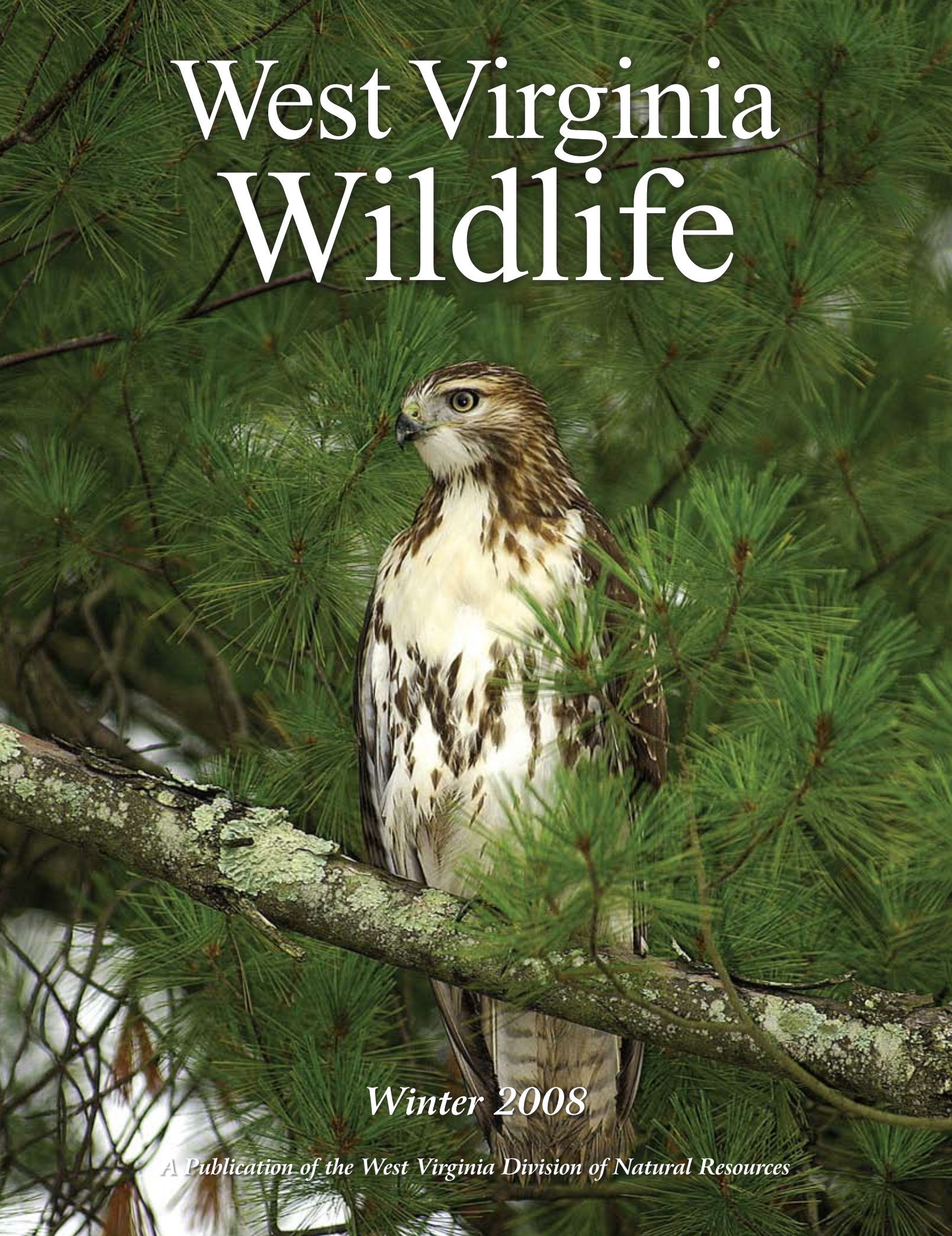
West Virginia Wildlife



Winter 2008

A Publication of the West Virginia Division of Natural Resources

Wild Perspective

The Reason for the Wrong Season

Why a winter issue after March 21 you may ask? Actually, there is a good reason why this issue is so late. In mid-January, we sent the electronic file of the magazine to the printer who held the current contract. Shortly after that I got a call from the printer saying they had proofs ready to send that afternoon. Several days later I got a call from the printer saying they had not sent the proofs because unfortunately the company was unable to continue in business and would not be able to print the issue.

After scrambling around a week trying to explore all the options, we realized that the most expedient way to get the winter issue printed and to try to gain lost time for future issues was to rebid the printing contract and hand the winter issue to the successful vendor "as soon as the ink was dry on the contract." We are working on the spring issue and plan to have it to the printer by the time the winter issue is delivered to your house.

We will do our best to get production back on schedule after this untimely delay. We appreciate your patience and hope you continue to look forward to future issues of **West Virginia Wildlife**.

Art Shomo
Editor

West Virginia Wildlife

Craig Stihler

Cup lichen (Cladonia chlorophaea)

20

Winter, 2008
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Capturing the Truth about West Virginia's Musky

By Kevin Yokum and Scott Morrison

One of West Virginia's most elusive fish, the muskellunge, is being caught at an amazing pace. The strange part about the prolific fishing is that no rods, line or lures are being used. The Division of Natural Resources (DNR) Wildlife Resources Section is using high tech electrofishing boats to study muskellunge populations in two of the Mountain State's better musky streams. The study involves the Buckhannon River, which is annually stocked with fingerling muskellunge, and Middle Island Creek, which has a naturally reproducing population of muskies.

Muskies that are captured during this study are injected with tags that have a microchip that can send a unique number to a scanner. The tags are about the size of a small pill and are not visible after they are inserted. A portable scanner, which works much like those at the grocery store, is used to check recaptured muskies for tags.

Recapturing a tagged musky supplies the Wildlife Resources Section with movement and growth information. The study may also supply information on musky behavior characteristics such as movement; identify habitat preference; and investigate the spawning potential of stocked fish. Results from this study will provide the DNR with some of the most extensive data ever assembled on West Virginia musky populations, and that should mean better management and fishing for one of the Mountain State's largest game fish.

The study began in 2002 and will be continued through at least 2009. On the Buckhannon River, the six-mile Buckhannon Pool is currently being evaluated, but expansion of the study is planned

Releasing a musky caught on the Buckhannon River.

Photo by DNR

A portable scanner is used to check muskies caught by anglers and biologists for pit microchip tags injected into the fish.

Photos by Scott Morrison

next year as access to the lower river has been developed. The Buckhannon Pool has a special "catch-and-release" regulation for muskies so the expanded study area will allow biologists to compare the effects of catch-and-release regulations versus standard regulations on musky populations.

Since the study started, WRS personnel have collected more than 300 muskies within this six-mile section. More than 120 of these muskies have been recaptured. Several of these fish have been collected multiple times, including six fish which have been collected six times. Electrofishing catch rates on the Buckhannon Pool have remained steady at almost five fish collected per hour. That rate translates into a musky being collected every 12 minutes! Musky anglers should be excited because this catch rate indicates the fishing opportunities provided by the Buckhannon River.

Scott Morrison

Middle Island Creek, a classic musky stream, has been managed under catch-and-release regulations for 14 years.

Only a few of the fish collected from the Buckhannon have moved more than a mile between captures and the majority have been found less than 200 yards from where they were originally collected. One musky, however, traveled seven miles in just over a month and longer journeys may be documented once downstream expansion of the study is implemented.

Findings from Middle Island Creek are also impressive. Middle Island Creek has better access for electrofishing boats than the Buckhannon and a larger section of the Creek can be studied. Biologists have tagged more than 240 muskies on Middle Island Creek, 87 of which have been recaptured. Middle Island Creek muskies appear to move more than their counterparts from the Buckhannon. The average move for Middle Island Creek musky was more than three miles. The Middle Island Creek study also found that males moved more and for greater distances than females. The longest moves found for Middle Island Creek fish were 51, 46 and 41 miles. These three fish all moved downstream. The greatest move found for a female was 18 miles upstream. Biologists discovered that Middle Island Creek's standard regulation areas had musky population densities similar to Middle Island Creek's seven-mile-long "catch-and-release" section.

The information obtained from this and other fisheries research surveys will help biologists better understand this important game fish, and ultimately lead to increased fishing opportunities.

Scott Morrison

Gary Batton, wildlife manager, holds a hefty musky caught in Middle Island Creek during a research survey.

Kevin Yokum and Scott Morrison are the district fisheries biologists stationed in French Creek and Parkersburg, respectively.

Field Trip

Twin Falls Resort State Park

Scott Durham

Buzzard Cliff overlook

Brown Thrasher

Photo by Johnny N. Dell, Bugwood.org

Description: Oak-hickory and hemlock forests dominate this 3,776-acre park. Natural and manmade openings in the forest provide acres of edge-type habitat and numerous wildlife viewing opportunities. Thirteen trails provide nature enthusiasts 26 miles of paths to explore the park. Trails cover varying degrees of difficulties and ranges of interests. A number of yellow poplar coves lend beauty to the fall scenery.

Wildlife Viewing Information: Look for white-tailed deer along the forest edge. A variety of songbirds fill the forest, especially in spring and summer when many neotropical migrants come to the park to breed. Various warblers, the brown thrasher, red-eyed vireo, red-winged blackbird, and ovenbird are just some of the species inhabiting the park in summer. Marsh and red-shouldered hawks frequent the park. Three species of owls are year-round residents: Eastern screech, great-horned, and barred. Listen particularly for the latter two species at night. Coyotes add to the nighttime sounds. Although woodcocks and ruffed grouse are tough to see in their forested habitat, in spring you can listen to the mating calls of the woodcock and the male ruffed grouse drumming his wings. Wild turkeys are commonly seen during late summer and fall, and less frequently in the spring and early summer. Elusive black bears and gray foxes are sometimes seen. Summertime hours can be spent chasing butterflies and dragonflies. Impressive thickets of the rhododendron, West Virginia's state flower, bloom around the first of July, while early June visitors can catch the blooming mountain laurel.

Visitors to the nature center can view mounts of assorted animals, including bear, coyote, bobcat, raccoon and fox along with some rather impressive deer racks. Some live snakes including the timber rattlesnake, copperhead and black rat snake are often kept at the center. A few other natural history and cultural displays are available.

Directions: The park is located 24 miles from I-64/77. Take Exit 42 (Robert C. Byrd Drive) off I-64/77 at Beckley and travel south on state Route 16/Route 97. Follow signs to the park. Travel on state Route 16/ Route 97 for 3.7 miles, then bear right onto state Route 54 south for 13.5 miles to Maben. Take state Route 97 west from Maben for 5.5 miles to a T intersection. Turn left at the stop sign onto Bear Hole Road, and proceed for 0.6 mile to the park entrance.

Ownership: WV Division of Natural Resources. For more information on park accommodations and recreational facilities, call the park at 304-294-4000, or 1-800-CALL WVA, or visit www.twinfallsresort.com.

Excerpt from West Virginia Wildlife Viewing guide by Mark Damian Duda. For a free copy (plus shipping and handling), call 304-637-0245.

Coping with Winter's Cold

By Jim Fregonara

Leaves have fallen off the trees. The bare branches silhouette the gray sky. Snow blankets the ground and crunches underfoot. Days are short and the nights are cold. The woolens are brought out of the closet, hot cocoa is the beverage of choice, and the smell of wood burning in a fireplace permeates the darkness. These are the wonderful ways humans cope with winter.

But, with temperatures dropping into the single digits, a scarcity of natural food, and fresh drinking water locked in ice, how does wildlife survive? They survive this season by doing one of the six survival words that end in "–ate." They can hibernate, insulate, congregate, generate, propagate or migrate.

Craig Stihler

Little brown bats spend the winter hibernating in caves.

Most people are familiar with hibernating mammals, such as chipmunks and woodchucks, and maybe even hibernating reptiles such as snakes and turtles. Deep sleep, along with low heartbeats, breathing and metabolic rates, enable true hibernators to sleep through the winter. Certain squirrel species can spend up to nine months hibernating in extremely cold climates. Amphibians, such as frogs, toads and reptiles such as aquatic turtles may bury themselves in the mud to escape the extreme cold temperatures while conserving energy. Different species of snakes, including venomous copperheads and timber rattlesnakes along with non-venomous black rat snakes, can share the same hibernating dens called hibernacula.

Hibernation is a controlled form of hypothermia. This lowering of the body's internal thermostat is controlled by hormones produced by the animal's endocrine system. What hibernating mammals do every year would be fatal to humans. Hibernating animals can lower their temperature to near 32 degrees and can lower their heart rate to a few beats a minute. Breathing rates also decrease greatly since the animal's metabolic rate drops.

Bats entering caves may have a heart rate up to 1,000 beats per minute during flight before hibernation and will lower their heart rate to five beats per minute during hibernation. Their body temperature also decreases to become only a few tenths of one degree above the temperature of the cave. Before bats can hibernate they have to double their body weight to provide the necessary stored energy, since they lose 25 percent to 50 percent of their body weight during hibernation. If they are disturbed and awakened during hibernation, they will leave the cave in search of food and use up precious stored body energy. They won't find their main source of food, flying insects, in the winter. If they return to the cave and return to a deep sleep, they may not have

Like many birds, the red-bellied woodpecker fluffs out its feathers, trapping a layer of warmer air close to its body.

Photo by Ron Snow

Steve Shaluta

Layers of hair help keep deer warm in snow.

enough stored fuel to make it until spring when insects are out.

Birds such as black-capped chickadees have another trick up their feathers to survive the cold winter weather. They can go into a nightly mini-hibernation to conserve energy. This torpor lowers their metabolic rate and body temperature a few degrees. When the sun comes up, their body warms up and they can begin their daily quest to find more fuel to sustain them for another day.

Another way wildlife survives the blustery winter is to insulate. Many animals eat as much as they possibly can before the winter months to pack on the pounds or – depending on the size of the animal – pack on the ounces. This fat layer acts as a layer of insulation to help keep the animal warm. Animals active during the winter also may spend time in underground burrows or leaf-filled nests that have insulating properties. Ruffed grouse can actually burrow themselves in snow to conserve body heat. Snow can act as an insulator if the outside air temperature is extremely cold. Roosting birds can fluff out their feathers, trapping a layer of warmer air close to their bodies to help them stay warm during the night.

Deer are insulated by several layers of fur. They have a softer fur close to the body along with longer, hollow guard hairs. The guard hairs are hollow, creating an insulating layer of air warmed by body heat.

Jeff Craig

Bird feeders are an important food source during winter.

Congregating wildlife use a communal approach to conserve precious body heat. By grouping close together, any escaping heat from one animal may be shared by another one. For example, a covey of quail can form a tight group to conserve body heat in the winter. Squirrels and mice cuddle up in a nest for a few days during cold spells to take advantage of shared body heat.

The few animals which remain active throughout the winter spend a considerable amount of time generating body heat to keep warm. This heat generation comes at a high cost, however. These animals spend the majority of every day trying to find fuel in the form of food to power their internal heat production. Birds especially use this survival technique, so it's important to keep your bird feeders clean and full.

Another way for a species to survive the winter is to propagate. If an animal can't survive the harshness of winter, it passes on its survival chances to its offspring. This winter survival technique is used by many species of insects. Adult insects breed before winter, lay their eggs, and then succumb to the first hard frost. With the arrival of warmer temperatures in the spring, the eggs or larvae hatch and grow to adulthood, surviving on emerging sources of food. Unfortunately for the insects, this "method of survival" also benefits woodpeckers and nuthatches that spend a considerable amount of their waking winter days searching underneath bark on trees for over-wintering insect eggs or larvae.

Probably the best known winter survival technique is migration. For thousands of years, many animals have performed the twice a year migration in order for their species to survive. Examples of migrating animals include some species of butterflies and bats, whales and birds. For them, the benefits of migrating outweigh the costs for making these dangerous trips -- benefits such as better food supplies, longer daylight hours and warmer temperatures. More than 85 species of birds which breed in West Virginia fly south for the winter.

Though we think of birds migrating to warmer climes in winter, a few species of the other group of warm-blooded animals – mammals – also migrate. Pacific gray whales and humpback whales leave the icy waters of the Arctic to swim thousands of miles to the Baja Coast of Mexico or to Hawaii. The hours of Arctic daylight in winter suppresses growth of algae eaten by krill, a shrimp-like crustacean preferred by the whales. The subsequent lack of krill drives the whales to sunnier, warmer climates.

In the high elevation of the Rocky Mountains in the western United States, some members of the deer family practice a vertical migration. They spend the summers in the higher elevations of the mountains and then migrate thousands of feet down out of the snow-covered peaks to the valleys for the winter. This migration again relates more to finding a suitable food supply than escaping colder temperatures.

Even the small, fragile West Virginia state butterfly, the monarch, migrates thousands of miles to Mexico to wait out the winter. Millions of monarchs from the midwestern and eastern United States spend the

Lacy L. Hyche, Auburn University, Bugwood.org

Praying mantis (left) survives cold weather by laying the next generation of mantids in a protective egg case (above).

Photo by Jessica Lawrence,
NC State Entomology Department, Bugwood.org

Ron Snow

The monarch butterfly leaves winter behind and gathers with tens of thousands of monarchs in the mountains of Mexico.

winter months in a 70-square-mile patch of land in the Sierra Madre Mountains in Mexico. How can a fragile butterfly make the perilous journey to a place it has never been before? Instincts, replayed over thousands of previous generations, guide these butterflies to their ancestral wintering grounds.

Birds also travel thousands of miles before they reach their wintering grounds. The champion migrating bird in terms of distance is the arctic tern which travels thousands of miles every year from the northern hemisphere to the southern hemisphere. It is estimated that this bird travels enough miles throughout its lifetime to reach the moon! Some of the birds we see at our feeders in the winter have actually migrated from colder, more northern regions, such as Canada, choosing West Virginia as their "warmer" winter destination.

Migrating birds face many perils on their annual treks. An obvious difficulty can be its winter destination. Are the wintering grounds still there, or has the area been converted to agriculture? What physical obstacles will they encounter on the way south?

For example, during peak fall migration time usually in early October, foggy moonless nights coupled with certain wind conditions, can make for hazardous flying conditions. Birds may fly lower than normal and if there are lights illuminating the dark, foggy sky, the birds can become confused by the artificial light. They then circle the lighted area in a state of confusion and eventually collide with buildings, wires, poles or any other structure. This has been documented in West Virginia at higher elevations: near Monterville in Randolph County; Snowshoe Resort in Pocahontas County, and Tucker County High School. Hundreds of birds of many species have been killed this way. DNR wildlife biologists have found that the birds died from massive trauma received from colliding with manmade structures.

Other manmade structures that have created havoc in the migratory pathways are newly constructed cell or microwave towers, the guy wires holding them up and wind turbines. As we look for balance between human demands and nature's needs, the paths of migration and location of these obstacles will need to be closely studied.

In spite of all the challenges of migration, many species will continue to use this "-ate" method of surviving winter's cold. Fortunately for us humans, we can simply grab a sweater and put another log on the fire.

Jim Fregonara is a wildlife biologist stationed in Elkins.

Wildlife Diversity Notebook: Meadow Vole

Common Name:
Meadow vole (field mouse)

Scientific Name:
Microtus pennsylvanicus

West Virginia Status: Populations are stable; meadow voles are abundant in the state.

Description: The meadow vole is a stocky, mouse-like creature in the rodent family. Their color is variable, from yellowish- or reddish-brown to blackish-brown on their back, with a gray belly. The body is 3 to 5 inches long, with a 1- to 2-inch-long tail. The short tail aids in distinguishing them from mice. Their feet are dark. An adult weighs 1 to 2 ounces. Long, soft fur hides their small ears. Like other rodents, they have two pairs of incisors in the middle of the upper and lower jaw which continue growing throughout their life.

Habitat: Meadow voles thrive in lush fields, moist meadows and open woodlands thick with grasses and sedges. The thick grass provides protection from its numerous predators.

Diet: They feed on grasses, sedges, seeds (especially pine cone), flowers, leaves, and roots of shrubs and small trees, bulbs. They may eat the bark of small trees, especially in the winter. They eat almost their own body weight each day. Their feeding habits may destroy hayfields, gardens and fruit trees. They may occasionally eat insects.

Steve Shaluta

The red-tailed hawk is one of the meadow vole's many predators.

Joe Kosack/PGC Photo

Meadow Vole

Range: Across Canada and much of Alaska, northern United States, dipping as far south as Georgia and South Carolina in the eastern United States. Meadow voles tend to have a larger body size in colder climates.

Life History: Meadow voles are active year-round, often traveling under a mantle of snow in the winter when they are more active during the day. In summer, they become more nocturnal. As a measure of protection, they are less active during a full moon. When alarmed, voles stamp their hind feet like rabbits. They are fast afoot, reaching speeds of five miles per hour, and can also swim well.

Voles are prolific breeders which compensates for their short average life span of less than one year. After a short gestation period of 21 days, the female gives birth to 4 to 7 young. A vole may have 5 to 8 litters per year. They are sexually mature after one month. They nest in a depression on the ground under a thick cover of grass or in an underground burrow which they dig. As long as there is sufficient snow for protection, they build their spherical grass nest on the surface. The grass nest is about 5 to 6 inches in diameter. They build a network of runways, each about the width of a garden hose, out from the nest. The population density can sometimes reach several hundred voles per acre.

Meadow voles, a foundation of the food chain, fall prey to many animals. Predators include hawks, owls, crows, herons, foxes, raccoons, skunks, shrews, bullfrogs, snapping turtles, and even predatory fish such as bass and musky.

Providing habitat for wildlife in your own backyard

Many homeowners are interested in improving their property by landscaping, cleaning up trash, and planting flower beds and vegetable gardens. Many of the same things that improve the aesthetic value of your property can also benefit wildlife. This article provides ideas for projects that will help attract wildlife to your backyard and maintain a year-round natural habitat.

DNR photo

A wildflower garden adds beauty to your property as well as providing wildlife habitat.

Spring backyard habitat projects

Install a nest box or shelf

Many species of birds will nest and raise their young in your backyard if the right habitat exists. Eastern bluebirds, house wrens, eastern phoebes and American robins are just a few of the species that will build their nests in nest boxes (bluebirds and wrens) or on nesting shelves (phoebes and robins). It is important that pesticides aren't used in a backyard habitat where birds are nesting because parent birds feed their young insects, which may be poisoned by the use of pesticides.

Nest boxes and shelves should be placed in late winter so they are available by late February or March, when many birds are starting to look for a nest site. For information about which nest boxes are appropriate for your backyard, please contact the DNR Wildlife Diversity Program in Elkins at 304-637-0245.

DNR photo

Eastern bluebird making use of a nest box.

Mark Shock

Monarch sipping nectar from milkweed flowers.

Plant a garden for hummingbirds and butterflies

Planting a butterfly and hummingbird garden near your home will not only benefit these attractive nectar-feeders, but the flowers will add beauty as well. A few of the native perennials that attract and feed both hummingbirds and butterflies are bee balm, cardinal flower, wild columbine, asters, ironweed, joe-pye weed, milkweed and butterfly weed. Some native plants to feed the caterpillars of butterflies, which are essential to the survival of butterfly populations, are clovers, common milkweed, unmowed grasses, spicebush, sassafras, dogwood, violets and asters.

Provide natural foods for all seasons

Fruiting plants – Songbirds, game birds and mammals rely on the fruit provided by West Virginia's diverse selection of shrubs and vines. Many of these shrubs and vines also provide nesting and escape cover for wildlife. A few examples of fruiting species [and when their fruits are available to wildlife] are blueberry [summer and fall], serviceberry [summer], dogwood [fall], wild grape [summer and fall], sumac [winter and early spring], and highbush cranberry [fall and winter].

Nuts and acorns – Nuts, such as hickory nuts, beechnuts and acorns from oak trees are highly preferred foods for many wildlife species. Deer, squirrels, chipmunks, bears, turkeys, grouse, wood ducks and raccoons all feed heavily on nuts and acorns in the fall. Bulking up on these high-carbohydrate foods enable animals to survive through the winter. Some of the native nut- and acorn-producing trees and shrubs that have high value for wildlife are hickories (shagbark, pignut, mockernut, butternut), black walnut, butternut, American beech, witch-hazel, American hazelnut, beaked hazelnut, and oaks (white, chestnut, black, scarlet, scrub, northern red).

Acorns are a preferred food of many wildlife species.

DNR photo

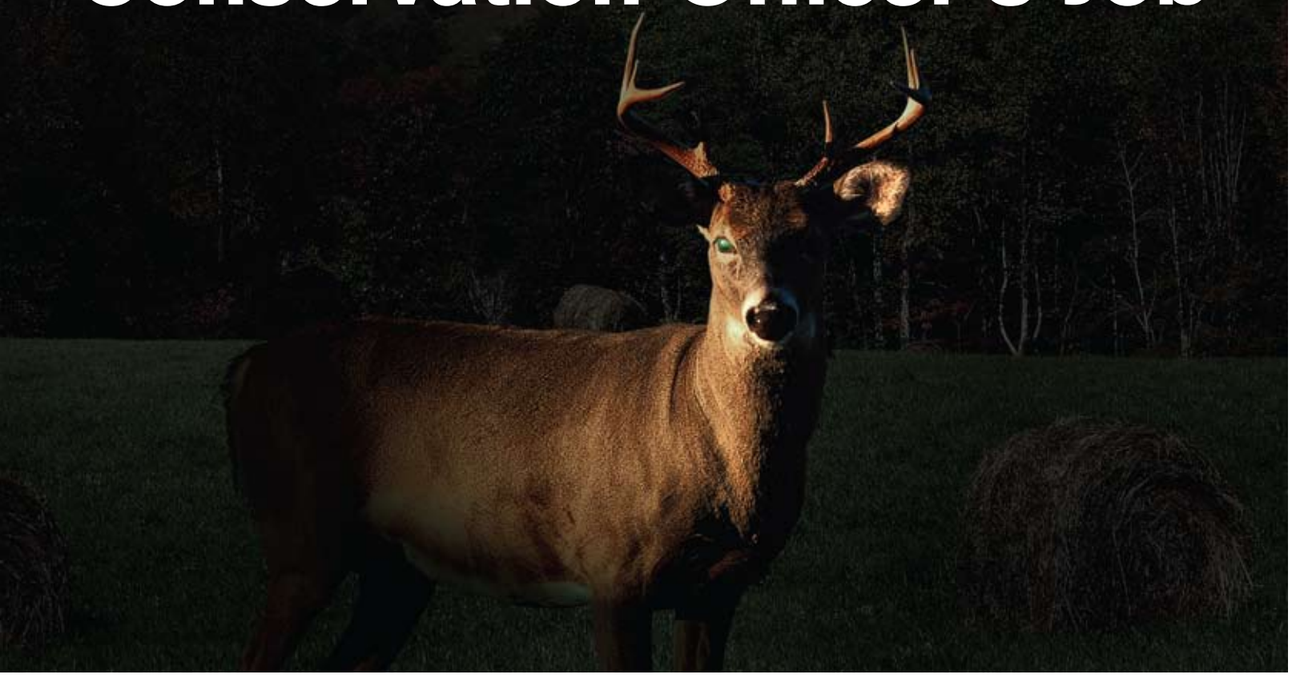
Add evergreen cover to your property

Evergreens are very important to wildlife not only because they provide food for some species abut also because they provide important thermal cover in winter. Spring is the time to plant evergreens that will become an essential element in your backyard habitat. Evergreens with branches close to the ground give animals some refuge from the snow and provide the best thermal cover. Evergreens planted in groups or "clumps" provide the best protection from wind and blowing snow, but one single evergreen tree or shrub is certainly better than none. Sharp-shinned hawks, mourning doves, black-capped and Carolina chickadees and red squirrels are just some of the species that take cover in evergreens. Some examples of native evergreen trees with high food and cover value for wildlife are red cedar, white pine, eastern hemlock and American holly. Some native evergreen shrubs that benefit wildlife are American yew, rhododendron and mountain laurel.

Art Shomo

Evergreen trees provide shelter from the weather and predators, and food for some wildlife.

SHEDDING LIGHT on a Conservation Officer's Job



"But officer, you were supposed to be off!"

by Cpl. Jeff Sweeney

Early in my career, I was teaching hunter education at one of the junior high schools in Mason County. At that time, the certification for hunter education was five hours in-class instruction. I was teaching in a regular classroom with a teacher present during the entire class. As the week went on I was asked a lot of questions about the laws and how we were able to get information to catch people. I answered all the questions as best I could without giving away any secrets that I had been taught by veteran conservation officers. The teacher asked me who took care of wildlife law enforcement in my area when I was teaching a class. I told her that the other work would have to wait until after the class was over. I further told her that the good side to teaching at the schools was that I got the weekend off because of being at the school all week.

This particular class lasted until Friday, the first day of March. During the week I received a complaint about someone spotlighting and shooting deer. In addition, I was informed that a college intern from West Virginia State College (now University) would be riding with me starting Saturday, March 2. As the week went on I received another complaint of spotlighting in the same area. I called the intern and made arrangements for him to ride with me on patrol that Saturday night. I finished out my week at the school on Friday. Due to the classes, I had taken the previous weekend off because of the structure of our work week which begins on Saturday.

I was excited about going to work that Saturday because I was going to have my own intern. I had worked with other interns, but never had one assigned specifically to me. I scheduled work for night time because of the complaints on spotlighting deer. After I met my intern, we went to McDonalds to get to know each other. My intern was about to graduate from college. When he told me what he did for a living, I told him I thought he was crazy. He thought being a game warden was a dream job, and I thought he already had the dream job. I won't say what the job was, but he was already wearing a brown uniform, driving a brown truck.

After eating supper, we went to the area of the complaint. We backed up next to a round bale of hay about 20 feet off the road. I told my intern that I would show him just how boring the job could be waiting on a spotlighter in March. Up to this time, I had never worked spotlighting complaints after December. Within minutes after arriving, we walked the path to the road and back.

Before we could get comfortable in our seats, we had business. A truck had stopped directly beside us, no more than 20 feet away. I thought they saw us. Then the passenger stuck his gun out the window toward us, but quickly positioned himself on the door of the truck with the gun on the cab of the truck. The driver shined a high-powered spotlight into the field across from where we were sitting. I couldn't start my vehicle because we were too close and I didn't want to give up my hiding spot. As the driver pulled into the field across the road, he drove toward the back of the field. I took this opportunity to start my vehicle and move without my lights on. When I got to the edge of the field at the road, my vehicle got in a bind and I started spinning. I turned on my lights. They saw us and started fleeing in the other direction.

I then put the vehicle in four-wheel drive and activated my lights and siren. The chase was on! I told the intern to put on his seatbelt and then told him to buckle mine also as I handed it to him. We were chasing a white Chevy truck with a lift kit and a black full-sized rollbar. I got on the radio and called for assistance from the Sheriff's Department. We gave the description of the suspect's vehicle and continued on the chase for approximately two miles. The road was gravel and we were using every bit of it. We couldn't get close enough to read the license plate. At the two-mile mark, about ½-mile from the paved road, we entered a sharp left-hand curve. As we started through the curve I noticed that there was no gravel, just fresh dirt. The dirt caused us to spin out and we faced off with the road bank. As I reached for the gear shift to put the vehicle in reverse, the vehicle rolled over onto its top. The lights and siren were still on and we were hanging upside down in our seats. Thank God for seatbelts. The intern, an army veteran, got loose and helped me out of the vehicle.

I was disoriented after the crash and couldn't remember which way we were traveling. A man came to check on us and we were able to call on the radio to report the direction the suspect vehicle was traveling. I advised the dispatcher that there was an accident and that we needed an officer to take a report. I never told him that I was the accident that needed to be investigated. When the deputy arrived, he realized that I was injured and had had a bad evening up to that point, so he took the opportunity to tell me that another deputy had stopped the suspect several miles away. The deputy took us to the location and I personally put the cuffs on the suspects, impounded their truck, confiscated their guns and put them in a cruiser and had them transported to the jail. The dispatcher called another conservation officer from Putnam County and my supervisor.

My supervisor and the other conservation officer met us at the jail. I filled out a complaint for a warrant and turned the case over to my supervisor. I was taken to the hospital with a separated shoulder, treated and released, but not before the spotlighters got out of jail on bond. The intern was not injured, but I was off work about three weeks. The intern requested to finish his time after I came back to work. He finished his time during the spring turkey season that year and we were successful at working a bait site with the help of the Putnam County conservation officer. The intern, however, never came to work as a conservation officer.

Both spotlighters pleaded guilty. They were fined and put in jail for 10 days. Their license privileges to hunt in West Virginia were revoked for two years. The spotlighters were brothers. One of them had been charged with a second offense. With the second offense charge, we confiscated the rifle and sold it at auction. The rest of the property and truck were returned.

The other spotlighter was married to the teacher who questioned who did my job during the week I taught the hunter education classes. I suppose she thought I would be off that weekend instead of the weekend before the class started.

Corporal Jeff Sweeney is stationed in Mason County with the DNR Law Enforcement Section.

Visual Vocabulary

When many of us were in school, we learned the meanings of words by rote memorization - repeating the word and its definition so it was ingrained in our minds (at least until the test was over). This activity helps youth learn definitions in a fun and memorable way.

Objective

Children become familiar with terms that are important in understanding wildlife and ecological systems.

Method

Kids review vocabulary through pantomime.

Materials

Dictionary (standard or ecological),

or access to Internet dictionary,

or prepared "glossary" of words and definitions written on pieces of paper

a container

Art Shomo

An "herbivore" (center) grabs a fruit from a "plant" (left) while a "carnivore" (right) readies an attack, illustrating a food chain.

Art Shomo

Two "animals" demonstrate the noun hibernation.

What to do

1. Provide your children with a list of words which relate to wildlife and ecological systems. These words should be easily acted out by one child or a group of children. Some good selections would be:

nocturnal	diurnal	predator	prey
food chain	scavenger	carnivore	herbivore
feral	parasite	insectivore	life cycle
deciduous	territory	rain shadow	migratory
arboreal	biennial	wild	domesticated
primary producer	omnivore	lichen	exotic
brood	aquatic	understory	pollution
shelter	habitat	extinction	hibernation

   Option 1: You provide the children with definitions for the words.

   Option 2: You have the children look up the words in a dictionary or online.

2. List all the words on small pieces of paper and put them in a container.
3. Each child, or preferably a group of 2-3 children, draws a word out of the container, looks up the definition and decides how to act out the word. Give them time to get their "act" together. You can decide whether or not they can make any sounds.
4. Children take turns acting out their word. With the list of words in front of them, have the other children guess the word that is being mimed. If you are doing this activity as a review, you may not want to provide them the word list. Repeat the process until all the words have been acted out.

This activity was used with permission from ProjectWILD 2001 Council for Environmental Education.

Nature Note – Woodchuck Weather

The woodchuck, commonly called the groundhog, rises to the top of popularity polls at this time every year. Captive groundhogs, such as French Creek Freddie, are aroused from hibernation and brought out into the light to satisfy human curiosity as to the length of the winter.

The woodchuck is kin to the yellow-bellied marmot and the hoary marmot, which live in the western United States and Canada. The woodchuck's range extends from the northeastern and Midwestern states across southern Canada into eastern Alaska.

Woodchucks usually inhabit meadows and old fields where they forage for grasses, clover and succulent plants. They can swim and climb tees, but rarely venture far from their dens.

Farmers and gardeners take a dim view of the woodchuck's eating habits because of its fondness for vegetables. Woodchuck burrows also create a hazard for livestock. The burrows can be up to 30 feet long and five feet deep, and consist of one or more tunnels, along with a nesting chamber.

Woodchucks are not without benefit to the environment. Their excrement, left in a special underground chamber, fertilizes the soil. In addition, their digging aerates the soil, lets moisture and organic matter in, and brings up subsoil to become new topsoil.

Steve Shaluta

The woodchuck is sometimes called a whistlepig because it gives a loud whistle when alarmed. Other noises in the woodchuck's repertoire include teeth chattering when angry, hisses, growls and squeals.

Kenny Hall holds French Creek Freddie, weather prognosticator at the West Virginia State Wildlife Center.

DNR photo

In West Virginia, woodchucks begin hibernation around late October. During hibernation, body temperature falls to just above freezing, heart rate slows to four beats a minute, and breathing slows to one breath every six minutes.

Upon awakening in spring, the male seeks a mate and stays only briefly with the female. Four to five blind and hairless young are born in April. The young leave home after two months.

Conservation Genetics and Fisheries Management

By Chris O'Bara

The science of genetics has far-reaching implications in many aspects of our lives. Medical research, health management, criminal investigations and natural resources management, including fisheries management. Recreational fisheries management and species restoration efforts can be enhanced through application of conservation genetics analysis techniques.

So why are fisheries biologists of the West Virginia Division of Natural Resources (DNR) concerned with genetics in managing our fish populations? To answer that question, let's explore a few basic concepts of genetics and how these apply to us, as well as our fishery resources. As most of us have been taught in grade school, part of who we are is dependent on our parents. Some of these traits are presented in physical attributes such as the color of our hair, eyes and our height. Also, our tolerance to cold or warm weather may be the same as one of our parents. Well, fish are no different. Any angler knows that you seek trout in cold water and channel catfish in warm water. We often find more largemouth bass in lakes and more smallmouth bass in rivers, or paddlefish in large rivers and brook trout in small streams.

Applying knowledge of genetic traits will help biologists restore the native strain of walleye to the scenic New River.

Photo by David Fattaleh

Native strain of walleye netted during a nighttime electrofishing survey.

DNR photo

We can now see a link between fisheries management and genetics. For fishery biologists of the DNR Wildlife Resources Section (WRS) this became more apparent when new opportunities and techniques allowed for the restoration of important sport fish in our state's waters. Since the late 1990s, species such as muskellunge, walleye and paddlefish have been re-introduced into rivers such as the New, Cheat, Ohio, Kanawha and Coal. These re-introductions were based on improving water quality and habitat, and the ability to spawn and rear these fish in our hatchery system.

So, our biologists asked what genetic strain of these species should be used for introductions into our state waters and how they could determine these best stocks. Several approaches can be used and WRS fisheries biologists are currently employing these techniques to match the best genetic strain to the available aquatic environment.

Logic suggests that fish from a given geographic region are best suited for that region. Consequently, it is rational to collect broodstock from adjacent water bodies and use these fish in restoration efforts. This was the initial approach WRS fisheries biologists used in the restoration of muskellunge and paddlefish. Adults were collected from the upper Ohio River watershed and returned to DNR hatcheries to be spawned, their young reared, and finally stocked into Ohio River water bodies. For muskellunge, this meant collecting and using broodstock from Middle Island Creek in west-central West Virginia to restore populations in "sister" rivers. For paddlefish, this meant collecting and using broodstock from the Ohio River to restore populations in the upper Ohio and Kanawha rivers.

DNR photo

DNR fisheries biologist Katie Zipfel prepares tissue sample for genetic analysis.

The more technical approach is to use biochemical and molecular genetic techniques to identify differences based on gene complexes of fish populations. That may be CSI stuff, but similar approaches are currently used by DNR fisheries biologists to manage our riverine walleye populations. In the late 1990s, researchers from both Ohio University and Virginia Tech identified molecular, genetic-based differences between our native walleye of the New, Kanawha and Ohio rivers, and walleye from the Great Lakes. Over time, the techniques used to identify these differences were simplified and allowed a quick evaluation without sacrificing the fish. Wildlife Resources Section fisheries biologists collect adult fish from "native" waters, take a small clip of the fin, and use DNA testing to identify if the fish is a "native" or a "Great Lake" strain. Fish from like strains can then be spawned and their young reintroduced into the appropriate waters.

So why is genetics important in providing angling opportunities and more importantly, quality opportunities to anglers? As we discussed earlier, part of who we are is dependent on our parents. The same holds for fish – their suitability to a given river or lake is dependent on their genes acquired from their parents. Old-time anglers often told stories of the large walleye caught in the New River. We now know that these growth traits were at least partially based on genetics. Wildlife Resources Section fisheries biologists are using the understanding of these genetic traits to restore this strain of walleye into the New River. Similarly, new highly technical approaches have confirmed that genetic based differences do exist between paddlefish populations and fisheries biologists have been using the appropriate strain for restoration. Only time will tell when this program will result in a restored population and perhaps, a new fishery. Also, new approaches in muskellunge genetics have been recently developed. In time these will be used by fisheries biologists to further differentiate populations and improve both the efficiency and effectiveness of rearing this important game fish.

So why use genetics in fisheries management? It enables our WRS staff to wisely and effectively manage our prized fisheries and angling opportunities.

Chris O'Bara is a fisheries biologist stationed in Parkersburg.

Likin' Lichens

Did you know that West Virginia has about 275 species of lichens? Don Flenniken, a specialist who studies lichens, wrote a book under the Wildlife Diversity Program's Research and Cooperative Projects Grants Program in which he compiled a list of lichen species known from the Mountain State.

Lichens are special for several reasons including their life history and importance in ecology. Even though we talk about different "species" of lichens, each species is really a combination of two different organisms, one a fungus and the other an alga. In the lab, scientists can separate the lichen into the fungal and algal components, and grow them independently for at least a short time. In the wild, however, if the fungal part of the lichen does not find the proper alga to partially parasitize, it will die. For many years, no one could combine the fungal component with the algal component in a laboratory and induce them to grow into a lichen. Then, by chance, a lab technician left a heat lamp on over a long weekend, and upon return discovered that the fungal component had parasitized the algal component in the dry environment and produced a lichen!

Lichens are among the first species to colonize a new area. They can grow directly on bare rock without any soil. Lichens can actually begin to make soil by secreting acids that break down rock. They also trap dust which helps form more soil and allows other species like mosses to move in.

In West Virginia, they may often be the only species seen in some of the harshest sites, such as exposed rocks on mountain summits. One species, called rock tripe, is a lichen common to these areas. Rock tripe is an edible, but not necessary palatable, lichen. It's basically tasteless and gritty! You should be careful about eating it. There are three different species of this genus of lichen, and there are two other genera that look similar. It's always best to know exactly what species you attempt to eat.

If you want to identify lichens you'll need a book and, unfortunately, most books are not designed for amateur naturalists. The definitions of the lichen structures in these books make most of us pull our hair out in frustration. So how do you start learning the lichens? First start a collection, noting where you found each specimen and on what surface it was growing. The most notable substrates will be rock, wood, or just on the ground. Once you have a small collection, look at how each may be different. Flenniken's book has details about successful collecting.

In the north, reindeer and caribou survive by eating lichens. Humans eat lichens, too. Iceland moss, a lichen, is considered a delicacy. Lichens are also used for dyeing materials like wool, used in creating the famous "Harris tweeds," and one species serves as the source of the dye for litmus paper. This paper, when dipped in a liquid, allows people to quickly tell whether that liquid is acidic or basic.

Lichens are important as indicators of air pollution. Many lichens are very sensitive to air pollution and die out in areas of high concentration of sulphur dioxide or heavy metal pollutants. California alone has lost almost half of the crustose lichen species that were observed in the state 100 years ago. Because so few people in West Virginia have collected and identified lichens, we may never know what we have lost already, but we can at least learn what 'species' of lichens are part of the Mountain State's natural heritage.

Reprinted with minor revisions from West Virginia Nongame Wildlife & Natural Heritage NEWS by Dean Walton. Edited by P. J. Harmon

Gary Fleming

Mountain lichen (Dimelaena oriena)

Craig Stihler

Rock tripe (Umbilicaria muhlenbergii)

Brian Streets

Lung lichen (Lobaria pulmonaria)

Craig Stihler

Star reindeer lichen (Cladina stellaris)

DNR photo

British soldier lichen (Cladonia cristatella)

Brian Streets

Shield lichens on quartzitic rock on Panther Knob

Craig Stihler

Cup lichen (Cladonia chlorophaea)

Wild Almanac

Wildlife Diversity Day at the Capitol March 26, 2009

All West Virginians will have the unique opportunity to learn about the rich diversity of West Virginia's native wildlife and plants in the Lower Rotunda of the state capitol on March 26, 2009 during the annual Wildlife Diversity Day. This free event will feature live animals and interactive educational exhibits from the Wildlife Resources Section's Wildlife Diversity Program and from many groups active in managing and conserving West Virginia's wildlife resources. Exhibits will be on display in the lower Capitol Rotunda from 9:00 a.m. until 2:00 p.m.

Legislators, school children and the public will have the unique opportunity to see live eagles, hawks, owls, snakes, fish, butterflies, insects and mammals up close, as well as exhibits on a variety of natural history themes. Invited organizations include The Raptor Rehabilitation Center, Three Rivers Avian Center, The Mountain Institute, Native Plant Society, Oglebay Good Zoo, DuPont Washington Work's Wildlife Habitat Enhancement Committee, Butterflies from Heather, Marshall University's Herpetology Laboratory and the Schrader Environmental Education Center.

State agencies exhibiting include the Division of Forestry, Department of Environmental Protection, Division of Natural Resources Law Enforcement, State Parks and Wildlife Resources sections, West Virginia Wildlife Center, and Department of Agriculture Plant Industries. Federal agencies include National Park Service, U.S. Fish and Wildlife Service, and U.S. Forest Service

The Wildlife Diversity Program conducts research, management and educational programs in the area of nongame wildlife and botanical resources throughout the state. These animals comprise more than 90 percent of all species statewide.

For more information about Wildlife Diversity Day, please contact: Jim Fregonara at the Wildlife Diversity Program, West Virginia Division of Natural Resources, Wildlife Resources Section, P.O. Box 67, Elkins, WV 26241, (304) 637-0245 or jimfregonara@wvdnr.gov.

Jim Fregonara

Live snakes and salamanders attract a crowd.

Jim Fregonara

Student captures a photo of a live bat.

Acreage Added to Sand Hill WMA

An additional 1,020 acres have been added to the Sand Hill Wildlife Management Area, according to West Virginia Division of Natural Resources Director Frank Jezioro. Heirs of the Dennis O'Brien Estate agreed to lease the acreage to the Wood County Parks and Recreation Commission and in turn, through Mountwood Park, lease the property to the DNR so the public can use the additional acreage for hunting and other recreational activities.

"All of the current parties realized that the public would be better served if the land was incorporated into the adjacent Sand Hill Wildlife Management Area," Jezioro said. The original 967 acres were leased from CNG Transmission Corporation in 1997 and have been managed as a wildlife management area since that time.

The Sand Hill Wildlife Management Area is located on either side of U.S. Route 50 approximately 12 miles east of Parkersburg and lies both in Ritchie and Wood counties. Several portions of the WMA share common boundaries with Wood County's Mountwood Park. This new lease increased the size of the area to 1,987 acres, all of which were available for hunting this past fall. Users are reminded that ATVs and permanent tree stands are not permitted on wildlife management areas.

"This property is an important supplement to the West Virginia Division of Natural Resources system of wildlife management areas," Jezioro said.

2008 Spotlight Surveys Show Deer Population Changes in the Eastern Panhandle

The Wildlife Resources Section of the West Virginia Division of Natural Resources conducted annual spotlight-distance surveys during the month of September in several eastern panhandle counties to estimate deer population levels. The surveys this year were expanded to include Hampshire, Berkeley and Pendleton counties. By doing so, wildlife biologists are able to compare results among three different regions of the panhandle. The results show high populations in some areas, and low populations in others.

"These spotlight-distance surveys are conducted to determine relative abundance of deer in these counties," noted District Wildlife Biologist Rich Rogers. "This information, when added to other data sources collected throughout the year, helps to better manage county deer herds."

This year's surveys showed deer densities of 50 deer per square mile in Berkeley County, 80 deer per square mile in eastern Pendleton County, 30 deer per square mile in the Slanesville area of Hampshire County, and 22 deer per square mile between Augusta and Kirby in Hampshire County.

Mark Shock

It appears that reduced antlerless deer harvests in both Berkeley and Pendleton counties have resulted in higher deer densities over the past couple of years. By contrast, increased antlerless deer harvests in Hampshire County have kept densities lower. "I found it interesting that deer densities actually seem to be higher in the Slanesville area of Hampshire County, where we have been intensively collecting deer in the spring for chronic wasting disease (CWD) monitoring," Rogers said. He also said that the deer herd displays a younger age structure and is producing more fawns.

"This is good news and is the first evidence that our Chronic Wasting Disease Response Plan is, at least in part, achieving its goal of maintaining a younger deer population in the area where the disease is found in Hampshire County," noted Rogers. It is thought that younger deer are less prone to spreading the disease, since it takes over a year for most deer to begin shedding infectious material.

Deer densities in surveyed sections of both Berkeley and Pendleton counties are much higher than desired and above their management objectives. It is hoped that with increased antlerless deer harvests, these deer densities will decrease to more appropriate levels, herds will remain healthy, and crop damage will decrease.

Wildlife managers and biologists distributed flyers describing the survey along the routes and talked to as many landowners as possible in the week prior to conducting the survey. "We really don't want to disturb people while conducting the surveys, and if people ask us to leave, we do," said Rogers. He also noted that it was important for people to realize they were only looking and not shooting any deer for survey collections.

The survey involves driving along predetermined routes and spotlighting deer to count by age and sex when possible. Distances to the deer, as well as compass angle, and distance traveled, are noted and submitted for statistical analysis. A computer program then calculates the total area surveyed and the number of deer per square mile that were present. Al Niederberger, Assistant District Wildlife Biologist, noted that the survey provides a conservative estimate of deer abundance. Wildlife biologists also take into account food availability, time of year, and other factors that may affect their interpretation of the results obtained.

Beyond the Backyard Program Purchases New Scoring System for the DNR Archery in the Schools Program

Beyond the Backyard, a Bobby Warner Charitable Youth Foundation based in Charleston, recently made a $1,500 donation to the Division of Natural Resources (DNR) to purchase a state-of-the-art scoring system for the DNR Archery in the Schools (AIS) Program.

"This generous donation will allow our AIS Program to run a highly efficient State Tournament in March 2009," said Curtis Taylor, Chief of the DNR Wildlife Resources Section. "Through this donation, our state will be using the same scoring system the National Archery in the Schools Program (NASP) uses at the National Tournament in Louisville, Kentucky."

West Virginia's AIS Program (www.wvdnr.gov/archery) teaches Olympic-style target archery in participating grade 4 – 12 public and private school physical education classes. The AIS Program has grown at a phenomenal rate in West Virginia, going from just 19 schools in 2004 to more than 150 participating schools in 2008. In four short years, it is estimated that more than 30,000 West Virginia students have experienced archery through the AIS Program.

The DNR has hosted a state tournament the past three years. This tournament has grown from 280 archers the first year to more than 500 participants this past spring. Due to the phenomenal rate of growth of the state tournaments, it has become logistically impossible to continue the current tournament scoring process.

"The new scoring system will undoubtedly expedite and improve the scoring process – leading to a flawless, thoroughly enjoyable event for hundreds of state youth each year," said Taylor. "We know that with this generous financial assistance, the quality of our state tournament will match both the enthusiasm of our participants and the fantastic growth of the program. We welcome Beyond the Backyard's financial assistance, which will help the DNR touch the lives of many West Virginia school children, and potential future sportsmen and sportswomen for years to come."

Beyond the Backyard is West Virginia's first and only outdoor youth organization dedicated to both children and parents. For more information, visit online www.beyondthebackyard.org or call 1-866-WV-WOODS; e-mail cwalls@beyondthebackyard.org.

Beury Mountain WMA Extended

The **West Virginia State Chapter of the National Wild Turkey Federation** has donated $20,000 towards the purchase of a 4,586-acre tract of land extending Beury Mountain Wildlife Management Area in Fayette County, according to Curtis I. Taylor, Division of Natural Resources Wildlife Resources Section Chief.

Beury Mountain WMA is now 7,647 acres of prime hunting land for wild turkey, white-tailed deer, squirrel and other small game species. Partial funding for this acquisition came through the West Virginia National Wild Turkey Federation's Hunting Heritage State Super Fund Project.

Projects are now underway by the Wildlife Resources Section to improve hunter success for harvesting deer and developing habitat for upland game birds. "This area has an excellent potential to provide West Virginia and out-of-state hunters tremendous hunting opportunity for wild turkey, deer, bear, squirrel, ruffed grouse, woodcock and other species," Taylor said.

Calendar of Events

MARCH

16 Regulation Public Meetings
Fairmont, Lewisburg, Milton, Martinsburg, North Bend State Park, and Summersville
Talk informally to biologists about proposed hunting and fishing regulations.

17 Regulation Public Meetings
Buckhannon, Glen Dale, Logan, Moorefield, Parkersburg, and Twin Falls State Park
Talk informally to biologists about proposed hunting and fishing regulations.

26 Wildlife Diversity Day at the Capitol
Capitol Building, Charleston
Interactive displays and live animals. From 9 a.m. - 2 p.m. Call (304) 637-0245 for more information.

APRIL

17-19 BOW Weekend
Pipestem State Park
Full weekend of Becoming an Outdoors-Woman activities. Thirty different classes to choose from. Contact Billie Shearer, 304-558-2771, billieshearer@wvdnr.gov or visit www.wvdnr.gov/hunting/bow.shtm.

MAY

7-10 48th Annual Wildflower Pilgrimage
Blackwater Falls State Park
Activities include bird walks, wildflower tours, nature programs, bird identification workshops, craft exhibits. Call (304) 558-2754 for more information.

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Chick flicks

Bird watching opportunities in West Virginia State Parks

White-breasted nuthatch—Pipestem Resort State Park

Inset photo: Blackwater Falls State Park

Birding Events

Pipestem Resort State Park
304-466-1800 ext 344
Eagle Survey: March 14
Migration Bird Count: May 9
Weekly bird walks scheduled

Prickett's Fort State Park
304-363-3030
Annual Spring Bird Walks:
April 18, 25 and May 2

Kanawha State Forest
304-558-3500
Osbra Eye Spring Walks: April 25

Blackwater Falls State Park
304-259-5216
Wildflower Pilgrimage*: May 7-9

Canaan Valley Resort State Park
304-866-4121
Southern Boreal Bird Festival*:
June 5-7

Cacapon Resort State Park
304-258-1022
Redbud Weekend: April 17-19

* registration required

Flock to West Virginia State Parks for outdoor fun.
Call or go online for a 2009 Calendar of Events.

West Virginia
State Parks and Forests
www.wvstateparks.com 1-800-CALL WVA

West Virginia
Wildlife