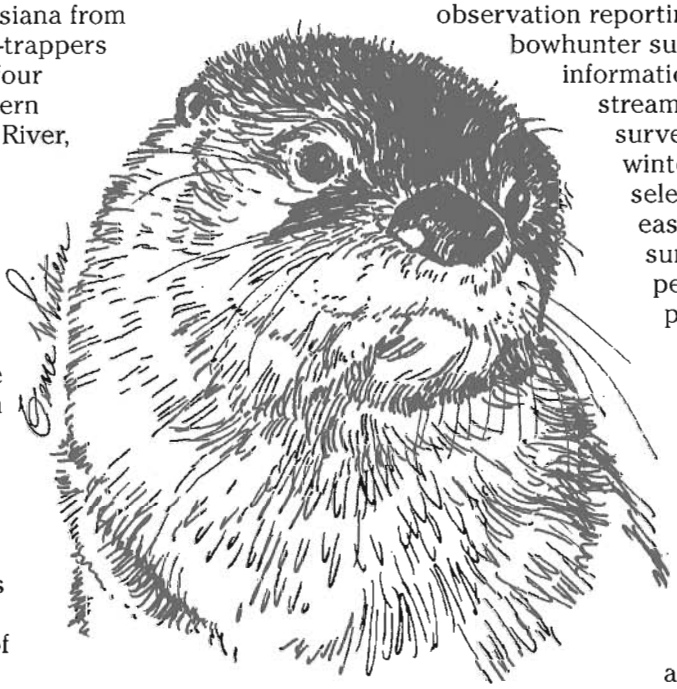
River Otter Update

by Chris Dwyer

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE

Ohio's watchable wildlife

Thanks to reintroduction efforts, river otters are becoming more common in Ohio's rivers and streams. From 1986 through 1993, 123 river otters were obtained in Louisiana from cooperating live-trappers and released in four locations in eastern Ohio: the Grand River, Killbuck Creek, Stillwater Creek, and the Little Muskingum River. Since the release program ended in 1993, river otters have been reported in 40 Ohio counties. Other signs of an increasing population include sightings of otter family groups in each of the release watersheds and elsewhere in Ohio.



Currently, the Ohio Division of Wildlife monitors the state's river otter population using several methods, including an otter observation reporting system, a bowhunter survey, necropsy information, and a new stream-bridge crossing survey. Starting this winter, bridges in select watersheds in eastern Ohio will be surveyed by Division personnel (with permission from landowners) for tracks and other signs of river otters. This survey provides a consistent method for determining where otters are occurring, especially in areas that are not

Continued on page 3

Total copies printed: 100,000 Unit cost: $.053 Publication date: 12/99

Watchable Wildlife continued from page 2

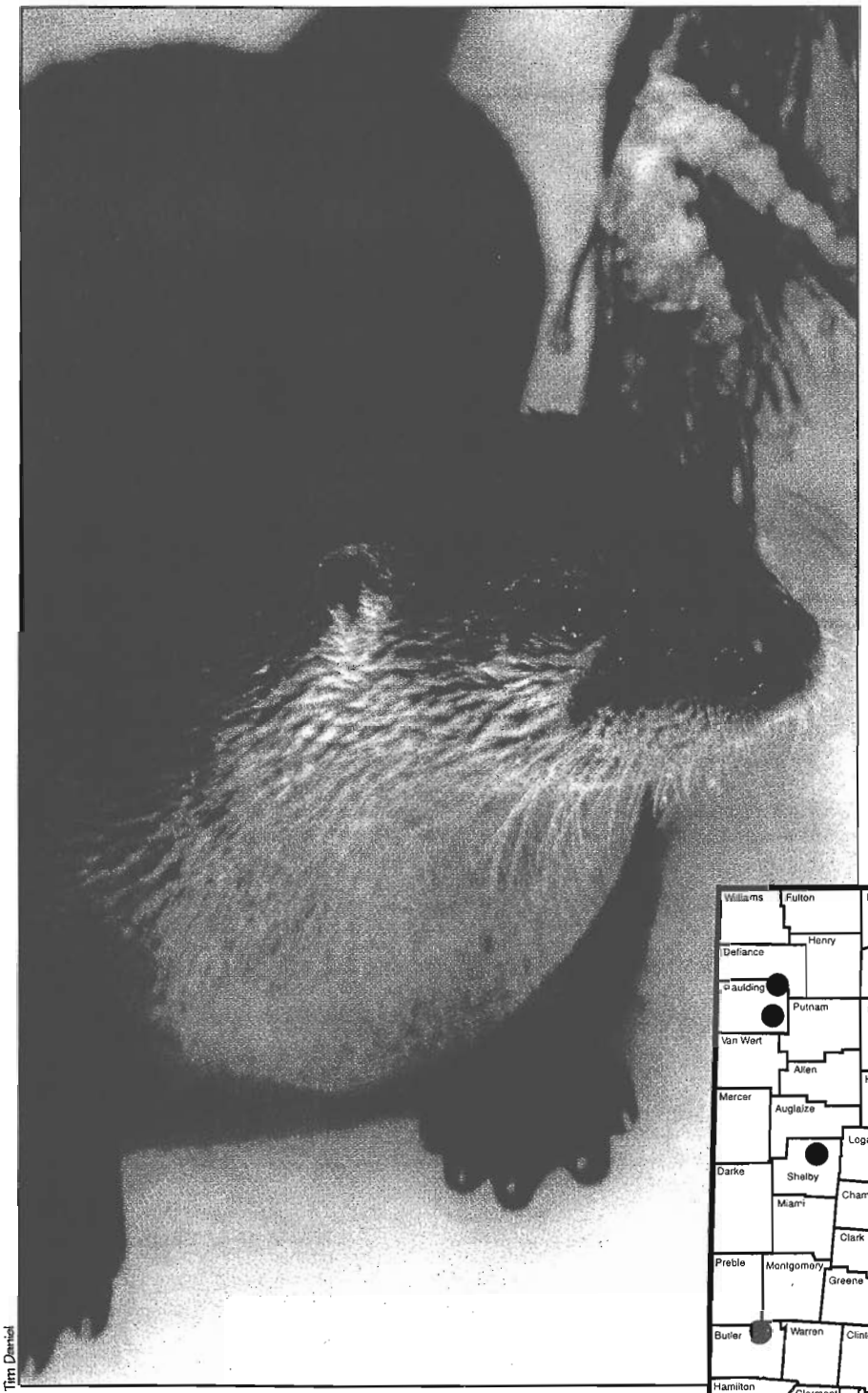
frequently visited by the general public.

Necropsies of road-killed otters and otters accidentally caught in beaver traps will also provide some of the most important information on age, sex ratios, and signs of reproduction. These data allow biologists to determine population estimates of otters through computer modeling. Another survey asks bowhunters to keep track of the number of various animals, including river otters, they see while hunting each fall.

But by far, the most information obtained on river otters in Ohio to date has been through observation reports submitted by the general public. People who see river otters are encouraged to report sightings to their wildlife district office, or call 1-800-WILDLIFE. Specific information about the sighting, such as date, river or stream where the otters were observed, number of animals, etc., are all useful in tracking the abundance and distribution of otters statewide.

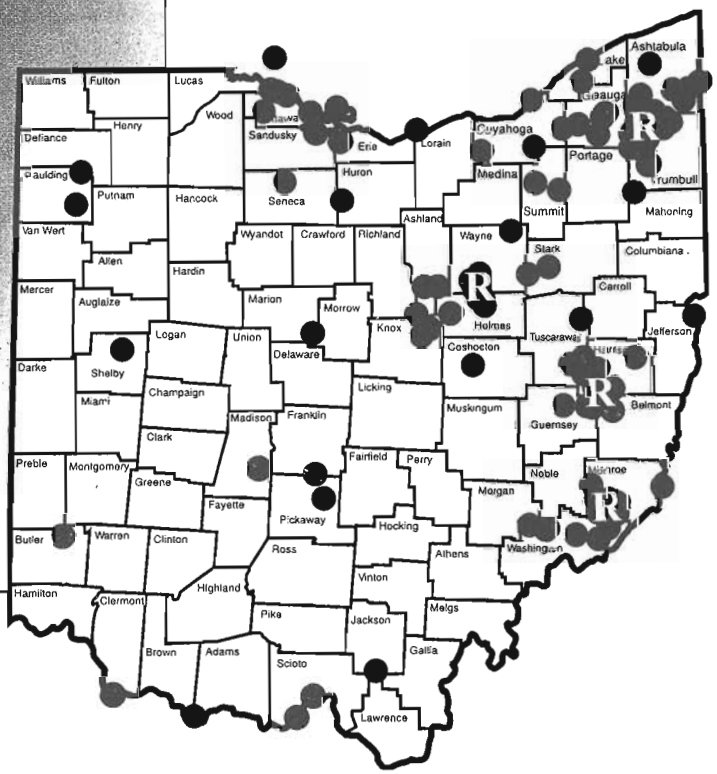
"...river otters have been reported in 40 Ohio counties."

With any luck, you may be fortunate enough to witness river otters on your next outing along a favorite Ohio river or stream. And if you do, please give us a call. ■



Tim Daniel

River otter numbers are increasing in Ohio. If you happen to see an otter, please call your district wildlife office or 1-800-WILDLIFE to report the sighting.



River otter sightings since their reintroduction to Ohio in 1986 ("R" designates initial release sites).

News Release

FOR IMMEDIATE RELEASE
January 10, 2002

RIVER OTTERS MAKING GREAT COMEBACK IN OHIO

Wildlife Division Proposes Removing Otters From Endangered Species List

COLUMBUS, OH-- Ohio's river otter population is healthy and growing, according to the Ohio Department of Natural Resources (ODNR) Division of Wildlife. Last night, state wildlife biologists proposed to the Ohio Wildlife Council that otters be removed from Ohio's endangered species list.

"It's great to once again have otters a part of the Ohio landscape," said Mike Budzik, chief of ODNR's Division of Wildlife. "Thanks to reintroduction efforts that began in 1986, otters have made a strong comeback in the Buckeye State."

The Wildlife Council will vote on the proposal to remove otters from the endangered species list on April 10.

River otters are native Ohio furbearers, once common throughout the state. Poor water quality, stream pollution and deforestation during the late 1800s and early 1900s caused their disappearance from Ohio. Clean rivers, streams, ponds and lakes with abundant forage fish are the key ingredients for otters' survival.

Now found in 52 counties, river otters are known to be reproducing in at least 10 watersheds. Otters can grow as large as three feet in length and Ohio otters typically weigh 20 to 25 pounds, with males being somewhat larger than females. Adult females normally give birth to three or four pups per year, but have been known to give birth to as many as six.

In 1986, the ODNR Division of Wildlife began reintroduction efforts by acquiring otters from other states and releasing them into watersheds that had been identified to have suitable otter habitat. Targeted watersheds were estimated to be much cleaner than they had been in the early 1900s.

Trappers in Arkansas and Louisiana used traps to catch otters that were then transported to Ohio. Between 1986 and 1993, 123 river otters were released in four eastern Ohio watersheds: the Grand River (Trumbull and Ashtabula counties), Killbuck Creek (Wayne and Holmes counties), Stillwater Creek (Harrison County), and the Little Muskingum River (Washington County).

ODNR wildlife biologists have conducted aerial surveys during the winter, and kept records of sightings of river otters since the restoration program began.

"Documentation played a critical role in the successful reintroduction of otters to our state," said Chris Dwyer, river otter project manager. "Today, we can conservatively estimate Ohio's otter population is now at least 2,100 animals."

Dwyer said in addition, the wildlife division is conducting radio telemetry studies that will provide further information on the numbers of otters, and their locations throughout Ohio.

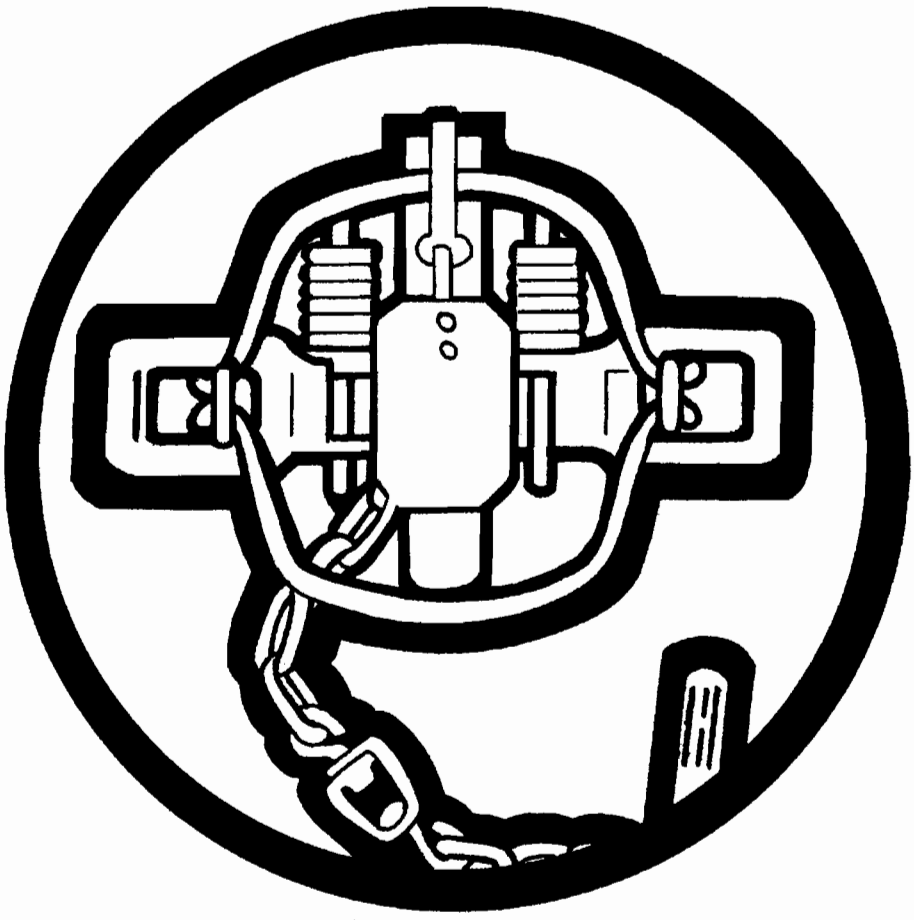
Ohio's trappers have been one of the agency's best sources of information regarding otter populations, according to Dwyer.

"Trappers see sign such as tracks, and observe the animals when they are out trapping, since otters and beavers use the same habitats. Ohio's trappers have been very diligent in reporting their otter observations," he said.

Pennsylvania, West Virginia, Kentucky and Indiana have each conducted similar relocation and reintroduction efforts. Several otters have been reported in Ohio near the Ohio/Indiana border. These animals most likely came from Indiana's release efforts. Some otters might also have come from Michigan, where a viable population has continued to exist.

Other native animals scarce in Ohio 100 years ago and now re-established include the wood duck, bald eagle, wild turkey and the white-tailed deer.

River Otter Management



Trapping River Otters

River otters are abundant in Ohio after being successfully restored in our state nearly 20 years ago. The 2006 Wildlife Population Status Report estimates the otter population at over 6,000 individuals. Their distribution now includes at least 67 counties encompassing 69 watersheds. In many areas the otter population is growing rapidly. Wildlife professionals have the responsibility of balancing the needs of people with the needs of wildlife, particularly when a species has the potential of becoming too abundant.

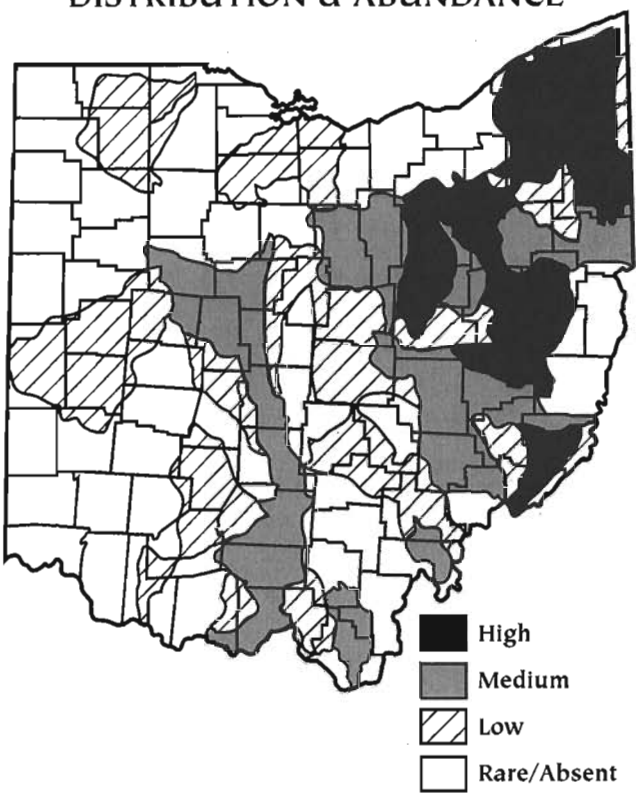
The Division of Wildlife anticipates that the number of otters will continue to increase and could cause damage to farm ponds, fish hatcheries, and other public interests. It is the Division's mission to conserve fish and wildlife resources and to promote their use and appreciation by Ohioans. This includes preventing and correcting human-wildlife conflicts. Regulated trapping is the best tool to reduce conflicts and prevent further damage to private and public property.

Otters are being trapped only under strict regulations. A highly-regulated season requires strict limits on the number of otters that can be taken, when, where and how otters can be trapped, daily trap-check requirements, mandatory tagging of traps with the user's name and address, and many other regulations before traps can be set. Foothold traps do not break an animal's leg and otters that are unintentionally trapped can be released unharmed.

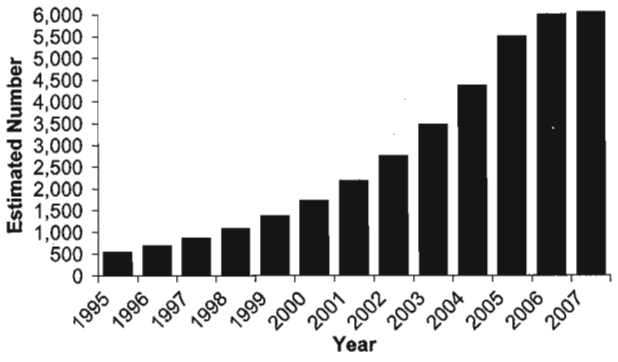
Regulated trapping programs and the use of modern traps have played a vital role in the reintroduction of otters. In fact, foothold traps were used to catch the otters reintroduced to the state. Trapping also helps maintain stable otter populations and reduce conflicts throughout Ohio and the United States.

River Otter

DISTRIBUTION & ABUNDANCE



River Otter Population Estimate, 1995-2007



TOP 5 VIEWING SITES

- Grand River Wildlife Area, Ashtabula County
- Mosquito Creek Wildlife Area, Trumbull County
- Killbuck Marsh Wildlife Area, Wayne & Holmes counties
- Stillwater Creek, Harrison & Tuscarawas counties
- Little Muskingum River, Monroe & Washington counties

2007 UPDATE

This native furbearer continues to increase in many of Ohio's rivers, streams and lakes, where their distribution includes at least 67 counties encompassing 69 watersheds. Increases in otter numbers are likely the result of improved aquatic habitats, an expanding beaver population, and similar restoration efforts in neighboring states. Current population estimates suggest that river otters may number more than 6,500 individuals in Ohio. Continued population growth will provide additional opportunities for viewing river otters, especially in eastern Ohio. A highly regulated and limited trapping program in eastern Ohio, where river otters are most abundant, will provide opportunities for trappers to harvest this species during 2007-08.

Survey details, historical data, and regulations can be found at: www.dnr.state.oh.us/Home/tabid/10580.aspx

www.ohiodnr.com/wildlife/dow/regulations/trapping.aspx

The Otter Game

Grade Level: Middle School

Overview

This simulation game teaches the player(s) about factors affecting the survival of river otters. It introduces the idea of **carrying capacity**, or how many animals an ecosystem can support. It also examines the issues of overpopulation, pollution and controlled trapping or hunting as a means of managing population size.

Objectives

Upon completion of this activity, students will be able to:

- Explain how nature regulates otter populations
- Describe the relationships between otter populations and their food supplies
- Explain the effects of habitat changes on otter populations
- Educate students on issues related to hunting and trapping of otters

Important Words

- Carrying capacity

Materials

- Instructions
- Food cards (5 crayfish, 12 fish, 6 snakes, 12 frogs, 4 turtles, 8 invertebrates)
- Stop watch
- Final questions

Time Needed

40 minutes

Teacher Preparation

Copy a complete set of **Otter Game Cards** so that each group of 4-5 students receives 47 separate animal cards. Cut cards so you have 5 separate crayfish, 6 separate snakes, etc.

Background Information

River otters are carnivores, and are opportunistic feeders. They prefer crayfish and fish, but will eat snakes, frogs, and other available food.

Otter fur is very durable and warm, and was highly coveted by early American settlers. As a result, river otters were almost hunted to extinction in the early part of the 20th century,

before trapping was regulated. By 1930, the population in Missouri was estimated to be only 70 otters. In 1982, the Missouri Department of Conservation began restoring otters to the state from elsewhere; officials released 845 otters over an 11-year period. The release program was highly successfully. River otter numbers have rebounded in Missouri: by the year 2000, the population was estimated to be nearly 15,000.

Carrying capacity: As top-level predators, adult otters require a certain density of prey species to survive. They also have habitat needs and other resource requirements. The number of otters an ecosystem can support is called the **carrying capacity**. Otter populations in Missouri are still growing, which means they have not yet reached carrying capacity, but their populations are still being managed by regulated trapping. Why? They are already high enough in numbers to cause property damage, and there are also enough otters to allow for trapping without causing a threat to the population.

The Otter Game

Activity 1: Otter Game — 30 minutes

1. Hand each group of 4-5 students a set of 47 Otter Game Cards (food cards) and a stop watch.
2. Assign one member of each group to be the "dealer." The rest of the students are "otters."
3. Explain to the students that this game is about otter populations and how large a population one ecosystem can support.
4. This game is played in separate rounds. Round 1 should involve only the dealer and one otter. The other rounds should have at least 2 otters playing, plus the dealer.
5. Instruct the dealer to spread out the food cards face up on the table.
6. Tell the group members to look at the cards to learn about what otters like to eat. Point out that fish and crayfish are their favorite foods, but that they are opportunistic feeders that will eat whatever is available.
7. Tell students that it is winter and that each otter needs to gather 60 pounds of food to survive for one month in the winter. (You might point out that otters don't gather and store their food; they would normally hunt for a couple of pounds of food each day. This is just a simulation.)
8. Tell the first otter that he or she has 15 second to gather food. S/he may pick up the cards one at a time and place them in a pile in front of him/her, but can only use one hand.
9. Say "Go!" and have the dealer in each group time the first otter. After 15 seconds, say "Stop!" and have the students who participated in the first round count the food cards they've collected. Most players playing alone should be able to gather the food they need.
10. You can repeat Round 1 with other students in the group, if they'd like.
11. Round 2: Now we will increase the otter population size. Now, two or more students have 15 seconds to gather their food. You can do this in multiple trials (2 students, then 3 students, then 4, etc.) with all remaining "otters." When the 15 seconds are up, see who survived and who would be starving. Ask students, "What does this tell you about the number of otters an ecosystem can support?" (*It's a limited number, etc.)* Point out that just because the population of otters increases, that does not mean the *food supply* increases. Tell the students that this is called **carrying capacity**. If multiple people are playing, choose one to be the "trapped" otter. Tell them they have been trapped by a hunter and cannot play the next round. Ask the group if it would make it easier for the remaining otters to survive, i.e. find the necessary food (*yes, fewer otters looking for food.)* Play another round to show this or move on to Round 3.
12. Round 3: Now we will pollute the water. Ask for ideas about how water gets polluted. (*e.g., litter, pesticide runoff, etc.)* When water gets polluted, animals often can't live in it. So take away 3 crayfish cards and 6 fish cards. Have the players play again using various numbers of otters (1, 2, or 3). Now there is less food, so fewer people should gather food

successfully. This is why fewer otters can survive when there are unclean rivers. You can also point out that the same is true when habitat is destroyed by land development.

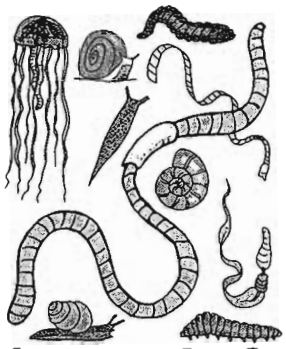
13. Wrap up: Remind the students that this simulation has taught them about carrying capacity of ecosystems and what affects the success of otters and other animal populations within their ecosystems.

Conclusion — 10 minutes

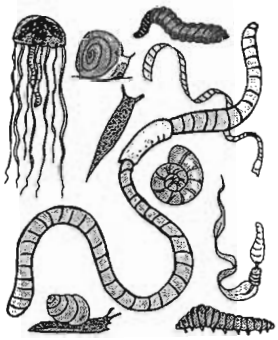
Have the students discuss the following questions in their groups. Then reinforce with an all-class discussion to check comprehension. Possible answers are in italics.

1. What is one of the things that otters need for their survival? (*Food.)*
2. Where do they get their food? (*From their habitat.)*
3. Which is more harmful to otters and other animals, trapping or pollution/habitat destruction? (*Pollution/habitat destruction. Some might say uncontrolled trapping, which could also be true, but you are really talking about the regulated trapping that occurs in Missouri.)*
4. How would nature control populations of animals? (*Starvation, disease, old age, predators, and/or a combination of these.)*
5. Would we have more otters if trapping were stopped? (*Not necessarily. The population would increase for a time, but then starvation would reduce the population once again. This is the important point about carrying capacity.)*
6. Why do we have laws regulating otter trapping? (*To prevent over-harvesting that could harm a species, as happened with river otters in the past.)*

Adapted from the Missouri Department of Conservation's Missouri Otter Game
http://www.conservation.state.mo.us/nathis/mammals/otter/game/



1 pound of aquatic invertebrates



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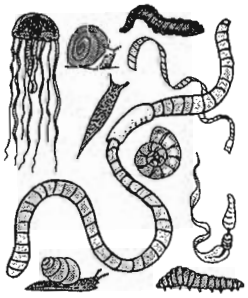

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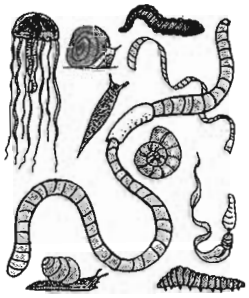

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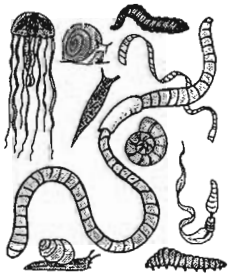

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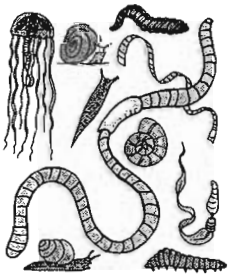

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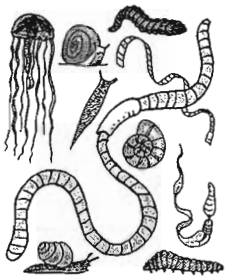

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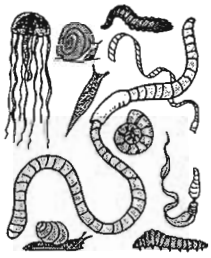

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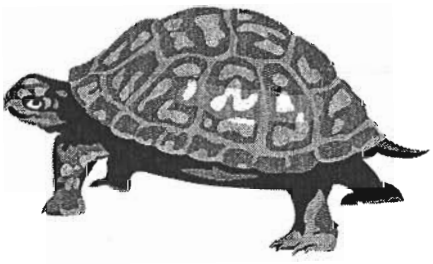
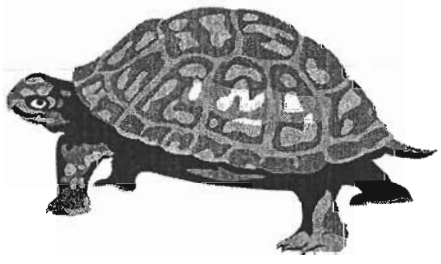


2 pounds of turtles



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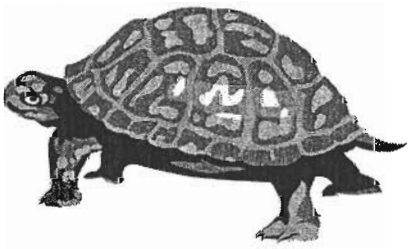

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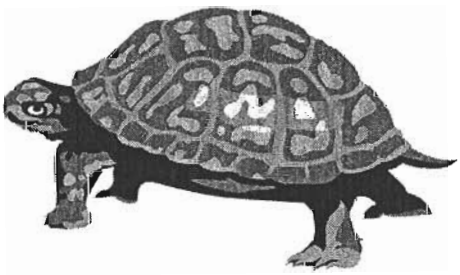
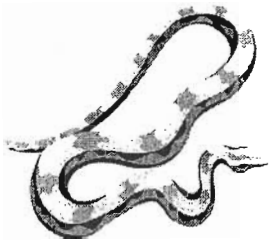
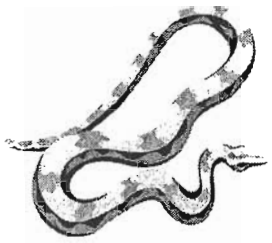


2 pounds of turtles

The Otter Game



2 pounds of snakes



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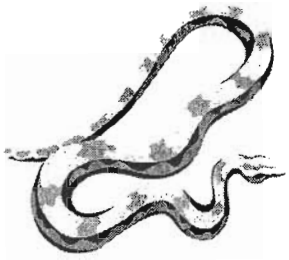

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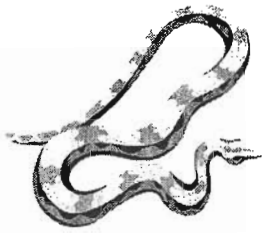
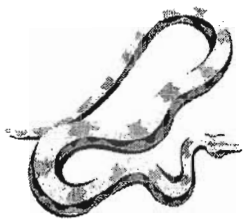


2 pounds of snakes



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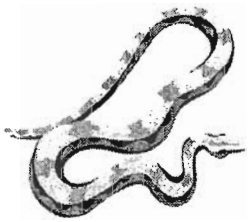

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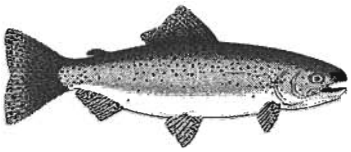

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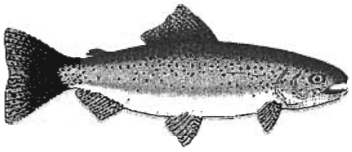

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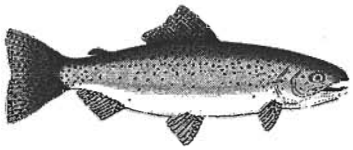

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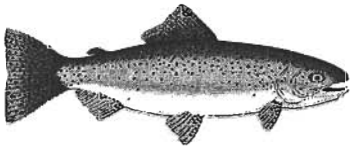

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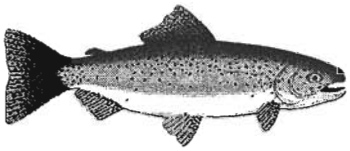

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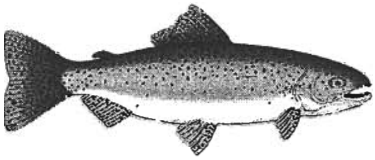

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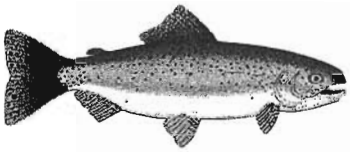

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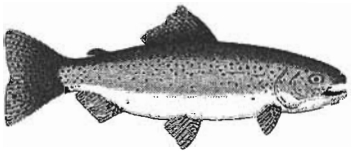

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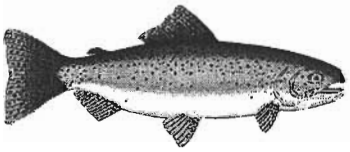

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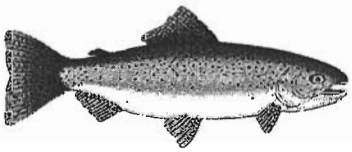

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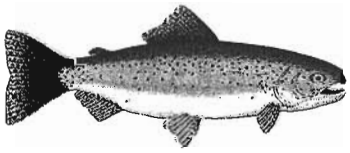

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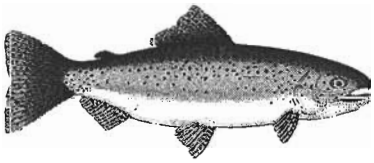

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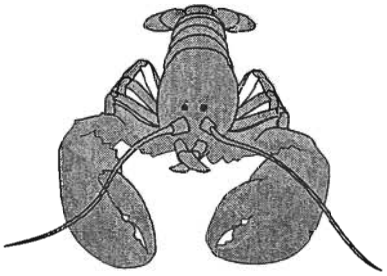
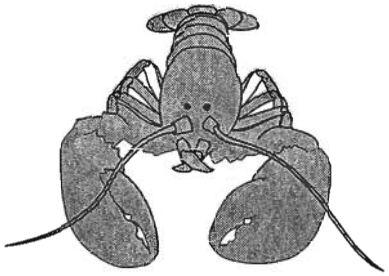


10 pounds of crayfish



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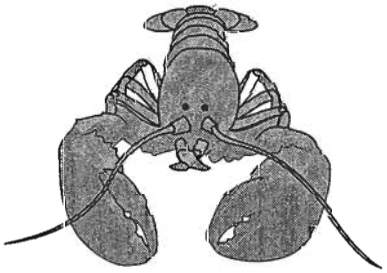

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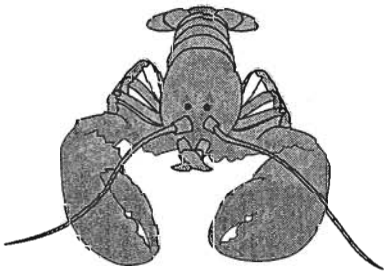

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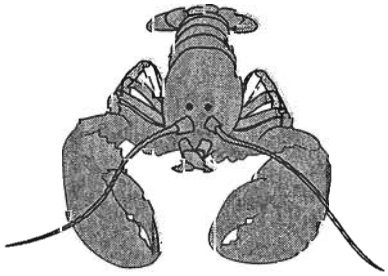
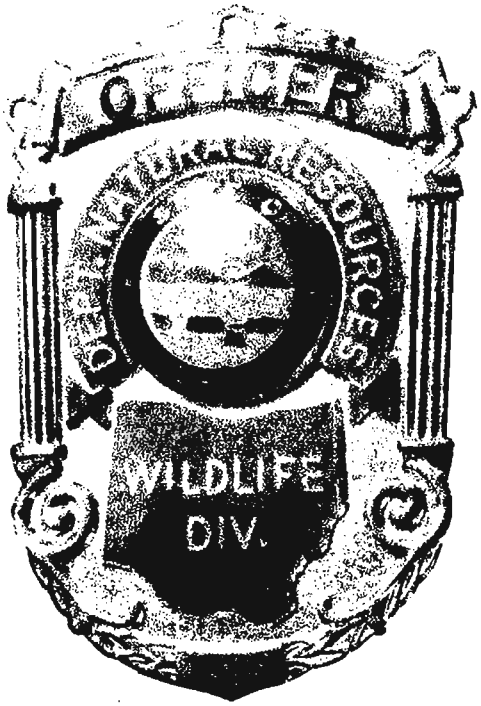


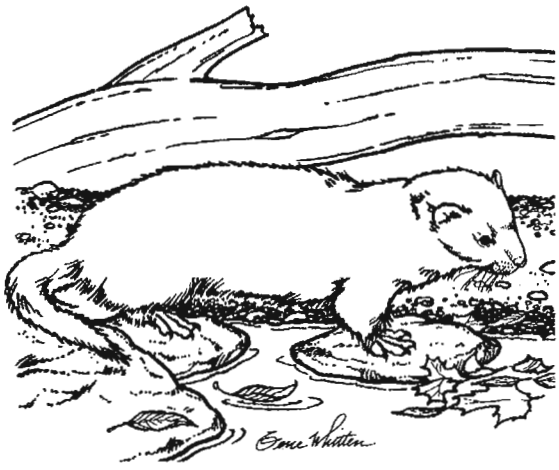
10 pounds of crayfish

Part Two: Management of Ohio's Furbearers

This section contains information on trapping mammals in Ohio, as well as various points of view on consumptive and non-consumptive uses of wildlife. Teachers can use this information as background for the following activities or it can be used by students as research to conduct debates in class or for reports. It is intended to be a starting point for students to explore and develop their own opinions about uses of wildlife in Ohio. Use of factual information is necessary to develop an informed opinion about this much-debated topic.



Ohio's Furbearers



American Badger

Introduction

The American badger is Ohio's only fossorial carnivore; it digs into the ground to feed on smaller, burrowing animals. As a member of the mustelid family, which includes skunks and weasels, the badger is distinctive in its markings and odor. Ohio represents the eastern extent of this fierce mammal's natural range and badgers have likely been in Ohio since pre-settlement times.

Badgers go largely unnoticed in Ohio because of their secretive and nocturnal nature. They usually spend daylight hours underground. Their short, stout bodies are built for rapid digging making them capable of hiding themselves quickly when alarmed. Therefore, it is difficult to get an accurate population size estimate. Because of this, the American badger is listed as an Ohio Species of Concern by the ODNR Division of Wildlife.

Have you seen a badger in the wild? Tell us about it!

In coordination with The Ohio State University, the Division of Wildlife is currently conducting a survey of badger behavior in Ohio.

If you've had an encounter, please fill out the **Badger Observation Form** so that we can improve our knowledge of this unique species. Your participation in this research is appreciated.

Description

Like their close relative, the striped skunk, badgers have a white stripe that extends back over the head from the nose. They have white fur around their eyes and black cheek patches, or "badges," for which they are named. The rest of the body is a shaggy mix of silvery gray, black, and buff colors and the feet are black. The badger's toes are webbed and its claws may be up to two inches long; useful adaptations for a life of burrowing and digging.

The badger is a stocky animal with a flattened body and short legs which keep it close to the ground. These characteristics coupled with loose skin and a shaggy coat often makes it look as though it is flowing along the ground. Including a short tail, the badger can range in length from 22 to 30 inches long and usually weighs 14 to 19 pounds.

Habitat and Habits

Badgers are a grassland species, specifically favoring habitats with short grass, such as fields and pastures. In Ohio, badgers inhabit areas above glacial till, but are mainly found in the western and central regions. They are sometimes seen along roadways, fence rows, ditch banks, field edges or idle crop fields.

The most obvious signs of badgers are their dens. The burrow entrance looks like a very large groundhog hole but is usually oval in shape. Their tunnels can be up to 30 feet long and may go to depths of nearly 15 feet. Males are known to cover great distances making new dens as they travel.

Badgers are true carnivores and will prey on rodents, other small animals, and even small birds. In Ohio, their range closely resembles that of the thirteen-lined ground squirrel, indicating that it may be an important food source. The badger's excellent senses of smell and hearing help it to locate prey that lives below the ground. When it senses something, it digs rapidly into the ground with its strong forelimbs and captures its prey. Nictitating eyelids, which are transparent covers over the eyes, protect the badger's vision from being damaged by flying soil.

Reproduction and Care of the Young

Badgers usually remain solitary except during the mating season which occurs in the summer and early autumn. They are believed to be Polygynous, that is, they have more than 1 mate. Though mating occurs earlier, implantation of the fertilized egg is delayed until some time in February. Young are born after a six week gestation period in late-March or April.

Litter size ranges from one to five cubs and the young are born in an underground den that is more structurally complex than the regular daytime den. Cubs are lightly furred and blind at birth. Their eyes open at 4 weeks, and weaning occurs at five to six weeks old. The young remain with their mother for 10 to 12 weeks.

Management Plans

The American badger is designated as a Species of Concern in Ohio. Species of Concern are species that might become threatened in Ohio under continued or increased stress. In the instance of the badger, more information is needed on its population size and distribution before an adequate status can be designated. Wildlife biologists continue to study badger populations in Ohio. Data from road-kill surveys and radio tracking will help to determine a population estimate.

Do Something Wild!

The Division of Wildlife manages for wildlife diversity in the state. With money either donated through the state income tax check-off, by the purchase of wildlife license plates, or direct contributions to the Endangered Species Special Account, the Division is able to purchase critical habitat that is essential to sustaining many species of wildlife or to provide education materials and opportunities on wildlife to children and adults. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 2045 Morse Rd, Columbus, OH 43229-6605. All contributions whether made on your income tax return or directly, are tax deductible.

At a Glance

Mating: Polygynous, implantation is delayed

Peak Breeding Activity: Summer and early autumn

Gestation: Approximately six weeks after implantation occurs in February

Young are Born: Late-March and April

Litter Size: 1 to 5

Young Leave Parents: Weaned at 5 to 6 weeks, stay with mother 10 to 12 weeks

Number of Litters per Year: 1

Adult Weight: Males - 18 to 30lbs; females average 14lbs

Adult Length: 22 to 30 inches

Life Expectancy: Up to 14 years, but average in wild is 4 to 5 years

Migration Patterns: Year-round resident but reduced activity in winter

Typical Foods: Small rodents including ground squirrels and mice, amphibians, reptiles, small birds, eggs, and invertebrates

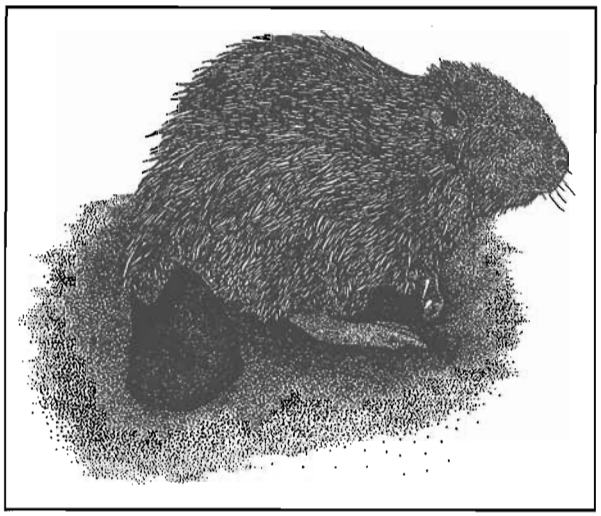
Native to Ohio: Yes

Ohio Division of Wildlife

Life History Notes

Beaver

Scientific Name: *Castor canadensis*



Publication 97
(1099)

Introduction

The beaver is North America's largest rodent. It is often cited as one of the prime forces motivating exploration and European settlement of the United States and Canada. Beaver pelts commanded high prices abroad. However, this unregulated commerce resulted in a drastic drop in beaver numbers; by 1830, there were no beavers in Ohio. Wildlife management practices were instrumental and effective in allowing the beaver to return to Ohio and establish a thriving population today.

The beaver is found throughout the continental United States and Canada except in extreme northwest Alaska, portions of California and Nevada, the Northwest Territories, and far north Quebec, Canada. In Ohio beaver are found in more than 1/2 the counties; the eastern half of the state and the southwest counties are the most populated.

Description

The beaver is a large mammal with beautiful, dark chestnut brown fur. This coat is slightly lighter on the animal's head and belly. It has a large, flat scaled tail and webbed hind feet. Its large front teeth (incisors) are one of its distinguishing characteristics.

The beaver has several special adaptations that are not visible. It has valves in its nose and ears that close when it goes underwater. It also has oversized lungs that allow it to retain enough oxygen to stay under water for 10 to 15 minutes. Its eyes are also relatively small and capable of staying open while the animal is under water.

Habitat and Habits

The beaver's behavior is among the most unique and interesting in the animal world. Beavers alter the existing habitat to suit their needs. A pond, lake, or slow moving river or stream bordered by stands of small trees, preferably aspen, poplar, birch, maple, cottonwood, willow, or alder is ideal beaver habitat. Once a beaver has located such an area it proceeds to construct elaborate and effective dams. These structures are primarily made with small sticks and mud. An average beaver dam is three to four feet tall and 50 to 200 feet long. One of the largest dams known of in Ohio was in Columbiana County and measured 1,200 feet long.

Behind the dam, the beavers will construct an intricate domed lodge made of twigs, logs, and mud, that will have at least two underwater entrances. Although most winters in Ohio are not severe enough for waterways to ice over for an extensive period of time, beavers prepare anyway. Large piles of branches are stored on the bottom of the pond near the lodge as a food reserve for the winter.

Beavers live in extended family colonies. This grouping is usually made up of the adult male and female beavers and four or five, respectively, of their one- and two-year old offspring.

The broad, flat tail is used by the beaver to navigate through and under the water. It is also used as a warning device to other beaver. The loud slap of the tail on the water's surface is

an alarm, telling of some type of disturbance or danger in the immediate area. The slap of the tail is the sound most associated with the beaver.

The beavers' dam work doesn't just benefit their own; many other species of wetland wildlife also take advantage of their efforts. Ducks, songbirds, and fishes all use the habitat resulting from beavers' dams.

Reproduction and Care of the Young

Beavers are monogamous meaning that the male mates with only one female. Further, in the case of the beaver the bond appears to be for a lifetime. Beavers begin mating relatively late in life compared to many other species of wildlife that are reproducing within the first year of their birth; most beavers are two and one-half to three years old before they mate. Breeding generally occurs in January and February, with young born a little (128 days) over four months later. On average, four kits are born in the litter. When born, the kits have a full coat of fur and their eyes are open. The young kits can also swim shortly after they are born and soon are eating tender bark. During the first month of their life, the adult male beaver will live outside the lodge away from his mate and offspring; at the end of this period he will then start to take an active role in rearing the young.

Young beavers stay in the family group approximately two years and usually leave, voluntarily or involuntarily, at about the time the next litter is due to arrive. They will then go out to establish their own colonies, dams, and lodges.

Management Plans

The Ohio Division of Wildlife doesn't manage specifically for the beaver. With the presence and maintenance of sound watersheds and waterways around the state, the beaver can virtually manage for itself. The beaver is found on many of our state wildlife areas where suitable habitat exists. The habitat management activities that occur on these areas and elsewhere around the state are designed to benefit the beaver and a host of other wildlife species. Each year wildlife biologists evaluate data and establish trapping season dates and bag limits for beaver harvest.

Viewing Opportunities

Beaver can be found throughout the state in most every suitable watershed. The best chances of seeing them are just before dark in the area of an active colony or dam site. Fourteen of Ohio's officially designated "Watchable Wildlife" areas are good places to see beaver. They are: North Chagrin Reservation, Grand River Wildlife Area, Tinkers Creek State Nature Preserve, Cuyahoga Valley National Recreation Area, Killbuck Marsh Wildlife Area, Cooper Hol-

low Wildlife Area, Crooked Run Nature Preserve, Beaver Creek Wildlife Area, Hueston Woods State Park, and Mosquito Creek, Woodbury, Salt Fork, Deer Creek, and Spring Valley wildlife areas. In addition, several more of our state wildlife areas are home to significant beaver populations. They are: Tycoon Lake, Highland-town, Berlin Lake, Fallsville, and Monroe Lake.

Do Something Wild!

The Ohio Division of Wildlife manages for wildlife diversity in the state. We attempt to create and/or conserve the habitat that will support as wide a diversity of wildlife as possible. Many species like the beaver are trapped in the state, but many more are not. The Division has a special program to manage and research non-game species that is supported by the generous citizens of the state of Ohio. With money either donated through the state income tax checkoff, by the purchase of wildlife license plates, or direct contributions to the Endangered Species Special Account, the Division is able to purchase critical habitat that is essential to sustaining many species of wildlife and to implement special efforts like the reintroduction of the osprey and the trumpeter swan to the state.

Contributions to our Wildlife Diversity Program are accepted throughout the year. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 2045 Morse Road, Bldg. G, Columbus, Ohio 43229-6693. All contributions, whether made on your income tax return or directly, are tax deductible.

At a Glance

Mating: Monogamous

Peak Breeding Activity: February-March

Gestation: 128 days

Young are Born: May-July

Litter Size: 2-8 kits, 4 is average

Young Leave Parents: Two years after birth

Number of Litters per Year: 1

Adult Weight: 30-70 pounds, 40 pounds average

Adult Length: 25-30 inches

Life Expectancy: 9-11 years, some live to be 20+

Migration Pattern: Year-round resident

Typical Foods: Bark and twigs of softwood trees including: aspen, poplar, birch, willow, maple, cottonwood, and alder; aquatic and marsh plants such as duckweed, arrowhead, cattail, sedge, bulrush, water lily, waterweed, and goldenrod

Native to Ohio: Yes

Ohio Division of Wildlife

Life History Notes

Bobcat

Scientific Name: *Felis rufus*

State Endangered Species

Publication 377
(399)

Introduction

The bobcat is a species that is native to Ohio, and one of seven cat species found in North America. Domestic cats belong to the same family, Felidae, as the bobcat. The bobcat has a small face with a short nose, small round ears and claws that retract—characteristics of all cats wild and domestic. However, the bobcat has only three upper jaw teeth behind its canine teeth; domestic house cats have four.

Bobcats are very rarely seen in Ohio as they were extirpated from the state around 1850. Prior to settlement, they were common throughout Ohio. This cat has been sighted occasionally since 1850 and may be on the verge of returning "home" to Ohio; between 1970 and 1996 there have been 24 verified reports of bobcats in the state, but 14 of these reports have occurred since 1990.

As with any species of wildlife, survival is a daily challenge. When they are young, bobcats may be preyed upon by foxes, owls, coyotes, mountain lions, and adult male bobcats. Under the best circumstances, a bobcat can live as long as 12 years in the wild. The average life span, however, is much shorter.

Description

The bobcat has short, dense, soft fur. Their coat color varies to include light gray, yellowish brown, buff, brown, and reddish brown on the upper parts of the body. The fur on the middle of the back is frequently darker than that on the sides. Underparts and the inside of the legs are generally a whitish color with dark spots or bars. The back of the bobcat's ears are black with white spots. The top of the tip of the ears are black; on the lynx, a cousin of the bobcat, the entire tip of the ear is black. The bobcat's tail is also black.

Bobcats' weight can vary widely with reported weights ranging from 12 to 68 pounds for an adult male and 9 to 34 pounds for an adult female. On average though, a male bobcat will weigh 28 pounds and a female 15 pounds. Adult male bobcats are between 32 and 37 inches long with the females slightly smaller, ranging from 29 to 34 inches in length. Regardless of sex, the bobcat has a five- to six-inch long tail.

Habitat and Habits

Generally, the bobcat is a solitary animal, territorial and elusive by nature. Adult females have an extremely low tolerance for other adult females in their home range. The males of this species are more tolerant of another male within the home range.

Bobcats can cover a sizeable territory. Considerable variation has been reported in the size of a bobcat's home range (from 0.2 to 78 square miles). The home range of the male is usually two to five times larger than the female's. Home range location and size is in part determined by the availability of food, sheltered rock outcrops, the animal's sex, geographic region, and the area's defensibility. The population density of the species in a region also has an effect; the greater the number of bobcats in an area, the smaller the home range. In Minnesota, bobcat ranges are estimated to be 2 to 46 square miles for a female and 14 to 61 square miles for a male.

Bobcats aren't as aggressive hunters as might be expected; they generally lie in wait for their prey, pouncing when an animal comes near. Prey pursuit rarely extends more than 60 feet. Rabbits and rodents are the bobcat's principal food. Deer are also occasionally taken, especially in the northern portions of the bobcat's continental range. Deer are killed by a bite through the neck, either in the jugular or spine region. Once killed, the bobcat will consume the hindquarters of the deer first. Uneaten portions are frequently stored and hidden and then consumed over a period of days. Bobcats will also consume insects, fish, reptiles, amphibians, birds, and other mammals.

Bobcats are considered crepuscular; they are most active in both the early evening and early morning hours. However, they may move around at anytime during the day or night. Most activities occur from three hours before sunset and on to midnight and begin again an hour before until approximately four hours after sunrise.

Bobcats have a range that extends throughout North America from southern Canada to northern Mexico, except along the mid-Atlantic Coast and through the Midwest where intensive human habitation and agriculture have led to its extirpation. Bobcats may be found in a wide variety of habitats ranging from lowland swamps to partially forested mountainous areas; understory density can vary from open areas such as a stand of pines to more dense areas of growth like a regenerating clear cut area.

Reproduction and Care of Young

Bobcats are polygamous breeders, meaning the male will mate with more than one female and no bond is established between the pair. Females of this species become sexually mature at 9 to 12 months of age; males are about 18 months old before they reach sexual maturity. Bobcats remain capable of reproducing throughout their lives.

Breeding may occur at anytime throughout the year; mostly it occurs from December through May with kittens produced about 63 days after mating. When available, the female will use an area of rock outcroppings as a natal den. The average litter size is two or three kittens, but as few as one and as many as six young may be born to a litter. The young are born helpless and are dependent on the mother. At birth, the bobcat is completely furred with its eyes closed. Young bobcats' eyes will open in 3 to 11 days, 10 days is typical. The young are fully weaned at eight weeks and they will disperse and begin life on their own in the fall and late winter.

Females generally produce one litter a year. A female that loses a litter may produce another litter in the same year. This is possible because bobcats are spontaneous ovulators—estrus occurs every 40 to 44 days in females that have failed to conceive.

Management Plans

Bobcats are classified as an endangered species in Ohio. Their status in the state is monitored through verified records and reported observations. They are afforded full protection under the law.

Viewing Opportunities

Due to their naturally elusive and secretive behavior patterns, an extremely low population, and the limited range within Ohio, the chance to see this endangered animal is limited. An encounter with a bobcat in this state is a rarity. Virtually all verified records of bobcats have been confined to the eastern, southeastern, and south-central regions of Ohio.

Do Something Wild!

The bobcat is among the majority of wildlife species in Ohio that are not hunted. All of these animals are vital parts of our overall ecosystem and contribute to wildlife diversity in the state. Helping us manage and research these species are the generous citizens of Ohio. With money they either donated through the state income tax checkoff, by the purchase of a wildlife license plate, or their direct contribution to the Endangered Species Special Account, the Division is able to purchase critical habitat essential to sustaining endangered species or provide educational materials on species such as the bobcat.

Contributions to our Endangered Species and Wildlife Diversity Program are accepted throughout the year. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 2045 Morse Road, Bldg. G, Columbus, Ohio 43229-6693. All contributions, whether made on your income tax return or directly, are tax deductible.

At a Glance

Mating: Polygamous

Peak of Breeding Activity: December through May

Gestation: 63 days

Young Are Born: Most litters are produced between early February and late July. Kittens are helpless and totally dependent on the female.

Litter Size: Litters range from 1 to 6 kittens. Average is 2+.

Number of Litters per Year: Typically 1. A second litter may be produced if the first litter is lost.

Adult Weight: The range is from 12-68 pounds for males and 9-34 for females. Male average is 28 pounds and female average is 15 pounds.

Adult Length: Males are 32-37 inches; females are 29-34 inches.

Life Expectancy: 12 years; the average is much less.

Migration Patterns: Non-migratory

Activity Periods: Bobcats are crepuscular; most movement occurs during the late afternoon and early evening hours and for a few hours at sunrise.

Typical Foods: Bobcats are carnivores and will consume a wide variety of insects, reptiles, amphibians, fish, birds, and mammals. Rabbits and, in northern latitudes, white-tailed deer are important components of the bobcat's diet.

Native to Ohio: Yes

Active or Potential Nuisance Species: No, but may be perceived by some as a potential threat.

The bobcat is classified as a state endangered species and receives full protection under Ohio law.


OHIO
DIVISION OF
WILDLIFE

The Bobcat

Project WILD

Classification	Mammal (Carnivore)
Diet	Birds, amphibians, reptiles, and small to medium sized mammals.
Habitat	Wetlands, forests, and mountains.
Size	Length: 30-37 in. Weight: 15-42 lbs.

Many people have a house cat or a farm cat. These cats are **domesticated**, which means that they have adapted to living with humans. Nursery rhymes such as "The Three Little Kittens," "Pussycat, Pussycat," and "Hey Diddle Diddle" all have cats as main characters. While domesticated cats are well known, many people are not familiar with Ohio's only true wildcat, the bobcat.

Bobcats look much like common house cats because of their facial features and body shape, but there are some differences. The size of a bobcat ranges from just slightly larger to four times as big as a large house cat. These cats also have stubby tails that are around six inches long. Another difference is that bobcats have tufts of black hair at the tips of their ears.

Bobcats are fierce hunters. They will stalk or just sit and wait for their prey to come near and then pounce on it once it is within a short distance. A bobcat will eat almost any small animal, but rabbits are their main food source. In some areas, bobcats even will attack a small deer! They have a hard time killing a deer because of the large size difference. However, once a bobcat catches a deer, it will not need to hunt for several days.

Bobcats are not social animals. A bobcat will usually live in a territory by itself. The size of a bobcat's territory depends on the habitat, food availability, and the bobcat population in the area. Their territories can be less than one square mile, or as large as 80 square miles. The edges of the territory are marked with urine. The scent lets other bobcats know when they cross into another cat's area.

Young bobcats are called kittens. The kittens are born anytime from late winter to mid-summer. A **litter** can contain up to six kittens. The mother bobcat catches and kills small animals for her kittens until they are several weeks old. Then, she brings them live prey and lets it loose in the den. This practice teaches the young kittens to catch their prey. Eventually, they go hunting with her. In a little less than a year, the kittens are almost full grown. This is when they must leave their mother to find a territory of their own.

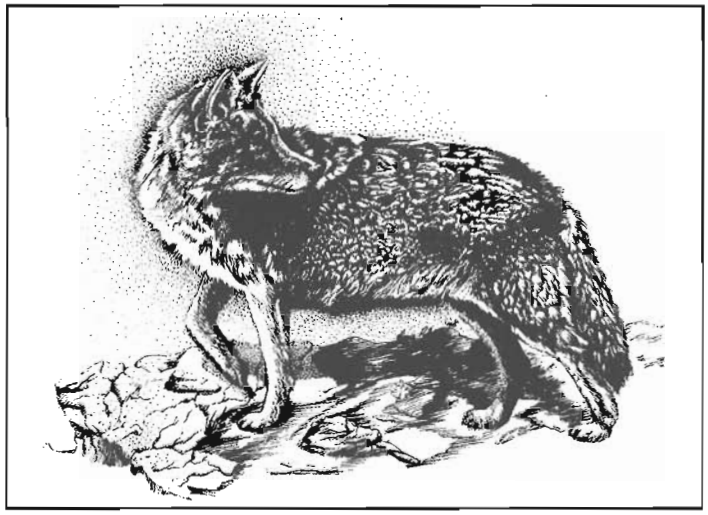
Although there are bobcats in Ohio, you are not likely to see one. They are rarely seen because they are **crepuscular**, meaning they hunt in the late evening and early morning hours. Also, bobcats are an **endangered species** in Ohio. At one time, they were found all across the state. However, after settlement, the bobcat populations declined. In the mid-1800s, they were **extirpated**. This was due to unregulated hunting and trapping. Slowly, the bobcat population is rising again thanks to laws created to protect them. They are mainly found in the southern and eastern parts of the state. However, sightings are still rare. The Division of Wildlife relies on sightings from upland game and bow hunters to help keep track of the numbers of bobcats that live in Ohio. So if you are out and about in Ohio's wild lands, let us know if you see a bobcat!

ODNR Division of Wildlife

Life History Notes

Coyote

Scientific Name: Canis latrans



Publication 376
(R407)

Introduction

Native American folklore is filled with tales of the coyote. This animal is either revered for its intelligence and ability to resolve a conflict or threat to its life or is frowned upon for being a cunning and deceiving manipulator, much as it is thought of in real life. The coyote is not native to Ohio, but it is present throughout the state today. Love or hate it, the coyote has the ability to make the best of a bad situation to survive or even prosper. Usually, we associate the coyote with the open, deserted lands of the west. As its presence in Ohio shows, this versatile animal can make a home most anywhere.

Description

Coyotes are currently found throughout the U.S., although prior to the 1900s they were generally located west of the Mississippi River. Only small pockets and sparse populations of coyotes were found east of the Mississippi at that time. The coyote made its initial appearance in Ohio in 1919 and today is found in all 88 counties. Historically, they have been associated with open territory, but have shown a preference in Ohio for making their homes in hilly farmland mixed with wooded areas. Coyotes have most often been found in the central portion of Ohio, ranging from Mercer County in the western half of the state to Harrison County near the eastern border. Ever adaptable, it is not unusual to find the coyote in a city setting. A pair was found in New York City in spring 1995!

The coyote is generally a slender animal, very similar in appearance to a medium-sized dog. Since the coyote and domesticated dog are from the same family, Canidae, the resemblance is more than a coincidence. Coyotes have a bushy tail which is usually tipped in black and is carried down at a 45 degree angle as the animal moves, unlike that of its other cousin the wolf. The majority of coyotes are grey, though some show a rusty, brown or off-white coloration. The coyote stands about one and one half to two feet tall and is between 41 to 53 inches in length. Males of this species are larger than the females and weigh anywhere from 20 to 50 pounds.

Habitat and Habits

The coyote is a nocturnal animal, active during the nighttime hours. However, when it is less threatened by man, it will hunt and move from place to place during the day. The coyote will hunt in unrelated (non-family) pairs or large groups, in search of small mammals including shrews, voles, and rabbits. The coyote will also eat fruits, grasses, vegetables, or carrion; it is an omnivore and adapts its diet to the available food source. Sheep predation normally occurs in the summer when additional food is needed by the adults feeding pups. Livestock carrion is used when available in the fall and winter months. Although the coyote has a notorious reputation for killing sheep and some other domesticated livestock, studies show that livestock makes up only 14 percent of the coyotes' diet.

Other coyotes are not the only animal to act as a hunting partner. The coyote has been observed following badgers as they dig and hunt for food. The coyote often takes the small prey the badger kicks up and doesn't eat for itself. This apparently is an enduring practice, as pre-Columbian artifacts show the coyote and badger engaged in this hunting practice.

The coyote is no different than any other species of wildlife in that it needs shelter, food, and water to establish itself. The coyote's strength is that it can adapt and exploit most any habitat to its advantage. While most wildlife species have avoided developed areas and often declined as a result of man's expansion, the coyote seems to have thrived.

It's not hard to see how an adaptable animal like the coyote could utilize urban areas to its advantage. Ample food can be found in dumpsters or garbage cans, and squirrels, rabbits, and raccoons are all fairly common in the city. Coyotes have been found taking shelter in drainpipes; abandoned buildings can also serve as a home. Most major cities were established near or along major waterways, thus a city dwelling coyote wouldn't have to go far in search of water. Waterways and the adjacent land also provide travel lanes or corridors. Interestingly, the primary place where coyotes have been located in Ohio is in the vicinity of major watersheds. The coyote's primary threat remains man; but by being active at night, it significantly reduces its contact with humans. So a city territory could provide as many opportunities and resources as the natural range of open farmland and woodlots.

Reproduction and Care of Young

Coyotes are monogamous, they pair for life with one mate. Breeding occurs sometime between January and March. The pregnant female carries her young a little over two months, and anywhere between 1 and 12 pups are born in April or May. The pups are born helpless—they are blind and unable to fend for themselves for the first few weeks of their lives, much like domesticated puppies. The female selects, prepares, and maintains the den. Occasionally, two or three females will share a large den area. Related females will sometimes act as helpers in the care of offspring of other coyotes in the den.

Both parents hunt for food and feed the young. However, the male takes the lead role when the pups are newborns, obtaining enough food for both his mate and offspring. The parents will regurgitate their stomach contents for their offspring's meals. At about three weeks of age, the young leave the den under the watch of their parents. At 8 to 12 weeks of age, the pups are taught hunting skills. The coyotes stay together in a family unit throughout the summer into mid-fall when the young will break from the family unit and develop territories of their own. It is not unusual for young female coyotes to remain in the family unit into the following year; young males that have either never left the unit or that attempt to rejoin it the following year are run off by the male.

Female coyotes are cited as being exceptional mothers. If her pups are threatened at their den location, the mother will seek out a new den and move the pups immediately. A coyote mother was observed moving her pups on three separate occasions when the dens became unsafe.

The coyote is capable of breeding and producing fertile offspring with a number of its cousins, including the domestic dog (the offspring of this type of mating is referred to as a "coydog"), wild dogs, and wolves. The mixed offspring of the coyote can present a good deal of confusion as to whether or not a real coyote has been sighted in an area. Positive identification can only be made by examination of the skull. Research has shown that in Ohio, 98 percent of the animals sighted, captured, or killed are indeed coyotes. Only a small portion (two percent) have been identified as a coyote-dog mix.

Management Plans

The Division of Wildlife does not manage for the establishment or expansion of the coyote in Ohio. Division personnel assist farmers and other landowners in identifying and controlling nuisance coyotes. Division staff also work to inform and educate the public about the coyote and its presence in the state. Research is ongoing on resident coyote populations. Biologists are studying the animals' behavior, movements, and population in the state.

Viewing Opportunities

For all its ability to adapt and cope with the presence of man, the coyote remains an elusive, almost invisible resident. More likely than not, you will hear a coyote rather than see one. Its characteristic lonely howl can be deceiving. The way the sound of the howl carries, it can seem as if the cry is coming miles away from where the coyote is actually located. Who knows, that distant forlorn call may really be as close as your own backyard!

At a Glance

Mating: Monogamous (male and female pair for life)

Peak Breeding Activity: January through March

Gestation Period: Approximately 63 days

Litter Size: 1-12 pups

Young are Born: April and May and are helpless; begin leaving the den with parents at 3 weeks of age

Number of Litters per Year: 1

Adult Weight: 20-50 pounds

Adult Height: 1 1/2-2 feet tall

Adult Length: 41-53 inches

Life Expectancy: 3-10 years

Migration Patterns: Year-round resident; juveniles will break from the family unit and establish their own territory anywhere from 10 to 100 miles away.

Feeding Periods: Has shown a preference for nocturnal activity, but in a secure environment, will hunt during the daylight hours.

Typical Foods: Omnivorous (will eat what's available); small mammals (voles, shrews, rabbits, mice), vegetables, nuts, and carrion. Unchecked, they will eat livestock, particularly sheep and chickens.

Native to Ohio: No

Active or Potential Nuisance Species: Yes


OHIO
DIVISION OF
WILDLIFE

The Coyote

Project WILD

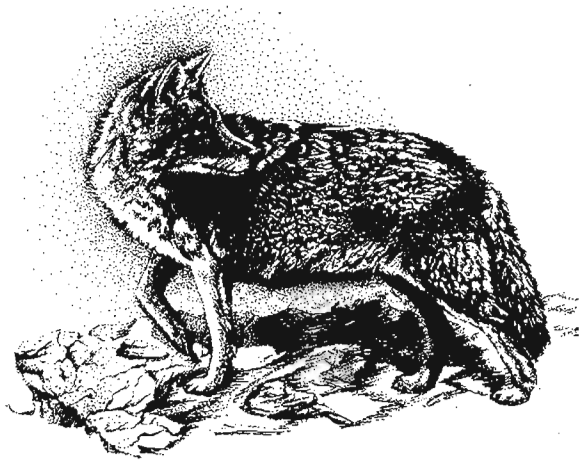
Classification	Mammal (Carnivore)
Diet	Small mammals (voles, shrews, rabbits, mice), vegetables, nuts, and ***carrion.***
Habitat	Grasslands (historically), now found anywhere in the vicinity of a watershed.
Size	Length: 3½-4½ ft. Weight: 20-50 lbs.

Stories about coyotes and coyote characters can be found in many books and cartoons. The Native American Indians also told stories about the coyote. They called the coyote "The Trickster" because it would often outsmart them when it was hunted or when they tried to keep the coyote away from their villages. And they watched as the coyote survived even the harshest weather. The first white settlers considered the coyote, like other ***predators***, an enemy. There were tales told of coyotes stealing babies in the night and raiding chicken coops and sheep pens.

There were no coyotes in Ohio when the land was first settled. Today they live everywhere in the state. A hundred years ago, coyotes were only found west of the Mississippi River. But as the forests of Ohio were cleared for farms, the coyote moved in and became a part of Ohio's wildlife.

Coyotes are about as big as a medium-sized dog. They have a bushy tail with a black tip. Most coyotes are gray; a few can be reddish brown or pale tan.

Coyotes are ***nocturnal***, or active at night. They often hunt together, but don't have packs or family groups like their larger cousin the wolf. Coyotes are very good at catching mice. They are fun to watch as they stand very still in deep snow and watch the ground until they see or hear the mouse move. Then the coyote hops straight up and comes down on its front feet to try to catch the mouse.



Today the coyote lives almost everywhere, even in our cities. They survive in towns by living off of the food found in dumpsters or garbage cans. They also catch and eat the more common animals found in cities such as squirrels and rabbits. Coyotes sometimes find shelter in drainpipes and old buildings. And since many cities are built around big rivers and lakes, water is usually easy to find. By being nocturnal, coyotes avoid their biggest threat, people.

Coyote pairs mate in late winter and the pups are born in April or May. For the first few weeks of their lives they are blind and helpless, much like a pet puppy. The female nurses the pups and they grow quickly. As the pups get older, both parents will hunt for food and feed the young. Other females also help out, much like an aunt or sister that baby-sits.

Because they live near people, coyotes can become a problem for farmers and ranchers. ***Biologists*** study Ohio's coyotes to learn more about the their behavior and movements in the state. Help is provided to farmers and landowners so they can learn how to control individual coyotes that keep causing problems.

The coyote has the remarkable ability to ***adapt*** to different ***habitats*** and to share space with people, but it remains an almost invisible neighbor. We can admire them for their cunning, or dislike them for the problems they sometimes cause, however, the coyote is here to stay.

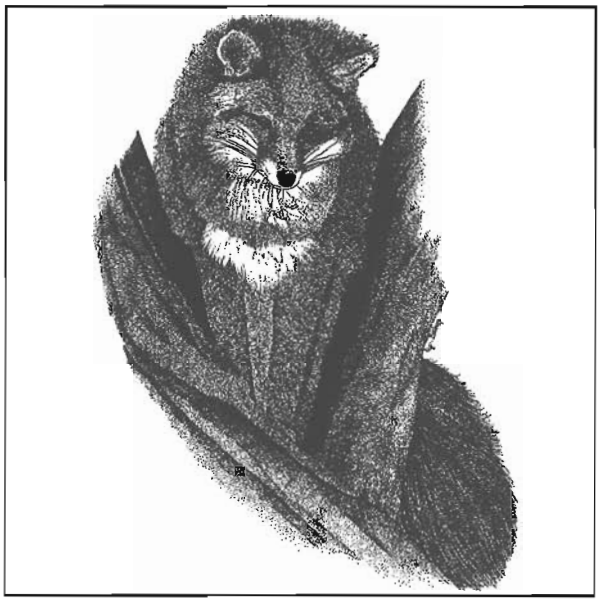
You may never see a coyote in the wild, but maybe, if you are lucky, some cool, moonlit night you may hear the barking and lonely howl of a wild Ohio coyote.

Ohio Division of Wildlife

Life History Notes

Gray Fox

Scientific Name: *Urocyon cinereoargenteus*



Publication 112
(1099)

Introduction

The gray fox is one of two fox species in Ohio and one of four in North America. The state's other fox is the red fox. The Arctic and swift foxes are the other species found in North America. North American foxes inhabit a wide range of habitats from deserts to forests to snow covered tundras. This isn't completely surprising as the gray and other foxes are members of the same family of adaptable animals that includes the wolves, coyote, and domestic dog--Canidae.

The gray fox inhabits about three-fourths of the United States and only a tiny portion of southernmost Manitoba, Canada. It is not found in the high plains, northern Rockies or the Pacific Northwest. Its range does, however, extend into Mexico and Central and South America. In Ohio, it's found in all 88 counties, but is much more common in southeastern Ohio where woodlands, its preferred habitat are more extensive.

Description

The gray fox's coat color is a salt and pepper gray. A black stripe runs from the base of the tail and ends in a black tip. Another black stripe crosses its face from the nose to the eye and then to the side of the head. Like the red fox its cheek and throat area are white and this color extends on the gray fox to the lower jaw. There is a reddish patch on the side of its head below its ear. Its belly is white and a reddish band separates it from the gray sides. The legs and back of the ears are an orange color while the feet are gray.

The gray foxes' body is similar to a red fox with a slender body and long legs, but its ears and muzzle are not as large or pointed respectively.

Habitat and Habits

The gray fox is native to Ohio. The extensive forest land that existed prior to settlement was well suited to the gray fox. As the state was settled and cleared, gray fox habitat declined and red fox habitat expanded. Wooded areas and partially open brush land with little human presence are the preferred habitat for gray foxes in Ohio.

Gray foxes do not hibernate; under extreme winter weather conditions they will reduce activity levels and take shelter for a day or two.

The gray fox has a distinct bark that is usually repeated four or five times in a row. It will also squeal or growl.

Gray foxes are nocturnal creatures, meaning that they are most active at night, feeding and moving from place to place. When pressured it will climb a tree or emit an odor from its anal glands. The gray fox will also climb a tree to sun itself.

Reproduction and Care of the Young

Gray foxes generally begin reproduction activities later than red foxes. In Ohio, mating activities occur about a month after those of the red fox, in February and March, but sometimes as early as January. Gray foxes are monogamous meaning that the male mates with only one female and that those two form a pair bond, working together to care for their offspring . A gray fox female will make a den in a hollow log or tree, or under a rock pile for her kits. Less often, a leaf and bark-lined underground burrow is used.

Female gray foxes carry their young for nearly two months (53 days); as such, most gray fox kits are born in April or May. Litters typically are made up of four or five kits. While the female is nursing her offspring, the male will bring her food. He continues in this role until the young are about three months old and can go with their parents on hunting trips where they learn a basic survival skill. Gray foxes have a reputation as excellent mousers. By fall of the same year, the family unit breaks up; the young are mature enough to go out on their own. Young gray foxes disperse anywhere from one to ten miles from their home den to establish their own home ranges or territories.

Management Plans

The Ohio Division of Wildlife doesn't manage habitat specifically for the gray fox. However, the gray fox can be found on many of our state wildlife areas where suitable habitat exists. The habitat management activities that occur on these areas and elsewhere around the state are designed to benefit the gray fox and a host of other wildlife species. Each year wildlife biologists evaluate data and establish hunting and trapping season dates and bag limts for the gray fox.

Viewing Opportunities

Gray foxes are found in all 88 counties of Ohio. The best chances of seeing them are in rural areas where there is extensive woodlands. Four of Ohio's officially designated "Watchable Wildlife" areas are good places to catch a glimpse of the elusive gray fox: Blacklick Woods Metro Park, Delaware State Wildlife Area, Fowler Woods State Nature Preserve, and Shawnee State Forest.

Do Something Wild!

The Ohio Division of Wildlife manages for wildlife diversity in the state. We attempt to create and/or conserve the habitat that will support as wide a diversity of wildlife as possible. Many species like the gray fox are hunted in the state, but many more are not. The Division has a special program to manage and research nongame species that is supported by the generous citizens of the state of Ohio. With money either donated through the state income tax checkoff, by the purchase of wildlife license plates, or direct contributions to the Endangered Species Special Account, the Division is able to purchase critical habitat that is essential to sustaining many species of wildlife and to implement special efforts like the reintroduction of the osprey and the trumpeter swan to the state.

Contributions to our Wildlife Diversity Program are accepted throughout the year. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 2045 Morse Road, Bldg. G, Columbus, Ohio 43229-6693. All contributions, whether made on your income tax return or directly, are tax deductible.

At a Glance

Mating: Monogamous

Peak Breeding Activity: February-March

Gestation: 53 days

Young are Born: April-May

Litter Size: 4 or 5 kits

Young Leave Parents: In the fall, about 5-7 months after birth

Number of Litters per Year: 1

Adult Weight: 5-14 pounds

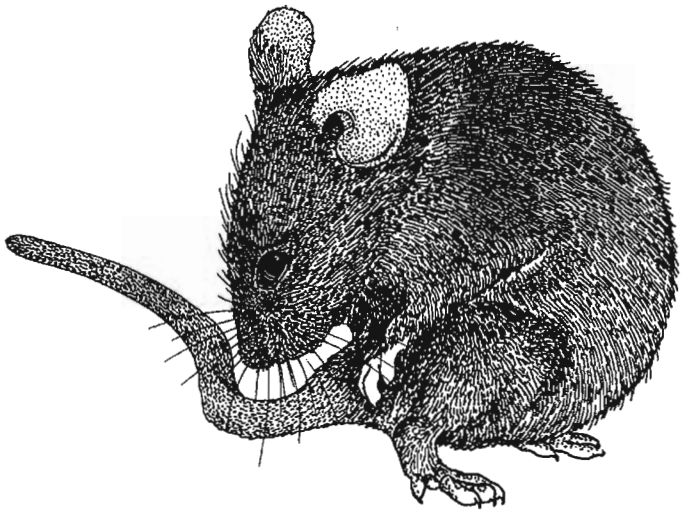
Adult Length: 21-29 inches

Life Expectancy: 6-8 years, oldest known 10 years

Migration Pattern: Year-round resident

Typical Foods: Mice, rats, rabbits, and other small mammals; also birds, insects, eggs, fruits, and acorns.

Native to Ohio: Yes



Long-tailed Weasel in Ohio

Scientific name: *Mustela frenata*

Other common names: Ermine, ferret, stoat, common weasel

LIFE HISTORY NOTES

Mating: probably monogamous. **Breeding period:** July-August. **Gestation:** variable, due to delayed implantation of embryo in uterus; range 205-337 days; average 280 days. **Birth period:** late April-early May. **Litters per year:** 1. **Litter size:** 4-8, average 6. **Birth weight:** 1/9 ounce (3 grams). **Eyes of young open:** at 5 weeks. **Young leave nest:** at 7-8 weeks. **Young weaned:** at 5-6 weeks. **Breeding age:** females at 3-4 months; males at 1 year. **Adult weight:** male 7-12 ounces (198-340 grams); female 3-7 ounces (85-198 grams). **Adult body length:** male 9 to 10-1/2 inches (229-267 mm); female 8-9 inches (203-229 mm). **Adult tail length:** male 4-6 inches (102-152 mm); female 3-5 inches (76-127 mm). **Life expectancy:** 1-2 years; maximum 4-5 years. **Movement:** home range 30-40 acres (12-16 hectares). **Feeding period:** mostly at night. **Typical foods:** any small mammal up to rabbit size (rats and mice are preferred foods); also birds, eggs, and insects.

The long-tailed weasel is a slender, long-bodied, short-legged bundle of enormous energy, with a very small head, long neck, and short, rounded ears. The underparts are white with shades of dull yellow. In southern Ohio most long-tailed weasels retain their uniformly dark brown upper pelage during winter. Progressing farther north, the number with a white winter coat increases, although even in northernmost Ohio more brown weasels than white ones are observed in winter.

This small relative of the mink inhabits a broad variety of habitats, including forests, brushlands, and prairies--especially near water. Since these vegetative types were present in pre-pioneer days, the longtail probably was common at that time. Weasels are small and secretive, and are difficult to observe, but they are considered common throughout Ohio's farmlands, forests, prairies, swamps, and marshes. Almost any place with abundant water and rodents is likely to be occupied by a weasel.

The longtail's den may be in nearly any sheltered, relatively undisturbed spot: in a rock pile, stump, log, old foundation, or pile of rotting vegetation; under tree roots or a barn; or underground in a mouse burrow or old woodchuck den. The nest is lined with feathers, fur, and other remnants of past conquests.

Young longtails are tiny at birth, but they grow rapidly and are hunting and nearly independent at two months. The male is thought to bring food to the young and to remain with the family until the young can shift for themselves.

Weasels have many enemies in the wild. Eagles, hawks, owls, and mink prey on them, and they have been known to die of excitement in captivity. A high-pitched shriek is their most common sound, but they also hiss, bark, snarl, and make peculiar noises that sound like "took-took-took" and "choo-choo-choo."

Agile and constantly on the move, longtails spend most of the time seeking food, usually following their highly developed sense of smell. Weasels are superb mousers, but on occasion will raid a poultry house--a single individual can nearly wipe out a full henhouse in an evening.

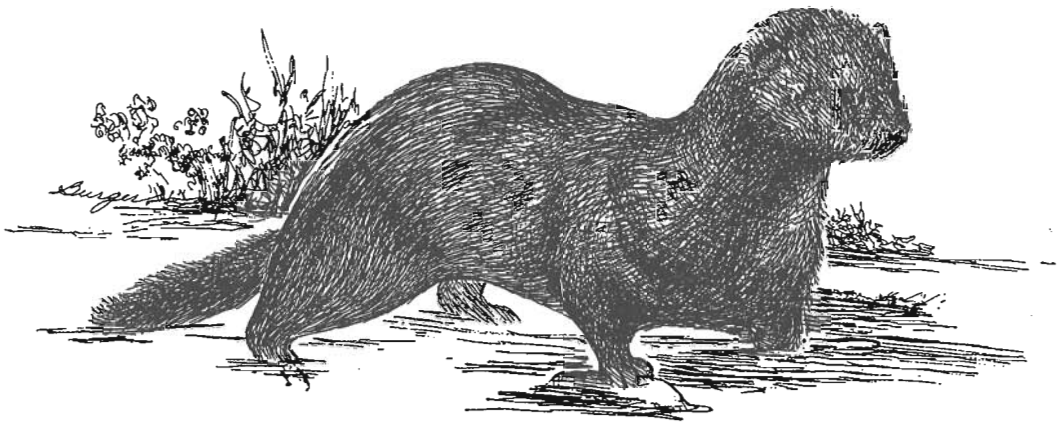
Weasels provide recreation for Ohio trappers. The pelt, although small, is of high quality. The individual henhouse-raider is no friend of the farmer, but the weasel's relentless destruction of mice and rats makes it an overall benefit to agriculture. Its ability to thrive in a great variety of habitats ensures it will remain an interesting, though seldom-seen member of Ohio's fauna for a long time.

OHIO DIVISION OF WILDLIFE

Mink in Ohio

Scientific name: *Mustela vison*

Other common names: Vison (French)



LIFE HISTORY NOTES

Mating: polygamous. **Breeding period:** January-March. **Gestation:** variable, due to delayed implantation of embryo in uterus; range 39-76 days; average 42 days. **Birth period:** April-May. **Litters per year:** 1. **Litter size:** 2-10; average 6. **Birth weight:** 1/5 ounce (5.7 grams). **Eyes of young open:** at 5 weeks. **Young leave nest:** soon after weaning. **Young weaned:** at 8-9 weeks. **Breeding age:** 1 year. **Adult weight:** male 1-1/2 to 3 lb (0.7-1.4 kg); female 1-1/4 to 2-2/5 lb (0.6-1.1 kg). **Adult body length:** male 13-17 inches (33-43 cm); female 12-14 inches (30-36 cm). **Adult tail length:** male 7-9 inches (178-229 mm); female 5-8 inches (127-203 mm). **Life expectancy:** 3-4 years; maximum 10 years. **Movement:** home range unknown; males may range several miles. **Feeding period:** mostly at night. **Typical foods:** small mammals up to muskrat size (muskrat is a preferred food); also birds, frogs, eggs, fish, and crayfish.

The mink is weasel-like in appearance, but considerably larger and with a bushier tail. It has small, rounded ears, beady eyes, short legs, and sharp claws. The mink's fur is dark, a rich chocolate-brown to almost black, often with a white patch on the chest or chin and white spots scattered on the underparts. The coat is lustrous, durable, and one of the most beautiful in the world.

This sleek furbearer probably was common in Ohio before settlement, and today it occurs in every county. Because of its preference for small streams cluttered with vegetation or with wooded banks, the highest population densities occur in eastern and southeastern Ohio. The mink is almost invariably found near water-both the running waters of streams and rivers and the standing waters of marshes and lakes--and especially in wooded or brushy areas. It likes fairly heavy cover near the water. Small streams with many windfalls are ideal mink habitat. Maintenance of wetlands and stream bank cover is one of the best habitat management practices for encouraging mink populations.

The mink is a solitary, restless creature which associates willingly with other mink only during the mating season. The female usually makes her den in a burrow along the bank of a stream or lake. or under a stump or log. A muskrat hole in a stream bank or under a stump with exposed roots is an ideal location. The female assumes all responsibility for rearing the young, which become full grown at five months.

Mice and muskrats make up most of the mink's diet. It is reputed to kill more than it can eat, and to store the excess; much of the larder is pilfered by other animals.

The mink does not hibernate. No weather is too cold or too wet to interrupt its single-minded preoccupation with hunting. Although territorial by nature, the male often wanders far afield. When males meet, a violent fight is likely to ensue, and may leave one or more dead mink. An angry mink can screech, hiss, snarl, and bark. A contented mink may purr or churr. Like its distant relative the skunk, the mink has anal scent glands which can excrete a fluid that smells somewhat like diluted skunk musk.

The mink is an elusive furbearer prized by the trapper both for its pelt and for the great skill required to capture it. To the hiker the sight of a mink is a thrilling surprise that must be experienced quickly, before the dynamic creature can scurry away to a place of concealment. Channelization of rivers and streams and destruction of wetlands and back-country wild areas pose continuing threats to the future of the mink population in Ohio.

OHIO DIVISION OF WILDLIFE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The Muskrat

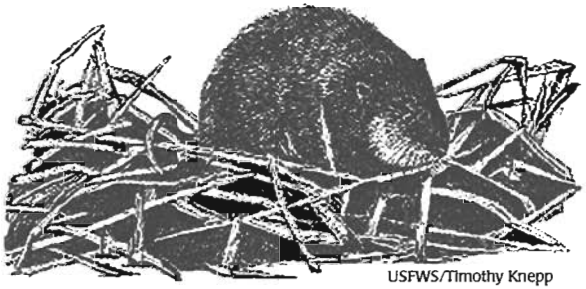
Project WILD

Classification	Mammal (Rodent)
Diet	Mostly aquatic vegetation, a few terrestrial plants, and sometimes freshwater clams, frogs, crayfish, and fish.
Habitat	Ponds, streams, and marshes in most of the U.S. and Canada.
Size	Length: 16 to 24 in. Weight: 1¼ to 4 lbs.

If you have ever walked by a pond or stream and noticed small mounds of marsh plants sticking up out of the water, then you have probably been in muskrat territory! Muskrats are large freshwater ***rodents*** that look very much like a beaver, but are actually related to mice and rats. This is where they get the second part of their name, because their tail looks like that of a rat. The first part of their name comes from the strong-smelling odor, or musk, that the muskrat produces during mating season and to mark its territory. Muskrats have had many names given to them over the years: marsh rabbit, mud cat, mud beaver, and the Algonquin Indian tribe called it *musquash*.

Muskrats have two coats of hair. The thick fur undercoat keeps the muskrats warm in winter, and the outer coat is made up of long, shiny waterproof hairs. The muskrat's fur is a dark brown that gets lighter around its throat. The tail is long, flattened, and nearly hairless, making it a perfect rudder for swimming.

Swimming is what muskrats do best. They can swim up to speeds of two to three miles per hour. It would take an Olympic swimmer to catch up with them! Muskrats spend much of their time sleeping during the day and slip into the water in the evening. They dive underwater for food, or in search of vegetation for their lodges. Like beavers, muskrats also build lodges. However, their lodges consist of more aquatic vegetation than sticks. Sometimes they even make their own feeding stations to protect themselves from ***predators*** while they are eating. These private dining rooms are made from weeds and plants and are built on top of floating rafts of reeds.



USFWS/Timothy Knepp

The muskrat lodges usually have one nesting chamber and several underwater entrances for quick escape routes. Females normally produce 1 to 5 litters per year, with each litter containing four to seven young. That's up to 35 young a year! The females will often breed while still nursing. Young are born three to four weeks after breeding and are born hairless. Only two weeks after birth the young muskrats have fur and are able to swim. They are able to take care of themselves within a month and are on their own.

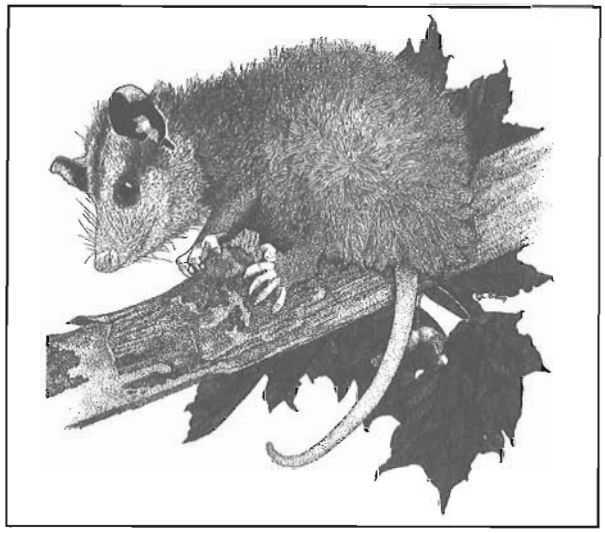
Muskrats are part of a group that is known as ***furbearers***. Muskrats are the most important and most numerous of the furbearers in Ohio. Their rich, dark brown fur is very popular for coats. The yearly average of furbearers trapped in Ohio is around 600,000 and muskrats make up half of this number.

Muskrats are very common in Ohio. Next time you visit a pond or stream watch carefully for signs of muskrats. Sure signs that muskrats are in the area are small feeding stations, cuttings of plants floating in the water, or a lodge near the shore. And if you are very lucky you may even see a muskrat swimming across the pond carrying a load of leaves or aquatic plants.

Ohio Division of Wildlife

Life History Notes
Opossum

Scientific Name: *Didelphis virginiana*



Publication 96
(1099)

Introduction

The opossum is North America's only marsupial – a mammal that carries its underdeveloped young in a pouch until they are capable of living independently. It is also one of the oldest and most primitive species of mammal in North America. This animal is little changed from its ancestors of 70 million years ago.

Opossums were probably rare in the vast forests of unsettled Ohio, but began to take hold as the land was cleared for agriculture. Today they are found in every county of the state, and slightly more abundant in southern Ohio.

Description

An adult opossum is about the size of a large house cat, with coarse grizzled grayish fur. It has a long, scaly tail, ears without fur, and a long, pointed snout that ends in a pink nose.

Habitat and Habits

Farmland is preferred habitat for the opossum, especially wooded pastures adjacent to a lake, stream, marsh, or swamp. This affinity can contribute to outbreaks of *Equine Protozoal Myletis (EPM)*. Horses across the country, and particularly in the Midwest and South have contracted the disease which results in neurological problems including lack of coordination and awareness of limb placement. The opossum is the carrier of the protozoa, passed through its feces, causing this ailment. There is no cure for this disease which is often left undiagnosed as its symptoms mimic other problems and ultimately it can be fatal to the horse. Horse owners should consider allowing hunters and trappers permission to take these animals on their property during legal seasons as a precautionary effort.

Opossums are quite adaptable and can also be found in suburbia and the city. Their ideal habitat, however, is an area with woods, wetlands and farmland interspersed. The den is usually situated in a wooded area near water. The opossum is an opportunist that will take shelter anywhere it can stay dry and safe from predators. It often uses the deserted dens of other animals, brush piles, tree holes or openings under old buildings as shelter.

The opossum's best known behavior is that of "playing possum." When threatened, the opossum may hiss and bare its teeth. More likely, though, it will roll over and lay motionless, appearing to be dead. When the danger is past, the possum "revives" and resumes its activities.

Reproduction and Care of the Young

Opossums are polygamous, meaning males mate with more than one female and play no role in rearing the young. A female opossum carries her young approximately two weeks before they are born. Opossums are undeveloped, and tiny (1/15 ounce) at birth. The offspring must crawl to a nipple in the mother's pouch to survive. The nipple will swell in the offspring's mouth, providing a secure attachment and

constant food supply for two months. At about three months of age, young opossums emerge from the pouch for short periods and will hitch a ride on the mother's back to get from place to place. In several days to a week the young leave the "nest" for good.

Management Plans

The Ohio Division of Wildlife doesn't manage habitat spcifically for opossums. However, opossums can be found throughout the state and at many wildlife areas where suitable habtiat exists. The management activities that occur on these areas and elsewhere around the state are designed to benefit opossums and a host of other wildlife species. Each year wildlife biologists evaluate data and establish hunting and trapping season dates and bag limits for opossums.

Viewing Opportunities

Opossums are found throughout Ohio. The best chance of seeing them is where farmland, wetlands, and woods merge. Five of Ohio's officially designated "Watchable Wildlife" areas are good places to see opossums: Lake Isaac Waterfowl Sanctuary, Delaware Wildlife Area, Irwin Prairie State Nature Preserve, Ottawa National Wildlife Refuge, and Spencer Lake Wildlife Area.

Do Something Wild!

The Division of Wildlife manages for wildlife diversity in the state. We attempt to create and/or conserve the habitat that will support as wide a diversity of wildlife as possible. Many species like the opposum are hunted and trapped in the state, but many more are not. The Division has a special program to manage and research nongame species that is supported by the generous citizens of the state of Ohio. With money either donated through the state income tax checkoff, by the purchase of wildlife license plates, or direct contributions to the Endangered Species Special Account, the Division is able to purchase critical habitat that is essential to sustaining many species of wildlife and to implement special efforts like the reintroduction of the osprey and the trumpeter swan to the state.

Contributions to our Wildlife Diversity Program are accepted throughout the year. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 2045 Morse Road, Building G, Columbus, Ohio 43229. All contributions, whether made on your income tax return or directly, are tax deductible.

At a Glance

Mating: Polygamous

Peak Breeding Activity: February-March, but can run from January-October

Gestation: 12 – 13 days

Young are Born: Peak is March-April, but can be as long as February-November

Litter Size: 5-25; average is 9

Young Leave Parents: At 3 months

Number of Litters Per Year: 1-3; 1 is typical in Ohio

Adult Weight: 4-15 lbs.; 5 is average

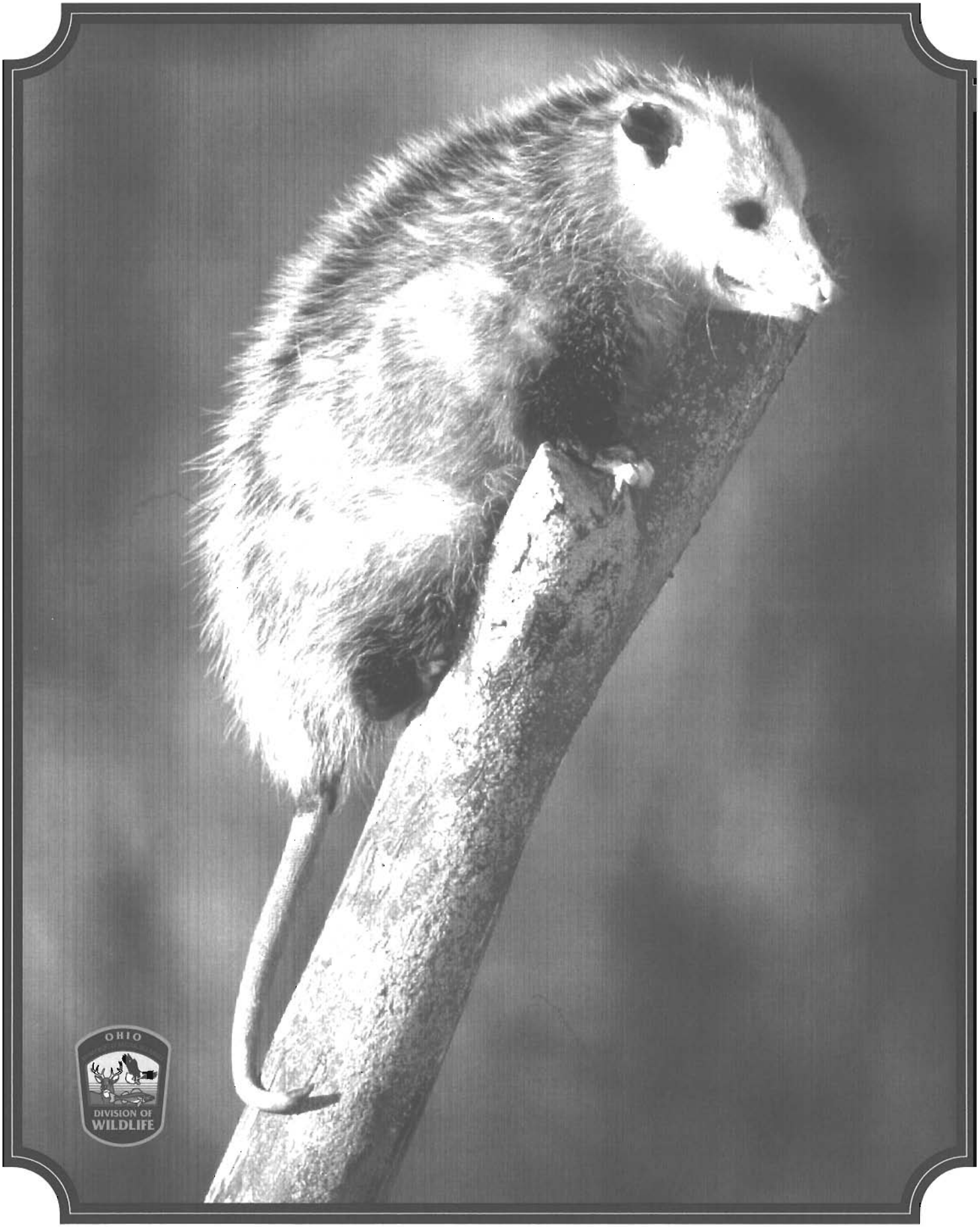
Adult Length: 15-20 inches

Life Expectancy: 1-2 years; 7 is maximum known

Migration Patterns: Year-round resident; individuals wander widely with a home range of 15-40 acres

Typical foods: Omnivorous. Will eat carrion, insects, fish, reptiles, eggs, fruits, vegetables, and nuts

Native to Ohio: Yes


OHIO
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The Virginia Opossum

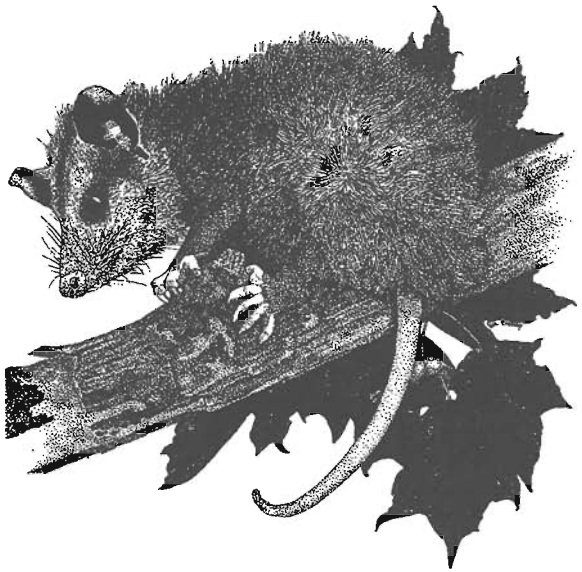
Project WILD

Classification	Mammal (Marsupial)
Diet	A wide variety of foods including road kill, frogs, snakes, earthworms, salamanders, crickets and grasshoppers, and butterflies.
Habitat	Near rivers and streams in open woods, farmlands, and even suburbs and cities.
Size	Length: 25 to 40 in. Weight: 4 to 14 lbs.

Has anyone ever told you to "play possum?" If so, this phrase comes from the animal called the opossum. When enemies attack opossums, they pretend to be dead to trick the ***predators***. But some scientists now think that opossums may actually faint because they are so frightened. They may actually lie still for a minute or so, or even up to an hour. So next time someone tells you to play possum, lay very still and pretend to be asleep.

Opossums are part of a family called ***marsupials***. Most of the marsupials in the world live in Australia, like the kangaroo or the koala. The opossum is the only one that lives in North America. There are 65 different species of opossums in North, Central, and South America; however, the Virginia or common opossum is the only one native to the United States and Canada.

What makes marsupials special compared to other animals is the pouch they have on their abdomen. Pouches are very important to opossums. Young are born only 12 days after mating and are furless, blind, deaf, and are smaller than a honeybee. As many as 20 newborn Virginia opossums could be held in a tablespoon! The baby opossums have to find the pouch to survive. Once they find the pouch, each begins nursing. The young are in the pouch from six weeks to two months and nurse continuously during that time. After they are old enough to leave the pouch, young opossums still depend on their mother for transportation. Each one climbs on her back and attaches by clutching her fur with their front claws or wrapping their tail around hers. It's one giant piggyback ride! After the young are three months old they are able to take care of themselves.



Opossums are very strange looking creatures, indeed! The Virginia opossum is about the size of a small dog or cat. It has thick grayish-white fur that gives way to a white head with a pointed pink nose. Opossums have 50 teeth! That is more than any other ***mammal*** in North America! Opossums have five toes on each foot. The back feet have a thumb-like big toe and are used like hands to grasp and climb. Their long ***prehensile*** tail looks like that of a rat's and is used to help the opossum grip tree branches for balance.

The Virginia opossum is a ***nocturnal*** animal that usually lives alone. It may travel up to two miles a night on its search for food. Opossums are ***omnivores*** and will eat almost anything. Many Virginia opossums live near farms. Most farmers tolerate them because opossums eat lot of insects that destroy crops. However, opossums are also known for digging up vegetable gardens. If you are walking through your garden and notice half-eaten tomatoes tossed to the side, then you know that an opossum has been feasting! While the favorite foods of the Virginia opossum consist of insects, it also eats snakes, bird's eggs and mice. They are also quite common in the city and are seen searching for dinner around garbage cans or stealing pet food from bowls left outside.

Raccoon in Ohio

Scientific name: *Procyon lotor*

Other common names: 'Coon, ringtail

LIFE HISTORY NOTES

Mating: monogamous. **Breeding period:** late January-March; peak of activity in February. **Gestation:** 63 days. **Birth period:** March-June; peak period April-May. **Litters per year:** 1. **Litter size:** 2-7; average 4. **Birth weight:** 2½ ounces (71 grams). **Eyes of young open:** at 3 weeks. **Young leave nest:** at 2 months. **Breeding age:** 1 year. **Adult weight:** 5-35 lb (2.3-15.9 kg); average 15-18 lb (6.8-8.2 kg). **Adult body length:** 18-28 inches (46-71 cm). **Adult tail length:** 8-12 inches (20-30 cm). **Life expectancy:** 3-4 years; maximum 13 years. **Movement:** home range ½-1 mile (0.8-1.6 km). **Feeding period:** mostly at night. **Typical foods:** omnivorous--fruits, nuts, grains, eggs, insects, crayfish, frogs, and mice.

The raccoon is a medium-sized mammal with grizzled gray-black fur, and is easily recognized by its black face mask and alternating rings of black and yellowish-white on its bushy tail.

Ohio pioneers found the raccoon a common species. Like many other furbearers, it helped to make life more bearable for the settlers. In 1804 the Western Library Association was started with books purchased from the sale of raccoon pelts collected by settlers in Amesville, in Athens County. This library association later became known as The Coonskin Library.

A familiar resident throughout Ohio, the raccoon occurs in many areas in densities of up to one per 15 acres. Woodlots with neighboring wetlands support the highest numbers, but this highly adaptable species can succeed in most habitat types, and even in close proximity to man.

The raccoon's diverse diet is made possible partly by its ability to crush hard foods such as acorns and shellfish with its large, low-crowned molars. Although it does much foraging in water, and sometimes will dunk its food before eating, food washing is not an invariable practice--many items are consumed unwashed, just as they are found.

Large, hollow trees in woods are preferred den sites, but the nest may be in a ground burrow, rock crevice, drain tile, or old building. After mating, the male shows no interest in family life, and leaves all responsibility for rearing the young to the female.

Raccoons are fairly sociable with their own species, and often den with others. They do not hibernate, but during severely cold weather they may nap for long periods in a secure shelter. Warm weather will send them out food gathering again.

The raccoon can voice a variety of sounds, ranging from the growls and snarls of an angry male to the low twittering of a female reassuring her young. It can also give vent to a wailing howl.

The nocturnal habits of the raccoon add to the excitement of hunters and their dogs as they pursue this surprisingly agile rover through forest and field. The raccoon's fur is of sturdy quality, and in the fur industry it has been known as "Alaska bear" and "Alaska sable."

Although civilization continues to encroach on the prime woodland-wetland habitat of the raccoon, this adaptable animal has managed to maintain a high population in Ohio. With a reasonable amount of concern for its habitat needs, it can be expected to remain for many future generations of Ohioans to enjoy.

OHIO
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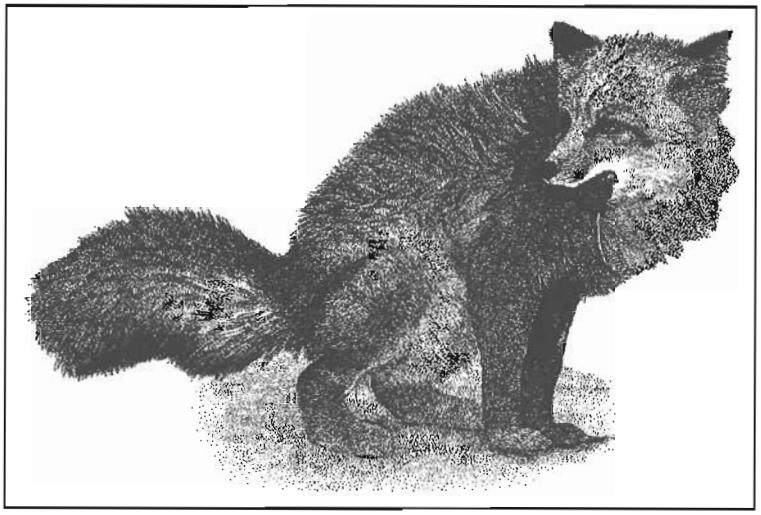
Ohio Division of Wildlife

Life History Notes

Red Fox

Scientific Name: *Vulpes vulpes*



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Introduction

The red fox is one of two fox species in Ohio and one of four in North America. The state's other fox is the gray fox. The Arctic and swift foxes are the other species found in North America. North American foxes inhabit a wide range of habitats from deserts to forests to snow-covered tundras. This isn't completely surprising as the red and other foxes are members of the same family of adaptable animals that includes the wolves, coyote, and domestic dog--Canidae.

The red fox inhabits almost all of the United States and Canada. There are only a few areas where this species isn't found in the two countries: the West Coast, southwest Oklahoma and northwest Texas in the states and small portions of Alberta and Saskatchewan, Canada.

Description

The red fox is likely the one that comes to mind when you think of a fox. Although it can have several color variations, the red fox takes its name from its most common color phase: a rusty-red or reddish yellow coat from its face down its back and sides. Its undersides, throat area, and cheeks are white. The legs, feet, and outside of the ears are black; its long, bushy tail has black hairs mixed with the red and ends in a white tip. This feature can be used to help identify it; the gray fox's tail has a black tip. The tail of the red fox is usually between 14 and 16 inches long.

The red fox may appear in two other color phases. Variations in color include solid black and silver. In all of its color phases, however, the red fox's tail is white-tipped.

The red fox is similar in appearance to a dog, with a slender body, long legs, and a long pointed muzzle.

Habitat and Habits

The red fox likely arrived in Ohio in the mid-1700s. Prior to that time, its range extended to just north of Ohio. But as Ohio was settled and forests were opened and farmlands established the red fox began to inhabit the state. The red fox prefers a mixture of forest and open country. Farmland with woodlots and brushy areas near marshes and swamps are ideal for this species. But the red fox isn't limited to residence and activity in such areas. The species is adaptable and can be found in many other habitat types, including the suburbs.

Red foxes are solitary creatures during the fall and early winter. Their range is one to two miles, but if food supplies dwindle within this area, the animals will extend their normal range to search for food. These foxes do not hibernate; under extreme winter weather conditions they will reduce activity levels and take shelter for a day or two.

The red fox has a distinct call, not like those of its cousins the wolf, coyote, or dog; males yelp and females yap.

Red foxes are nocturnal creatures, meaning that they are most active at night, feeding and moving from place to place. Nonetheless they are often found hunting during daylight hours .

The red fox is known for its speed, excellent senses of sight smell, and hearing, and exceptional use of cover when pursued.

Reproduction and Care of the Young

The red fox's solitary wandering comes to a close in Ohio as early as December, but typically in January or February when courtship and mating rituals begin. A male will seek an unmated female and form a pair bond. Females then seek out an abandoned groundhog burrow as a den for her kits. Both the male and female will work on expanding this site that is later lined with grasses. Females that need to dig their own dens from scratch usually do so by selecting an area of loose, sandy soil with a southern exposure. A natural rock shelter may also be used. It is not unusual for the foxes to have a reserve den prepared nearby or for several families to share a den. Most fox dens are about four feet below ground.

Female red foxes carry their young for nearly two months (51-53 days); as such most kits in Ohio are born in March or April. Litters typically are made up of five or six kits. While the female is below ground nursing her offspring, the male will bring her food. He continues in this role until the young are weaned and can go with their parents on hunting trips where they learn a basic survival skill. By fall of the same year, the family unit breaks up; the young are mature enough to go on their own and their parents split and live independently until the start of the next breeding season. Red foxes are monogamous during the reproductive and pup-rearing stages. It is unclear as to whether or not the same male and female will reunite in following years.

Management Plans

The Ohio Division of Wildlife doesn't manage habitat specifically for the red fox. However, the red fox can be found on many of our state wildlife areas where suitable habitat exists. The habitat management activities that occur on these areas and elsewhere around the state are designed to benefit the red fox and a host of other wildlife species. Each year wildlife biologists evaluate data and establish hunting and trapping season dates and bag limits for taking the red fox.

Viewing Opportunities

Red foxes are found in all 88 counties of Ohio. The best chances of seeing them are in rural areas where open space is interspersed with woods. Four of Ohio's officially designated "Watchable Wildlife" areas are good places to catch a glimpse of the elusive red fox: Blacklick Woods Metro Park, Delaware State Wildlife Area, Fowler Woods State Nature Preserve, and Ottawa National Wildlife Refuge.

Do Something Wild!

The Ohio Division of Wildlife manages for wildlife diversity in the state. We attempt to create and/or conserve the habitat that will support as wide a diversity of wildlife as possible. Many species like the red fox are hunted in the state, but many more are not. The Division has a special program to manage and research nongame species that is supported by the generous citizens of the state of Ohio. With money either donated through the state income tax checkoff, by the purchase of wildlife license plates, or direct contributions to the Endangered Species Special Account, the Division is able to purchase critical habitat that is essential to sustaining many species of wildlife and to implement special efforts like the reintroduction of the osprey and the trumpeter swan to the state.

Contributions to our Wildlife Diversity Program are accepted throughout the year. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 2045 Morse Road, Bldg. G, Columbus, Ohio 43229-6693. All contributions, whether made on your income tax return or directly, are tax deductible.

Fore Foot Track

Hind Foot Track

At a Glance

Mating: Monogamous

Peak Breeding Activity: January-February

Gestation: 51-53 days

Young are Born: February-April

Litter Size: 5 or 6 kits

Young Leave Parents: In the fall, about 6-8 months after birth

Number of Litters per Year: 1

Adult Weight: 8-15 pounds

Adult Length: 22-25 inches

Life Expectancy: 6-8 years; oldest known 12 years

Migration Pattern: Year-round resident

Typical Foods: Mice, rats, rabbits, groundhogs, and other small mammals; also birds, fruits, and some grasses.

Native to Ohio: No, arrived following European settlement

Striped Skunk in Ohio

Scientific name: *Mephitis mephitis*

Other common names: Polecat, wood pussy

LIFE HISTORY NOTES

Mating: polygamous. **Breeding period:** February-March. **Gestation:** 63 days. **Birth period:** May. **Litters per year:** 1. **Litter size:** 2-10; average 6. **Birth weight:** 1 ounce (28 grams). **Eyes of young open:** at 4-5 weeks. **Young leave nest:** at 6-8 weeks. **Young weaned:** at 6-7 weeks. **Breeding age:** 1 year. **Adult weight:** 6-10 lb (2.7-4.5 kg); average 8 lb (3.6 kg). **Adult body length:** 13-18 inches (33-46 cm). **Adult tail length:** 7-10 inches (178-254 mm). **Life expectancy:** 8-10 years. **Movement:** home range 10 acres (4 hectares). **Feeding period:** at night. **Typical foods:** omnivorous--mice, lizards, frogs, fish, crayfish, insects, grubs, eggs, fruits, and carrion.

The striped skunk is about the size of a house cat, with a large, deep body, small head, and short legs. The hair is long and black, with a broad white patch on the head and shoulders. Two white lines forming a "V" from the shoulder area may extend part way or all the way to the base of the bushy tail.

This species probably has increased in numbers since pre-settlement times as more forest land has been cleared. The skunk prefers a semi-open habitat of mixed woods, brush, and open grassland within two miles of water. Management practices which encourage interspersion of these vegetative types will favor skunk populations, but the adaptable skunk can be found in almost any habitat, including suburbs and city parks. Today it is common throughout Ohio.

The den may be in a ground burrow or beneath a boulder, rock pile, wood pile, or abandoned building. Almost any dark, dry, sheltered site will do. Young skunks are taught to hunt by their mother, and in late June or July are often seen walking single file behind her at dusk--off for an evening's feeding and training. Skunks make a variety of sounds; at times they may be heard to twitter, screech, growl, churr, coo, and whistle.

Striped skunks do not hibernate. In December the females den up, sometimes eight or ten to a den. Males are more solitary. During periods of extreme cold they may stay inside for days at a time, but a warm spell will bring them out in search of food.

The skunk is perhaps best known for its well developed scent glands, situated at the base of the tail. When seriously threatened, the skunk can squirt the musk from these glands with great accuracy up to 15 feet. Gentle breezes can carry the scent more than a mile. The musk is yellowish, has an acrid, stinging odor, and sticks like glue. It is not only offensive to the nose, but also painful to the eyes. Tomato juice is the best treatment for the skin of one unfortunate enough to be sprayed; scented clothing is best burned.

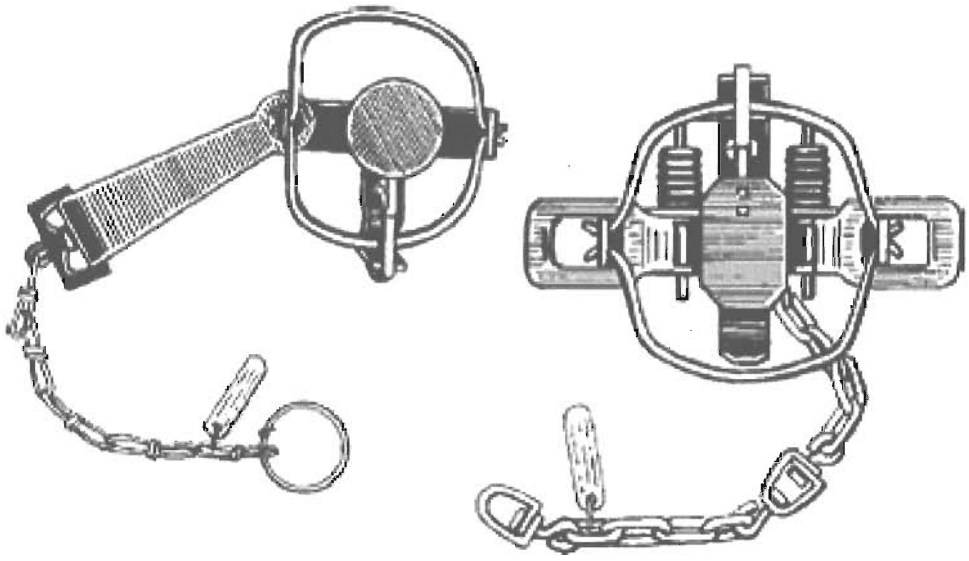
With such an effective defense mechanism, the foraging skunk wanders to and fro, seemingly oblivious to danger. Few predators will attack a skunk; the great horned owl probably takes more than any other natural enemy. Skunks are often observed along roadsides, and many thousands fall victim to the automobile each year.

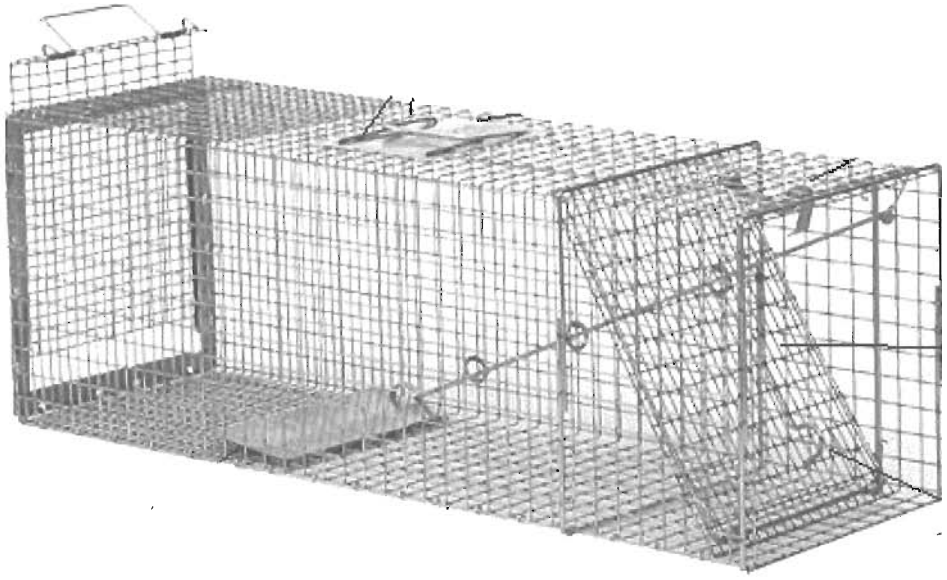
The striped skunk is an important furbearer, and also is one of the most effective predators of small rodents and insects. An occasional individual will attack poultry. With its well developed defense and great adaptability, the striped skunk probably will remain an intriguing part of the state fauna for many future generations of Ohioans to enjoy.

OHIO
DIVISION OF WILDLIFE

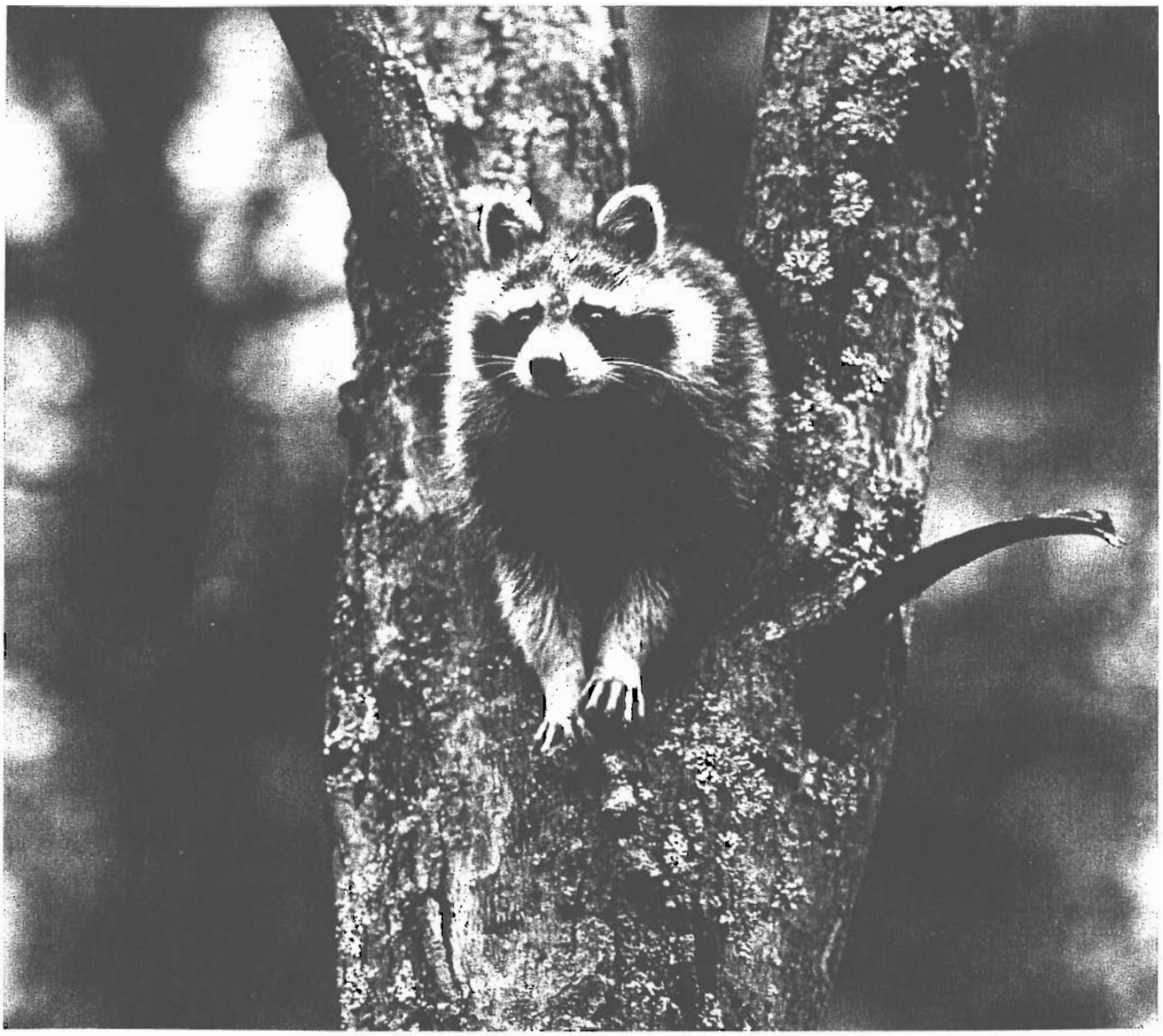
Activities

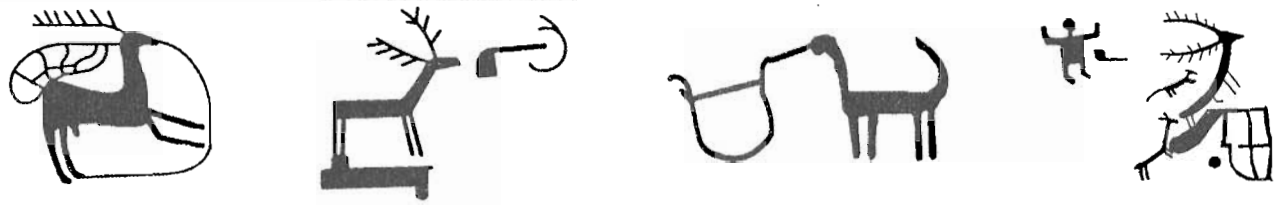
Furbearers and Trapping





TRAPPING AND FURBEARER MANAGEMENT IN NORTH AMERICAN WILDLIFE CONSERVATION





Introduction

The trapping of furbearers — animals that have traditionally been harvested for their fur — has been an enduring element of human culture ever since our prehistoric hunter-gatherer ancestors devised the first deadfalls, pit traps, snares and capture nets. People were dependent upon furbearers to provide the basic necessities for survival — meat for sustenance, and fur for clothing, bedding and shelter — throughout most of human history. Defining and defending territory where furbearers could be captured to acquire these critical resources united families, clans and tribes long before the invention of agriculture and animal husbandry gave rise to ancient civilizations. While modern technology and agriculture have significantly reduced human dependence on furbearers for survival, people in both rural and developed areas continue to harvest furbearers for livelihood and personal fulfillment. The taking and trading of furbearer resources remain on the economic and environmental agendas of governments throughout the world.

Trapping furbearers for their fur, meat and other natural products presumably began with our earliest ancestors on the African continent. It has a long tradition in North America, dating back to the time the first aboriginal people arrived on the continent. Several thousand years later, fur was the chief article of commerce that propelled and funded European colonization of the continent during the 17th and 18th centuries. Numerous cities and towns founded as fur trading centers during that period still bear witness to the fact that furbearer trapping had a major influence on the history of the United States and Canada.

The utilization of furbearer resources was unchallenged throughout that history until early in the 20th century, when the first organized opposition to furbearer trapping emerged. The focus of that opposition was primarily on development of more humane traps and curtailment of trapping abuses, rather than against trapping itself or continued use of furbearer resources. During the 1920s opposition magnified to challenge the use of steel jaw foothold traps and the wearing of fur.[1] In response to this development, proponents of trapping and the fur industries began organizing to defend themselves. By the 1930s, furbearer trapping had become a recurrent public issue. Since then, the pro- and anti-trapping factions have disseminated enormous amounts of generally contradictory information.

During this same period, new technologies and advances in ecology, wildlife biology, statistics and population biology allowed wildlife management to develop into a scientific profession. State, provincial and federal agencies were created to apply this science to protect, maintain and restore wildlife populations. The harvest of furbearers became a highly regulated, scientifically monitored activity. Trapping and furbearer management — one steeped in ancient tradition, the other rooted firmly in the principles of science — allowed furbearer populations to expand and flourish.

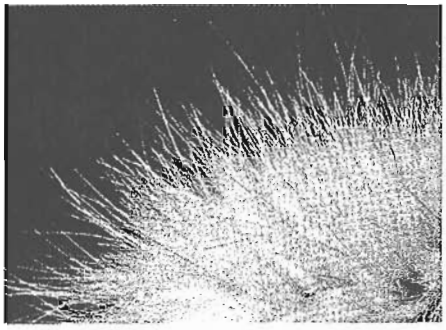
Today, as controversy over the use and harvest of furbearers continues, professional wildlife managers find themselves spending considerable time trying to clarify public misconceptions about trapping and furbearer management. The complex issues involved in that management — habitat loss, animal damage control, public health and safety, the responsible treatment of animals — cannot be adequately addressed in short news articles or 30-second radio and television announcements.

This booklet is intended to present the facts and current professional outlook on the role of trapping and furbearer management in North American wildlife conservation. It is the combined work of many wildlife scientists responsible for the successful conservation of furbearer populations in the United States and Canada.

Photo by Bill Byrne

The Furbearer

Technically, the term **furbearer** includes all mammals, all of which, by definition, possess some form of hair. Typically, however, wildlife managers use the term to identify mammal species that have traditionally been trapped or hunted primarily for their fur. North American furbearers are a diverse group, including both carnivores (meat-eating predators) and rodents (gnawing mammals). Most are adaptable species ranging over large geographic areas. They include beaver, bobcat, badger, coyote, fisher, fox, lynx, marten, mink, muskrat, nutria, opossum, raccoon, river otter, skunk, weasels and others. A few animals that are normally hunted or trapped primarily for their meat or to reduce agricultural or property damage may also be considered furbearers if their skins are marketed.

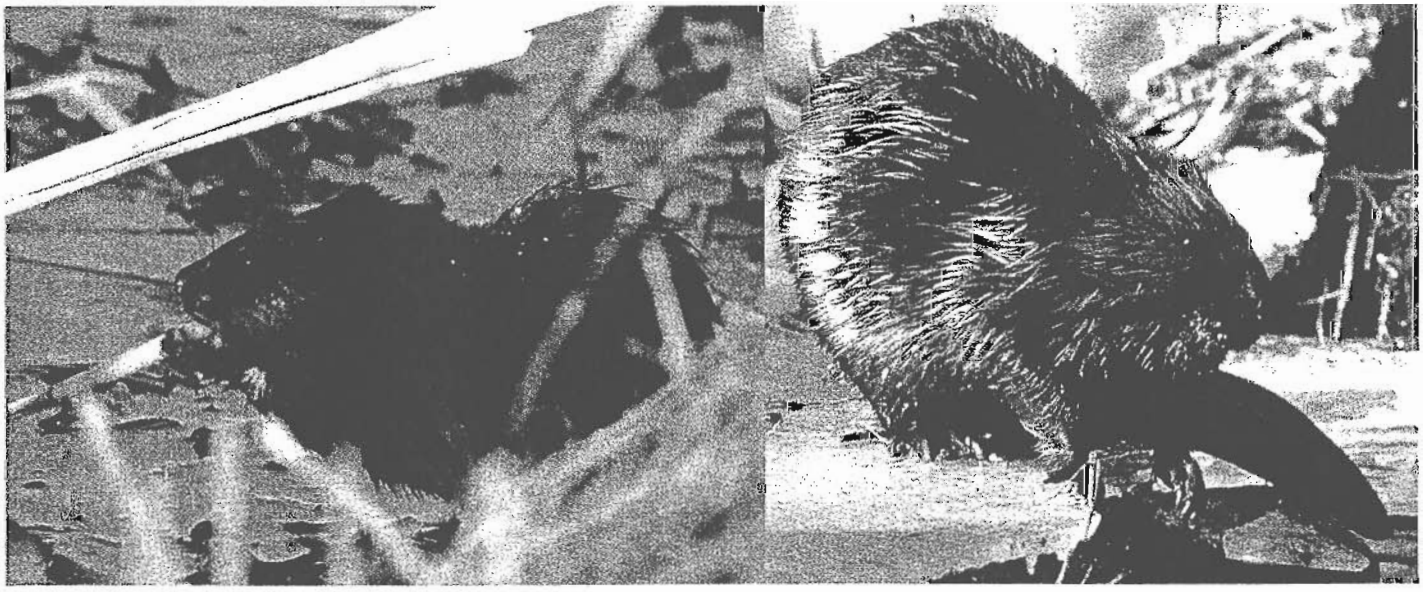


*A magnified view of red fox fur shows the short, dense **underfur** that provides insulation and water repellent qualities, and the longer **guardhairs** that resist abrasion and protect the underfur from matting.*

Most furbearers possess two layers of fur: a dense, soft **underfur** that provides insulation and water-repellent qualities; and an outer layer of longer, glossy **guardhairs** that grow through the underfur, protecting it from matting and abrasion. A fur is said to be **prime** when the guardhairs are at their maximum length and the underfur is at its maximum thickness. Fur generally becomes prime in midwinter when the coat is fresh and fully grown; the timing for primeness may vary somewhat depending on species, location (latitude) and elevation.

Furs are generally "dressed" (tanned with the hair on), then trimmed and sewn into garments, rugs, blankets and ornaments, and sometimes dyed in a variety of colors and patterns. Furs are also used in fishing lures, fine brushes and other products. Some furs are shaved, and the hair processed into felt for hats and other garments.

Fur is a renewable (naturally replenished) resource, a product of long traditional use, valued by many for its natural beauty, durability and insulative qualities. Fur is only one of many values that people ascribe to furbearers (see page 27).



Photos by Bill Byrne

Photo by Jack Swedberg

Furbearers are a diverse group including several rodents and numerous carnivores (meat-eaters). The muskrat (above, left), a wetland herbivore (plant-eater), is the number one furbearer in the United States and Canada based on the number of pelts harvested each year. The beaver (above, right) is the largest native rodent in North America, best known for its ability to fell trees and dam streams. Facing page, top, the fisher, a member of the weasel family, is an opportunistic predator equally at home in the trees or on the ground. Below, the red fox, like the beaver, has achieved considerable success in adapting to suburban environments.

Issues in Furbearer Management

There are three major issues involving the conservation and management of furbearers today: human population growth with its inevitable degradation and destruction of wildlife habitat; increasing public intolerance of furbearers in populated areas; and opposition from animal rights activists to any harvest or use of wildlife.

Loss of Habitat

The first and most critical issue challenging furbearer conservation today is human population growth and the resultant degradation and destruction of wildlife habitat. Without adequate habitat, wildlife populations cannot be sustained. While no furbearer species is in immediate jeopardy due to habitat loss in North America (because furbearers are typically abundant, adaptable species often covering large geographic areas), the range of some populations has been reduced. Habitat destruction has eliminated the option to restore some species to areas where they once existed.

Among wildlife scientists, ecologists and biologists, no issue is of greater concern than the conservation of wildlife habitat. Every government wildlife agency is directing significant educational and/or financial resources to the conservation of habitat. Habitat conservation is the key to maintaining the viability of all wildlife populations and the ecosystems on which they depend. Unlike habitat destruction, regulated trapping is a sustainable use of wildlife resources, and does not, in any way, jeopardize the continued existence of any wildlife population.

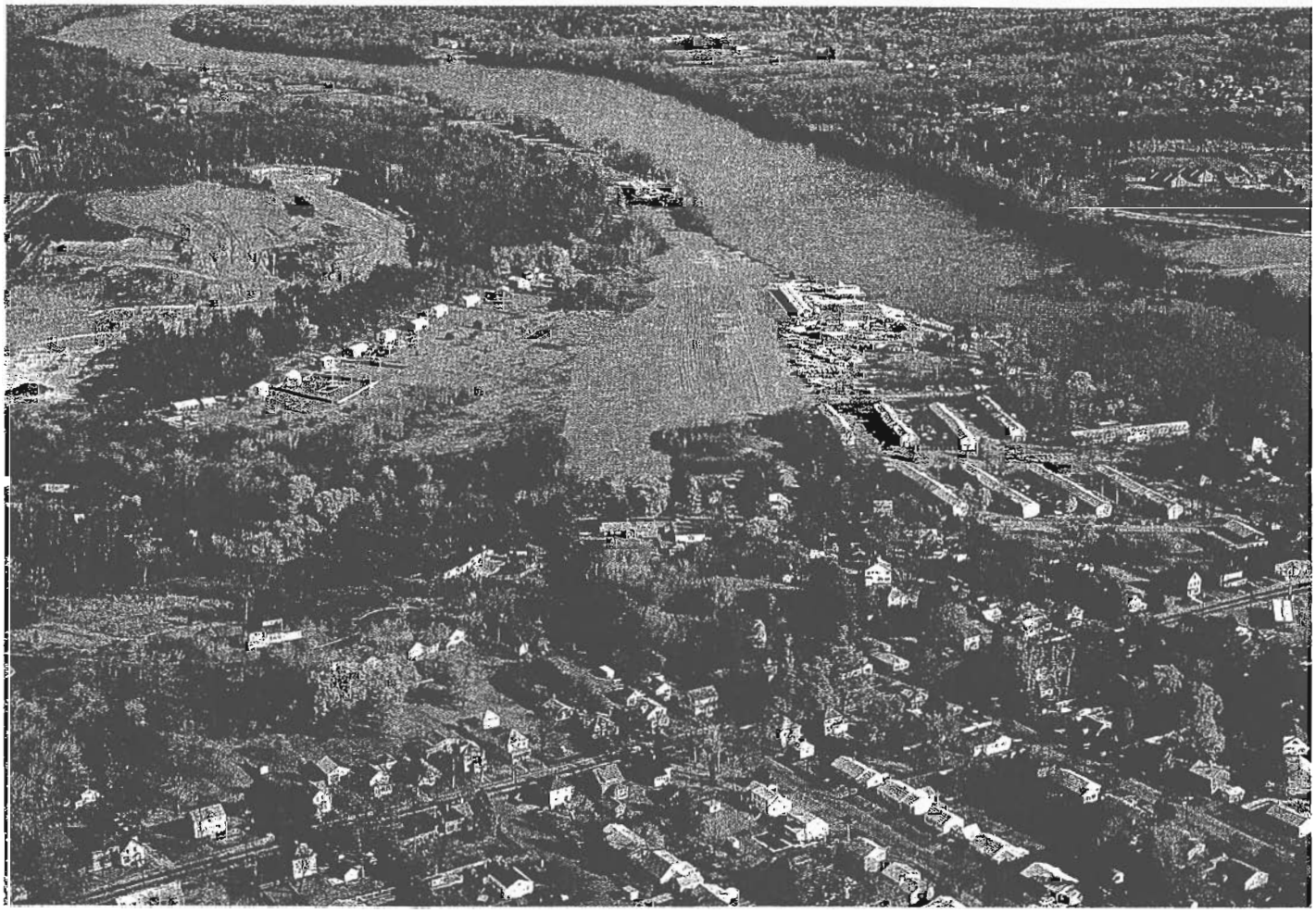


Photo by Bill Byrne

The continuing loss of wildlife habitat is the most critical issue in wildlife conservation today. Unlike regulated trapping, habitat destruction threatens the existence of wildlife populations and the ecosystems on which they depend. Further, as development encroaches on wildlife habitat, adaptable furbearer species create problems for homeowners, increasing public intolerance of these valuable wildlife resources.

Public Intolerance

While habitat loss is a direct threat to wildlife populations, it also has indirect consequences. As wildlife habitat continues to be fragmented and eliminated by development, wildlife managers are confronted with new challenges: coyotes killing pets, beavers cutting ornamental trees and flooding roads and driveways, raccoons invading buildings and threatening public health with diseases and parasites. These kinds of human-wildlife conflicts reduce public tolerance and appreciation of furbearers. While **Biological Carrying Capacity** (population level an area of habitat can support in the long term) for a furbearer species may be relatively high, the **Cultural Carrying Capacity** (population level the human population in the area will tolerate) may be lower.[2] Wildlife managers, responding to public concerns, have implemented furbearer damage management programs at state and federal levels.

A growing dilemma is that furbearers, while of great recreational, economic, and intrinsic value to society, are also increasingly a public liability. The challenge — magnified in and near areas of dense human population — is to satisfy various constituents with different interests and concerns while conducting sound wildlife management. Wildlife agencies typically use an integrated approach involving education, barriers, deterrents and lethal techniques to address specific problems, while fostering public tolerance for wildlife that causes damage. The combination of as many feasible options as possible provides for the most successful program. Wildlife agencies have long relied on the free services provided by the public who trap to assist landowners suffering damage caused by furbearers. Unfortunately, due to various environmental, economic and sociological factors, traditional fur trapping — which reduces animal damage at no cost to the public — tends to be a rural activity. The number of people newly involved in this cultural activity has declined in recent years, particularly in suburban and urban areas.

Photo by Bill Byrne

Nuisance animal control is becoming a growth industry in many areas as development fragments wildlife habitat and traditional fur trapping declines. This trend is of concern to wildlife biologists, for it indicates that a growing segment of the public is losing its tolerance and appreciation for some wildlife species, viewing them as problems that should be removed and destroyed, rather than as valuable resources that should be utilized and conserved.

With the decline of traditional fur trappers, "nuisance animal control" has become a growth industry. Businesses specializing in trapping and removal of "problem" animals are thriving in many areas. This trend is of concern to wildlife biologists, for it indicates that a growing segment of the public is coming to view furbearers as problems that should be removed and destroyed, instead of valuable resources that should be utilized and conserved. Regardless, regulated trapping provides an important and effective method to meet the public's demand for reduction of furbearer damage.

Animal Rights

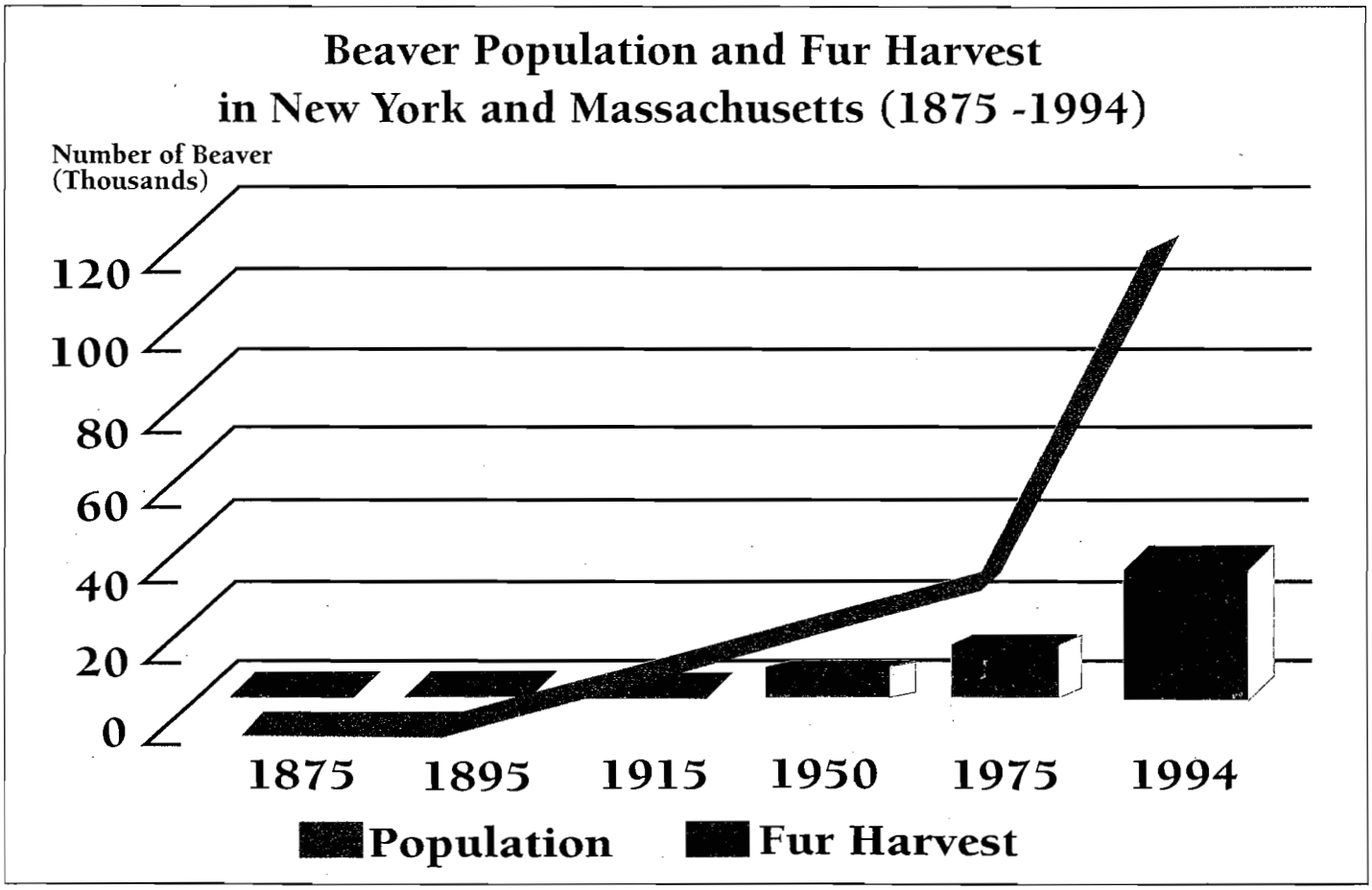
As wildlife managers are faced with having to rely more on regulated trapping for furbearer population management and damage control, animal rights activists demanding an end to trapping are appealing for public support. Those advocating "animal rights" would eliminate all trapping and use of furbearers. Without regulated trapping, the public would have far fewer reliable and economically practical options for solving wildlife damage problems associated with furbearers.

Public Wildlife Agencies Manage Our Wildlife Resources

Furbearer management programs in the United States and Canada are primarily conducted by state and provincial wildlife agencies. Current management programs respond to and respect the diversity of people and cultures and their values toward wildlife resources. In the United States, most funding for furbearer management comes from two sources: hunting and trapping license revenues, and federal excise taxes on firearms, ammunition and archery equipment (federal aid). Most wildlife management is not funded with general tax dollars. Federal aid — now amounting to over 200 million dollars in some years among the 50 states, territories and the Commonwealth of Puerto Rico — has been provided since passage of the Federal Aid in Wildlife Restoration Act (also known as the Pittman-Robertson Act) in 1937. Federal funds and the assistance of certain federal agencies are also available for wildlife damage management programs within each state.

State and provincial wildlife agencies manage furbearer populations for the benefit of a public with diverse opinions. Wildlife managers must therefore balance many objectives simultaneously. These objectives include preserving or sustaining furbearer populations for their biological, ecological, economic, aesthetic and subsistence values, as well as for recreational, scientific and educational purposes. It is sometimes necessary to reduce furbearer populations to curtail property damage or habitat degradation, or to increase furbearer populations to restore species to areas where they have been extirpated (eliminated within an area).

Professional wildlife biologists meet the public's objectives by monitoring and evaluating the status of furbearer populations on



Nearly extirpated prior to the start of the century, beaver populations have responded to applied wildlife management in a dramatic fashion.[3] Like many other furbearer species, the beaver has been restored to much of its former range while sustaining considerable, scientifically regulated public fur harvests.

Photo by Bill Byrne

Many states and provinces require that the pelts of certain species of furbearers taken by trappers must be officially examined and tagged (sealed or stamped) before they may be sold. This allows wildlife biologists to closely monitor harvest rates of some species while collecting invaluable data on population trends. When biologists need more information, regulations may be adjusted to require that trappers turn in the carcasses or certain parts of their harvested animals. This allows biologists to examine such things as reproductive rates, food habits, sex and age ratios and other information that is often useful in managing furbearer and other wildlife resources.

a regular basis, and responding with appropriate management options. Much of the information known about furbearer populations — as well as the management of furbearer populations — has been derived from trapping. Accounting for yearly variation in the numbers, sex and age of animals caught by licensed trappers, along with variation in effort provided by trappers, is an economical way to monitor population fluctuations. In many cases, biologists acquire information directly from harvested animals. More intensive (and expensive) research projects are initiated when additional information essential to management is needed. Many jurisdictions adjust trapping regulations in response to population changes to either increase or decrease the population in response to the public's desires.

Management plans and regulations restrict trapping seasons to periods when pelts are prime and the annual rearing of young is past. Historical records demonstrate how applied wildlife management sustains regulated harvests: populations and harvests of most furbearing species have generally increased in North America during this century. Beaver, for example, were almost eliminated from the eastern United States and greatly reduced in parts of eastern Canada by the middle of the 19th century. Today they number in the millions, thriving throughout that range wherever sufficient habitat remains and the public will allow their presence. They have been restored to this level while sustaining a substantial, annual, regulated public harvest.[4]

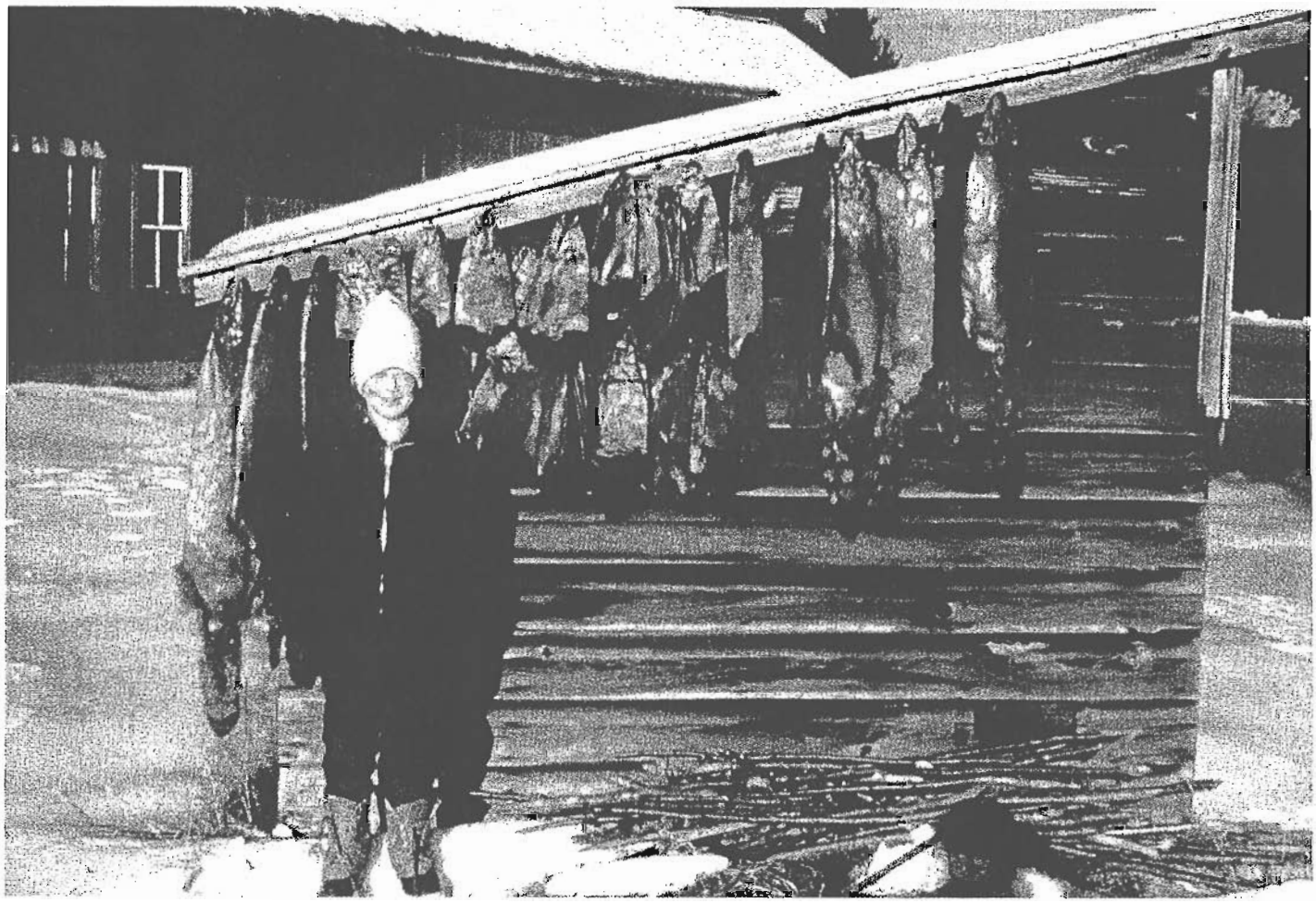


Photo by Benjamin Tuller NYDEC

The Facts on Regulated Trapping

People have continuously used furbearers in North America for clothing, food and religious ceremonies for the past 11,000 years. Fur resources had a greater influence than any other factor on European settlement and exploration of the continent. Many cities and towns in North America, including Quebec, P.Q., Albany, NY, Chicago, IL, St.Louis, MO and Springfield, MA, were founded as fur trading centers where Europeans bartered with Native Americans for furs. The trapping and trading of furbearer resources is a heritage that still continues as an important component in the lifestyles of many people in our society. Whether in an industrial, urban, rural, or remote setting, trapping and fur are still of cultural and economic importance and furbearers continue to be utilized and managed as valuable renewable natural resources.

The economic impact of managing furbearer resources is enormous: the multi-billion dollar fur industry annually generates millions of dollars to North American trapper households, wholesalers, processors, garment makers and the retail clothing industry. There are also economic values derived from reduced damage to property and agriculture; personal uses of fur, hides, meat and other products; license revenues; goods and services sold to the public who trap and hunt; and the enhancement of economic activity and the redistribution of wealth into rural communities. Many remote communities in Alaska and northern Canada are dependent on the sale of pelts.[13]Trappers in South Carolina report that 9.3 percent of their family income is derived from trapping.[14] The food value of furbearers can be equal to or greater than the market value of their pelts. Even in an industrialized state like Massachusetts, 28% of trappers report they use furbearers as a food source for themselves or their pets.[15]

In addition to economic values, trapping has many social values. In Vermont for example, gardening, child care, fire wood gathering, harvesting of wild

Trapping is Highly Regulated

Within the United States and Canada, state, provincial or territorial fish and wildlife agencies have legal authority and pass laws governing furbearer resources. There are various types of laws that apply to trapping within each jurisdiction, and they are enforced by local environmental police, conservation officers and/or game wardens. Laws that regulate trapping by various means include the following:

- Mandatory licensing of trappers
- Mandatory daily checking of traps
- Mandatory trapper education
- Restricted seasons for trapping
- Restrictions on the size of traps
- Restricted areas for trapping certain species
- Restrictions on the types of traps
- Mandatory tagging of traps to identify owner

Professional wildlife biologists monitor the populations of furbearing animals. Scientific studies are conducted to ensure that these species are managed properly. In addition, research focused on the traps themselves identifies which traps work best with each species, and which need improvements. New and improved traps are continually being developed.

foods, home and automobile maintenance, animal husbandry, and community volunteer work are bartered for trapping and furbearer products in some communities.[17] This "hidden economy" may have social and economic significance in many rural communities all over the continent.

Trapping, along with the heritage and self-sufficient lifestyle it represents, has a cultural and social role in today's society and is much more than a "consumptive use" of wildlife. **Trapping can instill a strong appreciation for wildlife and the environment.** Sociological studies show that trappers have an exceptional degree of factual understanding of animals and are outstanding and unusual in their knowledge of wildlife. Trappers, through their outdoor experience and use and knowledge of wildlife, are unique. The relationship they have with land and wildlife underlies a strong sense of stewardship for the environment.[18]

Traps & Technique

The capture and harvest of furbearers has changed markedly since early times. Modern trapping is not comparable to the reckless exploitation of the 17th, 18th and 19th centuries. Today trapping is heavily regulated, involving some of the most complex laws that deal with wildlife, enforced with stiff fines and penalties that ensure the integrity of the activity. Overall, the regulations are designed to protect furbearer

Photo by Bill Byrne

Environmental Police Officers, Conservation Officers or Game Wardens enforce trapping laws and regulations throughout the United States and Canada.

and opossum when trapping near residential areas in wildlife damage management situations. Quick-kill type traps — or body-gripping traps as they are sometimes called — are very effective when used for marten, mink, fisher, muskrat, otter and beaver. Kill-type traps are considered to be efficient and humane because animals rarely escape, and loss of consciousness and death are rapid. However, kill-type traps do not allow for release of "nontarget" animals (animals the trapper does not want to harvest). Also, fox and coyotes will rarely enter kill-type traps. For these species especially, foothold traps remain the most effective trap (and allow for release of nontarget animals).

Foothold traps do not have to be big and powerful in order to hold an animal. **A foothold trap of the right size, correctly set, will typically catch and hold the target animal without significant injury**.

Foothold traps need not be large to be effective, as demonstrated by the trap used to capture this coyote. Foothold traps typically capture and hold animals without significant injury and have been used to capture river otter and gray wolves (below) for reintroduction and restoration efforts in portions of the United States. The foothold trap is the only effective device, except for snares, for capturing certain furbearers such as coyote, wolves, and foxes.

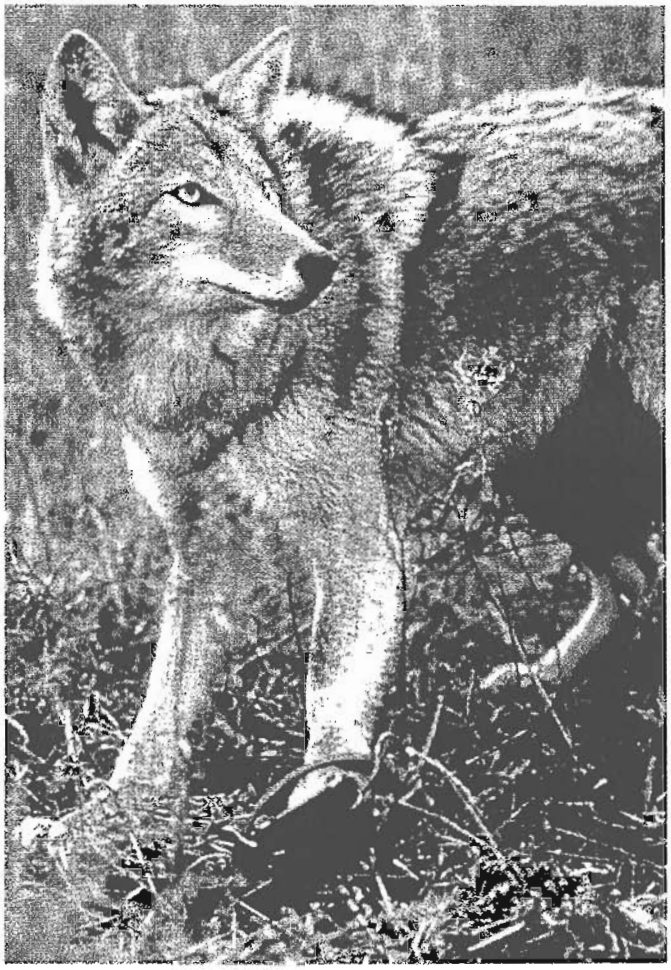


Photo by Dan Harrison

Trappers Are Selective

The placement of the trap in relation to the lure and/or bait (as well as the type of bait or lure) greatly affects the selectivity of the trap set. An effective trapper wants to catch the animal targeted, instead of a nontarget species. Knowledge of animal behavior allows placement of traps on the target animal's line of travel such that, in many cases, the trapper needs no bait or lure at the set (blind set). Different lures used at other sets are usually attractive only to certain species of furbearers, and can be used to draw the target animals to the set. Trappers strive for enough knowledge of the target animal's habits to allow efficient capture while avoiding nontarget animals. This is the essence and challenge of trapping. The personal satisfaction and even the economic return depend on having this knowledge and efficiency (see "Trapper Education" page 26). With the selection of the right size trap, trapping location, the correct setting of pan tension, and the proper use of the device in concert with lure and bait, trappers are extremely selective in what species their traps will capture. So, while traps as devices

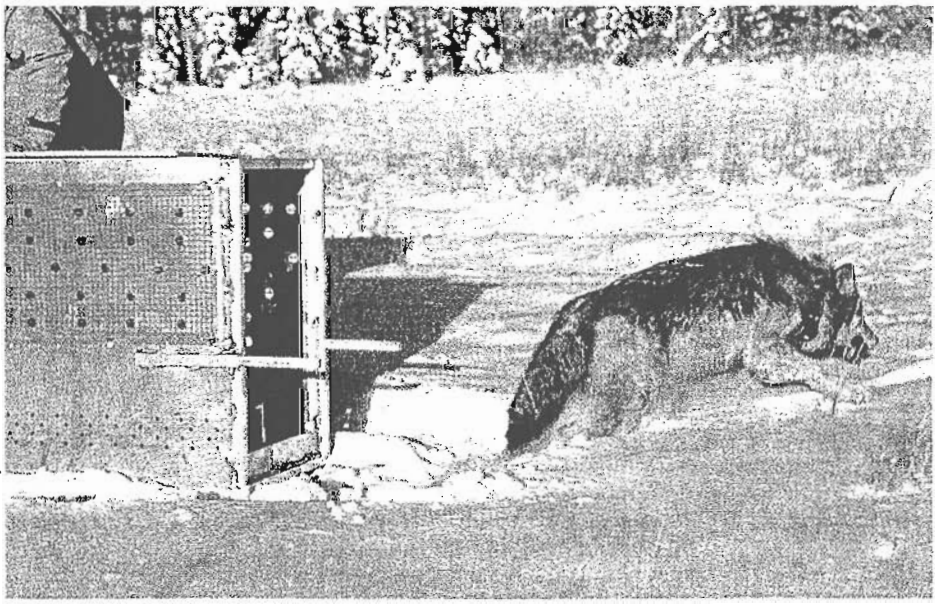


Photo courtesy of U.S. Fish & Wildlife Service

Photo courtesy of New York State Dept. of Environmental Conservation

The art of trapping is often a family tradition, handed down from generation to generation.

have some degree of selectivity, trappers further improve that selectivity.

Concern has been expressed over the relative risks of trapping to pets. As stated above, proper trap selection and placement will minimize nontarget captures. Trappers generally seek landowner permission (required in many jurisdictions) when trapping on private land, and scout for animal sign and presence before the trapping season. Most trappers avoid areas with evidence of domestic animal use because it interferes with opportunities to capture target species. Pets that are allowed to range freely and unsupervised are at greater risk from predators, automobiles and other health threats than they are from traps. Regardless, in the few instances when pets or domestic animals are accidently caught in foothold or box traps, they can usually be released unharmed.[20]

Trapper Education

There was a time when new or young trappers could easily find a friend or relative to teach them how to trap. To become effective, the trapper must learn animal behavior, wildlife habitat, types of traps, trap preparation, sets and lures for different animals, and care of the pelts. This knowledge allows the trapper to become efficient; that is, to be able to set the

Acquiring the base knowledge from experienced trappers starts beginners off right. To ensure that all new trappers know the proper skills and understand the activity, its many regulations, and their role in scientific wildlife management, first-time trappers in many states and all Canadian provinces and territories are now required to complete an official trapper education program.

A Final Word

Professional wildlife management has successfully restored, preserved and ensured the continuing viability of wild furbearer populations in North America. The harvest and utilization of some individuals within those populations by the public does not threaten the continuing survival of those populations. **In fact, the harvest and use of some individuals has contributed most of the funding to study and manage those populations, including protecting the habitats and ecosystems critical for their survival.**

Without regulated trapping, wildlife managers could not adequately or economically monitor furbearer populations; they could not undertake the restoration programs that have restored so many species to areas where they have not prospered for centuries; they would have fewer options to offer the public significant relief from agricultural and property damage, or to protect human health and safety; and they could not ensure the continued public use of furbearer resources.

Furbearer management is a complex scientific subject. The Wildlife Society — an international nonprofit scientific and educational organization serving professionals in all areas of wildlife ecology, conservation, and management — has published a policy on traps, trapping, and furbearer management that best represents the views of wildlife biologists.

Photo by Bill Byrne

The Wildlife Society Position on Traps and Trapping

Internationally accepted principles of natural resources conservation stipulate that resource management activities must maintain essential ecological processes, preserve genetic diversity, and ensure the existence of species and ecosystems. Regulated trapping in North America is consistent with all three criteria and is a versatile, safe, effective, and ecologically sound method of harvesting and managing species of furbearers.

Trapping provides income, recreation, and an outdoor lifestyle for many citizens through use of a renewable natural resource. It is a part of the North American heritage. It is often vital to the subsistence or self sufficiency of peoples in remote regions who have few other economic alternatives. Trapping is a primary tool of most animal damage control programs and an important technique in wildlife research. In some situations, trapping is important in management or is effective in reducing or suppressing wildlife diseases.

Despite the values of trapping, portions of the public oppose it, or at least perceive problems with some aspects of it. Some object only to certain trapping methods, particularly the foothold trap on land, but others have moral objections to killing animals. Much of the opposition to trapping is associated with urban-oriented cultures, particularly those dominated by tertiary (service-oriented) employment. Those who approve of, practice, or benefit from trapping are primarily from rural cultures or are from areas where primary (land-based) employment predominates. This dichotomy of lifestyles and values, combined with a general lack of objective information about trapping, creates barriers to understanding and resolving the controversial issues associated with trapping.

TRAPPING SEASON

Season	Opening Day	Closing Day
Fox, Raccoon, Opossum, Skunk, Weasel	Nov. 10, 2008	Jan. 31, 2009
Mink, Muskrat	Nov. 10, 2008	Feb. 28, 2009
Mink, Muskrat, Raccoon, Opossum, Skunk, Weasel *(Erie, Ottawa, Sandusky, and Lucas County east of the Maumee River)*	Nov. 10, 2008	Mar. 15, 2009
Beaver: Statewide	Dec. 26, 2008	Feb. 28, 2009
River Otter *Open in specific counties*	Dec. 26, 2008	Feb. 28, 2009

A Fur Taker Permit is required (except for coyote) to hunt or trap furbearing animals in Ohio.

TRAPPING REGULATIONS

Except for river otters, there are no restrictions on bag limits. All traps and snares must be checked and all animals removed every 24 hours. All furbearers shall be killed immediately and reduced to the person's possession. All flesh baits must be totally covered. Foothold traps set on land must be covered. Foothold traps set on land shall not have an inside diameter jaw spread greater than 5 5/8 inches. Body gripping traps set on land, or in a tile, den, or burrow on land shall not have an inside diameter jaw spread greater than 5 inches in diameter. Body gripping traps with an inside diameter jaw spread greater than 5 inches but less than 7 inches must be set in water, those with a jaw spread greater than 7 inches must be completely submerged in water. Except for cage traps, no traps or snares may be set within 150 feet of another person's occupied residence without advising the resident. No person shall disturb a trap or snare or remove a furbearing animal from a trap or snare of another person without permission. Traps with teeth in the jaws are prohibited. Deadfalls are illegal.

FIRST-TIME TRAPPERS

All first-time trappers and hunters, except apprentice license buyers, must successfully complete an education course offered through the Division of Wildlife before purchasing a hunting license or Fur Taker Permit to trap furbearers.

You CAN do the following:

1. Set, use, and maintain snares for the purpose of taking furbearing animals. All snares must have a relaxing lock and a stop to prevent the opening of the snare from closing to a diameter of less than 2 1/2 inches in diameter, or a relaxing lock system with a breaking point of not greater than 350 pounds.
2. Attach a drag to a foothold trap.
3. Trap coyotes without a Fur Taker Permit. However, anyone hunting, trapping or snaring coyotes must have a valid hunting license.

You CANNOT do the following:

1. Pursue, hunt, trap or snare furbearing animals between 6:00 p.m. and 6:00 a.m. without use of a continuous white light visible for at least a 1/4 mile. Persons hunting fox or coyote with a call from a stationary position may use a single beam light. When two or more people are hunting or trapping together for these animals only one light is required and can be carried by any member of the party.
2. Use or possess climbers, or any other device that can be used for climbing trees while hunting, trapping or pursuing furbearing animals.
3. Set, use or maintain a trap or snare to take a wild animal, unless that trap or snare has attached to it a durable, waterproof tag bearing the name and mailing address of the user in English letters that are legible at all times, or which has the name and mailing address of the user stamped into the trap in English letters that are legible at all times.
4. Set, maintain, or use a trap or snare in or upon any cart or wagon road, or in or upon any path ordinarily used by domestic animals or human beings.
5. Attach a snare to a drag. Snares must be staked or otherwise attached to an immovable object.
6. Set, use or maintain a snare on public hunting areas, except for beaver (see Beaver Trapping regulations).
7. Use any snare constructed of any material other than multi-strand or single strand steel cable.
8. Set a snare with a loop diameter of more than 15 inches.
9. Have attached to a snare any spring loaded or mechanical device to assist the snare in closing.
10. Set, use, or maintain any snare that does not comply with the requirements listed above.

RIVER OTTERS

A publication (**Publication 88, *River Otter Trapping Regulations***) detailing all trapping and tagging requirements for Ohio's river otter trapping season will be available at all wildlife district offices and the Internet, or call 1-800-WILDLIFE to obtain a copy.

Otter trapping on state public hunting areas without a special beaver/otter trapping permit from the Division of Wildlife is prohibited. Consult our district offices or Web site (www.wildohio.com) for information on how these permits can be obtained.

Open counties for trapping river otters are; Adams, Ashland, Ashtabula, Athens, Belmont, Carroll, Columbiana, Coshocton, Delaware, Fairfield, Franklin, Gallia, Geauga, Guernsey, Harrison, Hocking, Holmes, Jackson, Jefferson, Knox, Lake, Lawrence, Licking, Mahoning, Meigs, Monroe, Morgan, Morrow, Muskingum, Noble, Perry, Pickaway, Pike, Portage, Richland, Ross, Scioto, Stark, Trumbull, Tuscarawas, Vinton, Washington, and Wayne counties (see map on this page).

The pelt of each river otter must be checked in with a wildlife officer or taken to a wildlife area headquarters or district office during business hours (8 a.m. to 5 p.m.) within 72 hours (3 days) of capture. All legally checked otters will receive a CITES tag that allows the pelt to be sold outside Ohio.

River Otter Bag Limits

No more than three (3) river otters may be taken by any trapper and no more than one (1) river otter may be taken from Zone B.

Controlled Trapping Opportunities

Sealed bids will be accepted in September for beaver and otter trapping within the wildlife refuge portions of Killbuck Marsh and Mosquito Creek wildlife areas. A public drawing will also be held the first Saturday in November for a limited number of permits to trap beaver and otters on the Grand River Wildlife Area. For official bid proposal forms and other information contact the Division of Wildlife District Three Office in September at (330) 644-2293.

BEAVER TRAPPING REGULATIONS

Beaver trapping is permitted within American Electric Power's recreation area, known as ReCreation Land, Avondale Wildlife Area, and Conesville Coal Lands, with a special beaver trapping permit which is in addition to the normal user's permit. This special beaver trapping permit is issued from the AEP Land Management office in McConnelsville, Ohio. Beaver trapping on state public hunting areas including state parks and forests without a special beaver trapping permit from the Division of Wildlife is prohibited. Consult our district offices or Web site (www.wildohio.com) for information on how these permits can be obtained. Snares may be set for beavers using these permits. Snares set for beaver on public hunting areas must have a minimum loop diameter of 10 inches and the bottom of the snare must be covered by at least 1 inch of water at all times.

COUNTIES OPEN FOR TRAPPING 2008-2009 RIVER OTTER

Academic Content Standards & References

Ohio Academic Content Standards for Science

Activity	Grade	Content Standard	Benchmark	Indicators
Checks and Balances	5	Earth & Space Sciences	C	6
	5	Life Sciences	C	4,5,6
	5	Science and Technology	A	1
	5	Scientific Ways of Knowing	D	6
	7	Life Sciences	C	3,6
	7	Life Sciences	D	4
Ecosystem Facelift	5	Life Sciences	C	4,5,6
	5	Science and Technology	A	1
	6	Science and Technology	B	2,5
	7	Science and Technology	B	4
	7	Earth and Space Sciences	C	2
	7	Life Sciences	C	3
	7	Life Sciences	D	5
	8	Life Sciences	D	5
	8	Science and Technology	B	3
Ethi-Reasoning	4	Science and Technology	A	1
	5	Science and Technology	A	1
	5	Scientific Ways of Knowing	A	1
	6	Science and Technology	A	1
	6	Scientific Inquiry	B	3,4
	6	Scientific Ways of Knowing	A	1
	6	Scientific Ways of Knowing	C	3,4
	7	Scientific Ways of Knowing	C	3
	7	Scientific Inquiry	A	3
	7	Scientific Inquiry	B	5,6
	8	Scientific Ways of Knowing	A	1
	8	Scientific Ways of Knowing	B	2
History of Wildlife Management	5	Earth and Space Sciences	C	6
	5	Life Sciences	C	4,5
	5	Science and Technology	A	1
	5	Scientific Ways of Knowing	A	1
Otter Parts	K	Life Sciences	B	5
	1	Life Sciences	B	3
	2	Life Sciences	B	6
	3	Life Sciences	B	2

Ohio Academic Content Standards for Science

Activity	Grade	Content Standard	Benchmark	Indicators
Otter Retreat	3	Scientific Inquiry	B	2,5
	5	Scientific Ways of Knowing	B	2
	5	Earth and Space Sciences	C	6
	5	Life Sciences	C	4,5,6
	6	Life Sciences	C	8
	6	Life Sciences	C	8
	6	Life Sciences	A	2
	6	Scientific Inquiry	B	3
	7	Earth and Space Sciences	C	4
	7	Life Sciences	B	8
Pay to Play	5	Earth and Space Sciences	C	6
	5	Life Sciences	C	6
	5	Science and Technology	A	1
	6	Science and Technology	B	5
	6	Science and Technology	A	2
	7	Science and Technology	A	2
	7	Science and Technology	B	4
	7	Scientific Inquiry	B	7
	7	Life Sciences	C	3
	8	Science and Technology	B	3,4
	8	Scientific Inquiry	A	3
	8	Scientific Ways of Knowing	B	2
Planting Animals	5	Earth and Space Sciences	C	6
	5	Life Sciences	C	4,5,6
	5	Science and Technology	A	1
	5	Science and Technology	B	3
	6	Life Sciences	C	8
	7	Life Sciences	C	3
	7	Life Sciences	D	4

Ohio Academic Content Standards for Science

Activity	Grade	Content Standard	Benchmark	Indicators
Pro & Con: Consumptive and Nonconsumptive Uses of Wildlife	3	Life Sciences	C	6
	3	Science and Technology	A	2
	3	Scientific Inquiry	B	2,5
	4	Scientific Ways of Knowing	A	1
	5	Scientific Ways of Knowing	A	1
	5	Scientific Ways of Knowing	B	2
	5	Earth and Space Sciences	C	6
	5	Scientific Inquiry	B	2,3
	5	Science and Technology	A	1
	5	Life Sciences	C	5,6
	6	Life Sciences	C	8
	6	Science and Technology	A	2
	6	Scientific Ways of Knowing	C	3,4
	7	Life Sciences	D	4
	7	Scientific Inquiry	B	6
	7	Science and Technology	A	2
	8	Science and Technology	A	2
	8	Life Sciences	B	3
	8	Life Sciences	D	5
River Otter Game	K	Life Sciences	B	5
	1	Life Sciences	A	1,4
	1	Life Sciences	B	3
	2	Life Sciences	A	1,5
	2	Life Sciences	B	6
	3	Life Sciences	B	2
The Otter Game	10	Life Sciences	F	15,16
	10	Life Sciences	G	18
	11	Life Sciences	E	7,8
Tracks	3	Scientific Inquiry	C	6
	3	Life Sciences	B	2
	6	Scientific Inquiry	B	3
	6	Scientific Inquiry	A	1
	7	Scientific Inquiry	A	3
	7	Life Sciences	A	1
	7	Life Sciences	B	8
	8	Life Sciences	B	3
	8	Scientific Inquiry	A	1

Ohio Academic Content Standards for Science

Activity	Grade	Content Standard	Benchmark	Indicators
What You Wear is What They Were	3	Scientific Inquiry	B	3,5,6
	3	Scientific Ways of Knowing	C	2
	3	Science and Technology	A	1,2,3
	3	Science and Technology	B	3,5
	4	Science and Technology	A	1,2
	4	Scientific Ways of Knowing	C	2
	5	Science and Technology	A	1
	6	Scientific Ways of Knowing	C	3
	6	Science and Technology	A	1,2
	7	Science and Technology	A	1,2
	8	Scientific Inquiry	B	3

Ohio Academic Content Standards for Social Studies

Activity	Grade	Content Standard	Benchmark	Indicators
Checks and Balances	3	Social Studies Skills & Methods	D	6
	4	Social Studies Skills & Methods	D	10
	5	Social Studies Skills & Methods	D	9
Ecosystem Facelift	2	Geography	B	4
	2	Geography	C	5,6
	3	Geography	A	1
	3	Geography	B	6
	3	Social Studies Skills & Methods	D	6
	4	Geography	B	4
	4	Social Studies Skills & Methods	D	10
	5	Social Studies Skills & Methods	D	9
Ethi-Reasoning	3	Social Studies Skills & Methods	D	6
	4	Social Studies Skills & Methods	D	10
	5	Social Studies Skills & Methods	D	9
	8	Social Studies Skills & Methods	D	4,5
History of Wildlife Management	3	Government	A	1,4
	3	Citizenship Rights & Responsibilities	A	1,2
	3	Citizenship Rights & Responsibilities	B	3
	3	Social Studies Skills & Methods	A	1
	4	Citizenship Rights & Responsibilities	A	1
	6	Government	A	1
Otter Parts	X	X	X	X
Otter Retreat	X	X	X	X
Pay to Play	3	Citizenship Rights & Responsibilities	A	1,2
	4	Citizenship Rights & Responsibilities	A	1
Planting Animals	3	Social Studies Skills & Methods	B	3
	3	Social Studies Skills & Methods	D	6
	4	Social Studies Skills & Methods	D	10
	5	Social Studies Skills & Methods	D	9

Ohio Academic Content Standards for Social Studies

Activity	Grade	Content Standard	Benchmark	Indicators
Pro & Con:Consumptive and Nonconsumptive Uses of Wildlife	3	Social Studies Skills & Methods	A	1
	4	Social Studies Skills & Methods	A	1,3
	4	Social Studies Skills & Methods	B	5,6
	5	Social Studies Skills & Methods	A	1,2,3
	5	Social Studies Skills & Methods	B	4,5,6
	6	Social Studies Skills & Methods	B	2
	8	Social Studies Skills & Methods	A	1
	8	Social Studies Skills & Methods	D	4,5
	10	Social Studies Skills & Methods	A	1
River Otter Game	X	X	X	X
The Otter Game	X	X	X	X
Tracks	X	X	X	X
What You Wear is What They Were	5	Economics	A	1,2
	7	Social Studies Skills & Methods	B	1

Glossary of Terms and Keywords

Adaptation- An alteration or adjustment in structure or habits by which a species improves its condition in relationship to its environment.

Bag Limit- The maximum number of animals allowed to be taken by an individual in regulated fishing or hunting.

Carnivore- An animal that gets its food and energy by killing other animals

Carrion- Bodies of dead animals, usually found in nature in the process of decay

Carrying Capacity- The maximum number of individuals that a given environment can support without detrimental effects.

Community- A group of plants and animals living and interacting with one another in a specific region under relatively similar environmental conditions.

Consumptive use- Any use that involves activity resulting in the harvesting of wildlife.

Crepuscular- Animals that are active at dawn or dusk.

Diurnal- Animals that are active during the day.

Domesticated- To train or adapt and animal or a plant to live in a human environment and be of use to human beings.

Ecosystem- A natural unit that includes living and nonliving parts interacting to produce a stable system in which the exchange of materials between the living and nonliving parts follows closed paths.

Endangered- A species that is in danger of extinction throughout all or a significant portion of its range.

Extirpated- An organism missing from its native range but is not extinct.

Furbearer- The name given to mammals that traditionally have been hunted and trapped primarily for their fur.

Habitat- The arrangement of food, water, shelter, and space suitable to animals' needs.

Herbivore- An animal that gets its food and energy by eating plants.

Marsupial- A type of mammal that has a pouch to carry their young

Native- A plant or animal species that was produced, grew, or originated in a certain region.

Natural Resource- A material source such as timber, fresh water, or a mineral deposit, that occurs in a natural state and has economic value.

Nocturnal- Animals that are active at night.

Nonrenewable- Nonliving resources such as rocks and minerals that do not regenerate themselves and cannot and cannot be replaced in our geologic time

Omnivore- An animal that gets its food and energy from eating both plants and animals.

Pelt- The raw skin of a wild animal with the fur in place.

Predator- Animals that kill and eats other animals.

Prey- Animals that are killed and eaten by other animals.

Reintroduction- When a plant or animal species is introduced back into their natural habitat.

Renewable- A resource such as plants and animals that can be replaced by new growth and has the capacity to renew itself when conditions for survival are favorable.

Riparian- Green areas of life found on the edges of water courses like streams, rivers, and lakes.

Scat- Animal waste droppings

Trappers- Someone who traps animals for their fur.

Watershed- The region draining into a river, river system, or other body of water.

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