The Gnatcatcher

Newsletter of Juniata Valley Audubon

Vol. XLV, No. 1 — January / February 2013

Jacks Mountain threatened by industrial wind development

BY LAURA JACKSON

It's a beautiful fall day — bright blue October sky, colorful trees, warming breeze. My husband, Mike, and I have most of the day to explore central Pennsylvania. We plan to visit a hawkwatch on Jacks Mountain, in Mifflin County. Appropriately enough, the hawkwatch is called Jacks Mountain Hawkwatch. Ron Singer, the main counter and coordinator, has assured us that it is easy to find and that he will be there to meet us, all the while counting migrating raptors. Since we're driving from Bedford County, we head northeast into the middle of Pennsylvania's Ridge and Valley Region. We see the most southern slopes of Jacks Mountain when we get to Three Springs, in Huntingdon County. From there we head north to Jacks Narrows, a water gap formed by the Juniata River, bisecting Jacks Mountain and forming an important east-to-west pathway for early settlers, before today's railroads and highways were built. The towns of Mapleton and Mount Union were settled at the western and eastern ends of the water gap, respectively. These towns have an industrial heritage, thanks in part to the treasures on the slopes of Jacks Narrows.

The treasures on Jacks Mountain were the hard ganister sandstone highly prized for brick making in the early 1900s. A narrow-gauge railway was used to haul the rock down the steep mountainside near Mount Union. Quarry workers did not ride the railcars to work, but actually constructed a stone stairway up the mountain to shorten the long ascent to the quarry.

Thousands of people were employed in the ganister industry in the early 1900s, but it was short-lived and ended in the early 1950s. The stone stairway is now a popular hiking trail called "The Thousand Steps." It actually has more than 1000 steps made of the hard sandstone carved from the mountain. Now, hikers climb the steps to enjoy the view, while Allegheny woodrats (*Neotoma magister*), instead of quarry workers, scramble over the extensive rock outcroppings. This part of Jacks Mountain has been designated as an Important Mammal Area, since the area provides ideal habitat for the Pennsylvania threatened woodrats.

As we drive northeast along the base of the mountain, we can see why the Western Pennsylvania Conservancy stated, "The length of Jacks Mountain in Mifflin County is one of the largest blocks of contiguous forest in the county." Mile after mile of forested slopes rise to our west, interspersed with many south-facing talus slopes — jumbles of rock that create an excellent habitat for the timber rattlesnake (*Crotalus horridus*). Since there are many sightings of timber rattlesnakes on Jacks Mountain, it is important that the habitat be protected from development. Unfortunately, very little research has been done to document the populations and to identify den sites. Timber rattlesnakes are currently listed as a candidate species by the Pennsylvania Fish and Boat Commission, which means they could be listed as threatened or endangered in the future.

Just south of McVeytown, we turn west onto Jacks Mountain Road. This winding road crests the summit and then heads down the mountain toward Belleville, a small town in Kishacoquillas Valley (locally known as "Big Valley"). There are

[*Continued on page 3*]

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as a benefit for members of the…

JUNIATA VALLEY AUDUBON SOCIETY

Charlie Hoyer, Editor
P.O. Box 42
Tyrone, PA 16686-0042

The Juniata Valley Audubon Society (JVAS) is a chapter of the National Audubon Society and is dedicated to the conservation and restoration of natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the Earth's biological diversity. Juniata Valley Audubon accomplishes its mission through advocacy, science, land stewardship, and education — working directly with Audubon Pennsylvania, the Pennsylvania state office of the National Audubon Society.

The JVAS is a tax-exempt, not-for-profit, educational organization as described in section 501(c)(3) of the Internal Revenue Code. Gifts are deductible for income tax purposes (Tax ID # 25-1533496).

Message from the Conservation Committee Chair

Let wind credit expire…

The U.S. House and Senate should not extend the wind production tax credit (PTC) that has subsidized the wind industry since 1992. This tax expenditure was due to expire at the end of this year, and it should be allowed to do so, permanently.

Renewing the PTC would cost billions of dollars that our nation simply cannot afford.

It has been evident for years that government support for wind energy development is very costly and has failed to establish industrial-scale wind as a self-sustaining contributor to meeting our energy needs. After more than three decades of government subsidy, the wind industry cannot support itself, does not make a significant contribution to meeting our energy needs, and has no realistic prospects for doing so in the foreseeable future.

Since the PTC was first introduced in 1992, the government has provided $40 billion to the wind energy industry in tax credits and cash grants with these costs dramatically increasing in recent years. In the last year alone, nearly $5 billion has been distributed. There is no plausible justification for continuing this spending, and certainly not when the nation is facing the huge debt and deficits prevailing today.

— Stan Kotala

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… Jacks Mountain [*Cont'd from cover page*]

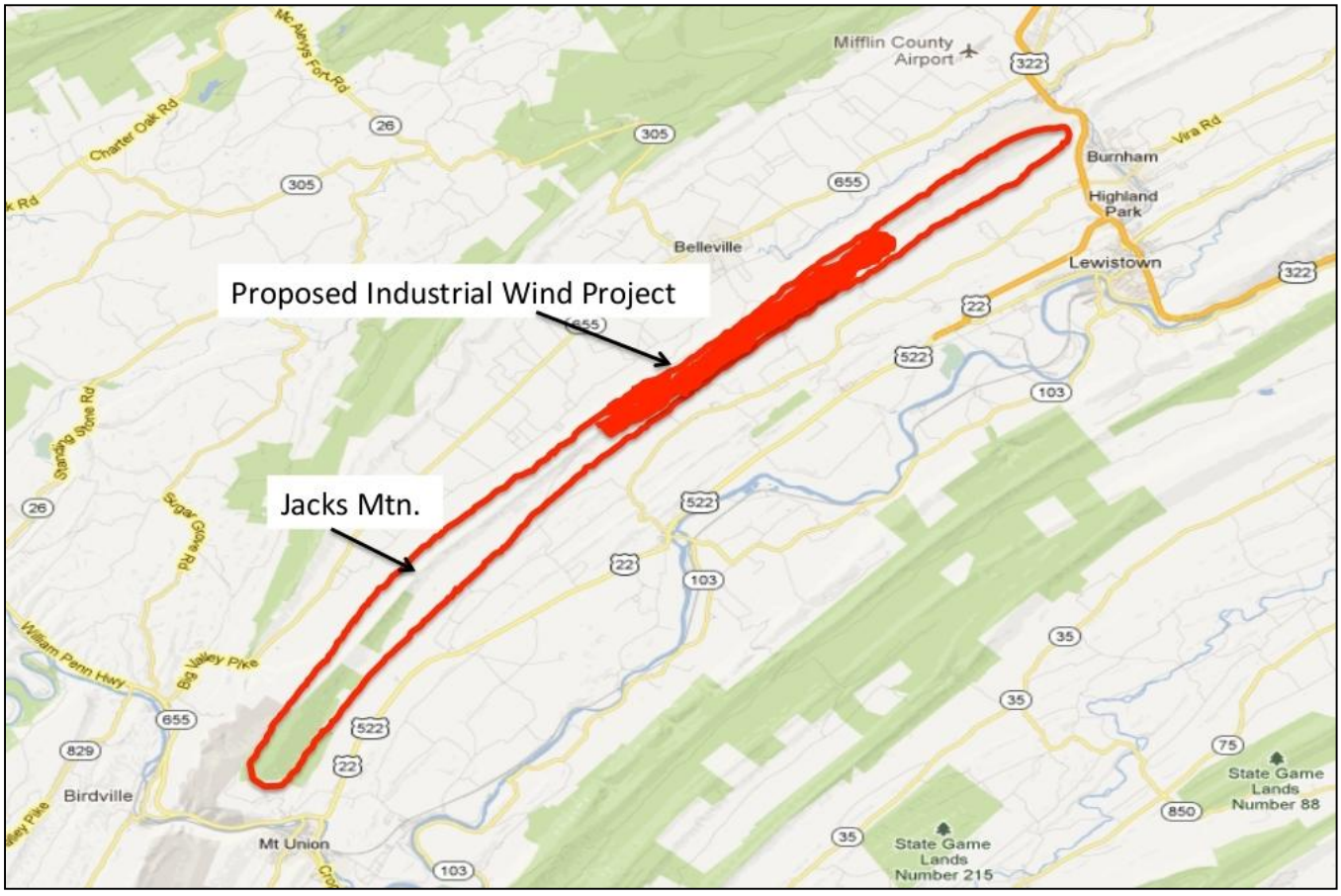
two parking lots on top, one with a large shrine with a cross. What spectacular views! We park facing west, and find Ron right behind the shrine, counting raptors. Unfortunately, it wasn't a good day for raptor migration — very little wind but we have a lot to discuss. It isn't good news, either.

Volkswind, a German company with a subsidiary located in Portland, Oregon, has approached landowners on Jacks Mountain to lease land for an installation of thirty-seven wind turbines that would run along the crest of Jacks Mountain in Menno, Union, Brown, Oliver, and Granville Townships in Mifflin County. Company executives gave a presentation to the Mifflin County Planning Commission in February 2011, where they outlined their proposal. According to the Mifflin County Planning Commission's annual report for 2011, Volkswind is in the process of signing leases with property owners on Jacks Mountain. They hope to install 2.5-megawatt turbines that would span eight miles along the top of Jacks Mountain, running north from Jacks Mountain Road.

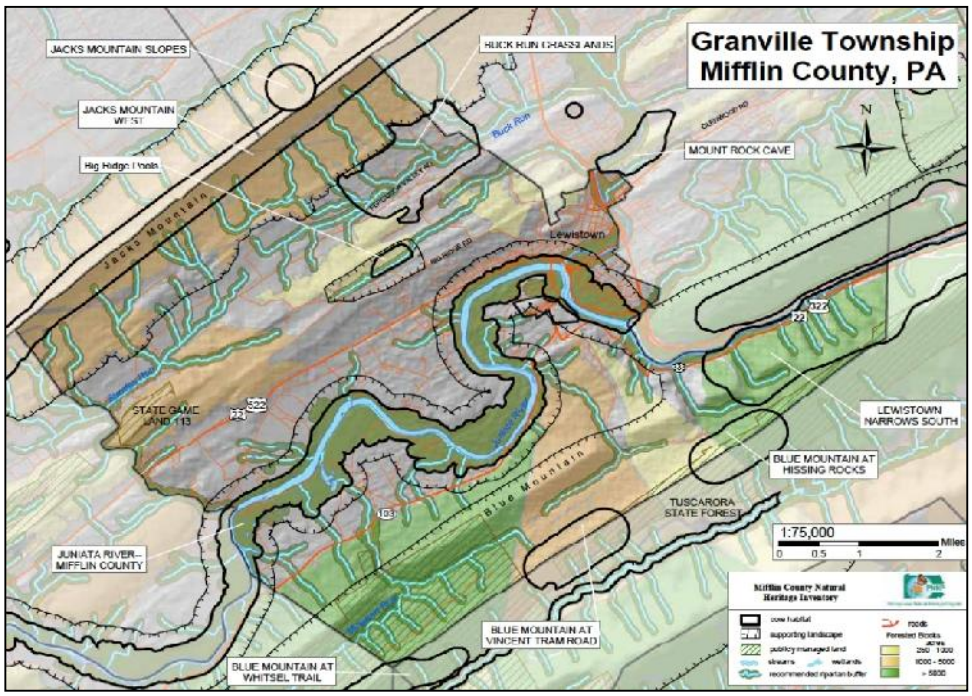
Even though Pennsylvania has only mediocre wind resources, our forested mountains are attractive for wind development because there are numerous roads and power lines that cross the slopes. Industrial wind projects must be located adjacent to both. Furthermore, industrial wind developers can get a better price for electricity generation in the eastern United States than in other areas of the country, so the lack of consistent winds doesn't pose a big problem — especially if federal subsidies and state alternative energy mandates are available to prop up the wind market.

Because Jacks Mountain is very narrow on top, the industrial wind project would begin as a cut-and-fill project to bulldoze and blast the top of Jacks Mountain in order to construct a flat bench that is wide enough to support a crane with a thirty-foot track width. This bench also will support the thirty-seven turbines, almost 500 feet tall.

The turbines' rotating blades pose a direct



threat to migrating raptors, songbirds, and bats, since the blades cover over an acre of migratory airspace. On the ground, the construction of the bench and road to connect the turbines poses a direct threat to the timber rattlesnakes and other wildlife species that depend on the talus slopes and forested habitat.



Jacks Mountain is designated as a **Mifflin County Natural Heritage Site of Notable Significance** because it is a large core forest and one of the largest continuous blocks of forested land in the central part of Mifflin County. An industrial wind project that alters the top of Jacks Mountain, with its roads, transmission lines, accessory buildings, and wind turbines will destroy the core forest so important to the biodiversity of Mifflin County.

A portion of Jacks Mountain in Brown Township, part of the proposed wind project, also is part of the Central Mountains Important Mammal Area (IMA). The Jacks Mountain Slopes overlook the Kishacoquillas Creek. Nests of a globally secure, state vulnerable species of concern were located at this forested site in 2002. How will an industrial wind project on the mountain affect this protected species? Volkswind has not conducted any field surveys, so no wildlife studies have been initiated.

Research at the Mifflin County Courthouse in October 2012 showed that fourteen landowners have signed leases with Volkswind. One landowner lives in Lancaster County, but most are farmers who live in the valleys on either side of Jacks Mountain. Jacks Mountain Hunting Club also signed a lease with Volkswind.

The leased land for the wind project starts at Jacks Mountain Road (and probably includes the Jacks Mountain Hawkwatch) and runs north for about six miles. Not all the leased parcels are contiguous. It's very fortunate that a landowner has protected more than 140 acres of land on Jacks Mountain in Granville and Union Townships in a perpetual conservation easement with the Western Pennsylvania Conservancy in 2009. The express purpose of the conservation easement is to protect the resident timber rattlesnakes found on the rocky talus slopes, safeguard the quality of the water resources, and to promote biological diversity of the forest — no wind turbines will be constructed on this part of Jacks Mountain. It's hoped that this large block of forest, including significant acreage along the top of Jacks Mountain, will effectively block industrial wind development plans by Volkswind, since the easement creates a significant gap in the eight-mile span designated for the wind project.

On the other hand, rumors are circulating that a different wind company is contacting Jacks Mountain landowners in southern Mifflin County. E.ON Climate & Renewables, another German company, contacted landowners in Huntingdon County in 2010, hoping to develop industrial wind projects on Shade Mountain and Tuscarora Mountain — about forty turbines were proposed for each site. Many local residents opposed those plans, and little progress has been made since then.

Is the same company interested in a project on Jacks Mountain? Details on this proposal will be shared in the next issue of *The Gnatcatcher*. ❖

Heller Cave springtail one step closer to Endangered Species protection

The U.S. Fish and Wildlife Service has announced an initial positive response regarding a petition from the Juniata Valley Audubon Society to protect the Heller Cave springtail, a tiny cave creature found only in a Catharine Township, Blair County, Pennsylvania cave system recently threatened by a proposed limestone quarry. The Center for Biological Diversity and the JVAS sought the springtail's protection under the federal Endangered Species Act in a petition filed in October 2011.

"The Heller Cave springtail will disappear forever if its only home on the planet is destroyed," said Mollie Matteson, a conservation advocate for the Center for Biological Diversity. "Today's decision is a hopeful sign that this little biological marvel will remain a part of Pennsylvania's natural heritage into the future."

In 2010, the Pennsylvania Department of Environmental Protection issued a permit to Gulf Trading and Transport for a proposed quarry adjacent to the Lower Trail and the Frankstown Branch of the Juniata River. However, the DEP failed to require adherence to a "total avoidance area" around the caves to protect the eastern small-footed bat, as stipulated by the Pennsylvania Game Commission, which has listed the bat as a threatened species. The bat, which hibernates in the Heller Cave complex, has declined dramatically in recent years due to the rapidly spreading bat disease known as white-nose syndrome, making protection of surviving populations even more critical. The Heller Caves area also is home to the threatened Allegheny woodrat and the northern long-eared bat, a species of special concern.

The Heller Cave springtail, which was discovered by biologists more than a decade ago, has no special status under Pennsylvania law and was not included in the Commission's requirements for protection of state-listed species at the quarry site.

Last year the JVAS and the Center for Biological Diversity succeeded in halting the quarry through a settlement agreement with Gulf Trading and Transport and the DEP.

"Even tiny life forms like the Heller Cave springtail deserve a place to live," said Matteson. "And our descendants deserve a world as rich in biological diversity as the one we inherited. Creatures large and small are all a part of that."

The springtail belongs to a group of arthropods that live in various underground environments. This particular species is a little over an eighth of an inch in length; like other springtails, it is able to jump distances many times its body length. Cave-dwelling springtails are highly dependent on the stable temperatures and high humidity found in caves, and the Heller Cave springtail likely would not survive long if exposed to outside surface conditions. Among other springtails of its kind, the Heller Cave springtail is a geographic outlier; no other similar springtail species is found as far north and east in North America.

The Fish and Wildlife Service will now conduct an in-depth status review of the springtail and decide whether or the species warrants listing under the Endangered Species Act.❖

Audubon Christmas Bird Count tally

Steven Bonta, the compiler for the JVAS Christmas Bird Count held on Saturday, December 15, 2012, has reported the following tally by species. The JVAS has an assigned area for the bird count — within a 7½-mile radius circle centered on the village of Culp, in Sinking Valley.

Mallard	188
Wood duck	2
American wigeon	2
Hooded merganser	50
Ruddy duck	6
Bufflehead	7
Green-winged teal	1
Lesser scaup	1
Great blue heron	3
Bald eagle	1
Red-tailed hawk	24
Northern harrier	2
Cooper's hawk	3
Sharp-shinned hawk	2
Merlin	1
American kestrel	12
Common snipe	1
Killdeer	2
Ruffed grouse	1
Ring-necked pheasant	8
Belted kingfisher	7

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JVAS Programs — January and February

JVAS programs are presented on the third Tuesday of the month except for July, August, and December. Unless otherwise specified, program meetings begin at 7 P.M. in the meeting room of the Bellwood-Antis Public Library, 526 Main St., Bellwood.

Directions: Take Interstate Rt. 99 to the Bellwood/Route 865 Exit (Exit 41). Follow Rt. 865 through the Sheetz/Martin intersection. Proceed about four blocks and turn right at the **BUSINESS DISTRICT** → sign. Turn left at the dead end and travel to the stop sign. Continue a short distance; the library will be on your right.

JVAS programs, designed for a general audience, are free and open to the public.

Members' Night

TUESDAY, JANUARY 15

All JVAS members are encouraged to bring any nature-related items that they wish to share: music, photographs, video, poetry, artwork, etc. This is an opportunity to share your adventures and/or discoveries in the outdoors — whether it is a trip to an exotic island or a cool collection of rocks from central Pennsylvania. Please contact Vice President Laura Jackson at mljackson2@embarqmail.com to let her know what you plan to contribute to the program. Slide shows should not last longer than 10 minutes.

"Voyage of Sustainability: Around America's Great Loop In a Solar-Powered Boat"

TUESDAY, FEBRUARY 19

This presentation is a photographic trip report of an epic journey by solar-powered boat. Marrying 19th century and 21st century technologies, a State College couple, Bill Carlson and Cynthia Berger, equipped a canal boat with a solar propulsion system for a 6000-mile trip around America's Great Loop. The Great Loop is the circumnavigation of eastern North America, a continuous waterway connecting inland lakes and rivers with the Atlantic Intracoastal Waterway and the Great Lakes.

The intrepid couple set out with just a week's power-boating experience between them, navigating wind and waves on the Great Lakes, the mighty Mississippi, a Gulf of Mexico crossing, and more. Bill and Cynthia's far-ranging presentation will cover the state of sustainable technologies in America today, water quality and endangered species issues, canal lore, and boating trivia — with some bird photos for good measure.❖

JVAS Field Trips — January and February

JVAS field trips are coordinated by board member Deb Tencer. For more information about any field trip, phone Deb at 932-9183 or send her an e-mail at naturehikergal@gmail.com.

Winter hiking and camping at Thickhead Wild Area

SATURDAY & SUNDAY, JANUARY 12–13

We'll do a short hike into Thickhead Wild Area and then stay overnight to practice camping skills in cold weather and potentially snowy conditions. Additional activities, such as other short hikes or snowshoeing to explore the area, will be weather-dependent. This field trip is a joint outing with the Moshannon Group of the Sierra Club. Meet at Alan Seeger Natural Area at noon on Saturday. RSVP for this outing by January 9 to Helena Kotala, hdkotala@gmail.com, 880-0918.

Groundhog Day snowshoe hike in Blue Knob State Park

SATURDAY, FEBRUARY 2

Meet at noon at Chappells Field for a 2-hour hike along forest trails. If there's not enough snow, it will become a regular winter hike. Trip leader Dave Hunter, davmhunter@aol.com, 317-7971.❖

On the trail of the black-legged tick

BY MARCIA BONTA

Last January, I walked along the Black Gum Trail. Since our son, Dave, constructed the trail halfway up Laurel Ridge, back in the 1990s, I had never been able to take the trail in winter. Usually, it was deep in ice and snow as was our north-facing hollow road. But on that mild day there was not a smidgen of ice or snow on the trail or road.

I neither saw nor heard any creature despite the warm day. The long-promised sun was trying to shine through a matrix of puffy, white clouds drifting past patches of blue sky. At dawn it had been 34 degrees and breezy, and the thermometer had been slowly rising all morning.

Then, as I descended the trail, I glanced down at my pants and socks and pulled off seven adult black-legged ticks. I could hardly believe it. I had considered winter to be tick-free on our mountain. Usually, they spend their winters buried under leaf litter that should be covered with snow. But they are tough creatures, and as soon as it warms up they are out and about. At that time the adult females are not carrying Lyme disease because they had had their last blood feeding on white-tailed deer. Some even winter on the deer.

But, as Dr. Richard S. Ostfeld of the Cary Institute of Ecosystem Studies in Millbrook, New York says, don't blame deer if you get Lyme disease. The immune system of deer kills the bacteria that cause the disease.

"We don't know why," Ostfeld says, "but the deer immune system clears the infection. When they get bit, they wipe out Lyme. Deer play a tremendous role in suppressing adult ticks from spreading the bacteria." He also dislikes the name "deer tick" and prefers "black-legged tick."

After all, like any arachnid to which ticks are closely related, the nymphs and adult ticks have eight black legs. But the larvae only have six. The larvae hatch from the several hundred to a few thousand eggs each female adult tick lays in spring. She then dies. Both the larvae the first summer and the nymphs the second summer feed once on a mammal and prefer white-footed mice, although they will feed on other small mammals or birds if they can't find a mouse.

And it is white-footed mice that are the real culprits. They can get the Lyme disease bacteria and pass it on to the ticks even though the bacteria don't seem to sicken them. Because nymphs are so small, no larger than a poppy seed, they are liable to bite and never be detected during the three to four days they need to take their blood meal. At least 70% of Lyme disease cases are from those nymphs that do not look like the black and reddish-brown adult female ticks. Instead, they have dark heads and bodies that appear to be translucent. Adult male ticks, which don't feed but will attach to a host when searching for a female to mate with in the fall, are either black or dark brown.

Entomologist Thomas Say named the black-legged tick — *Ixodes scapularis* — back in 1821. But the first known case of Lyme disease wasn't identified until 1975 when several children in Lyme, Connecticut were diagnosed with juvenile rheumatoid arthritis. It turned out to be what later was named Lyme disease. In 1982, scientist Willy Burgdorfer isolated the bacterium causing the disease, and it was named in his honor: *Borrelia burgdorferi*.

Scientists also thought that a new species of tick carried the disease and named it *Ixodes dammini*. It was only later in the 1990s that they realized the tick transmitting the disease had been around and named long ago. But they did recognize that the tick belonged to the family *Ixodidae*, the so-called hard ticks. They have a hardened plate called a scutum on their idiosoma region, which is a specialized part of a tick's body that expands to hold its blood meal.

Like ticks everywhere, the nymphs and adults climb a shrub or blade of grass, hold out their forelimbs, and wait for a victim to brush past. They also lurk on fallen logs, tree trunks, or even on the ground, especially the nymphs which can't

climb as high as the adults. Since they arrived on our mountain, about six years ago, I no longer have the pleasure of sitting on my hot seat on the ground, my back against a tree, watching the life of the forest. They even reach me on our benches unless I pull my feet up onto them.

Ticks have a Haller's organ on each foreleg with spiny indentation packed with sensors and nerves capable of picking up a breath of carbon dioxide, heat, sweat, or even vibrations from your footsteps. So no bird or mammal can escape their sudden lunge. As I've discovered, the small huckleberry shrubs on Laurel Ridge Trail and the grasses of First and Far Fields, are ideal "questing" posts for ticks, as well as the underbrush in our forest off the trails where I rarely venture anymore.

Once a tick arrives on its host, it probes around for a soft, bloody site to attack, often in private crevices. Normally, you won't feel a thing. As David George Haskell writes in *The Forest Unseen*, "I suspect they charm our nerve endings, taming the cobra-like neurons with the hypnotic music of their feet."

The tick presses its mouthparts into your flesh and saws an opening. Then they lower a barbed tube, called the hypostome, to draw out blood. Because it takes several days to get a full blood meal, it cements itself to your skin with a glue-like material called "attachment cement," which is why a tick is so difficult to remove.

During the first 24 hours it is attached, it is harmless. But later, when it is full, it takes water from your blood into its gut and spits it back into you, which is when it can transmit Lyme disease or two other diseases: babesiosis and anaplasmosis. The parasite *Theileria microti* causes babesiosis, and *Anaplasma phagocytophiolum* causes anaplasmosis. As many as 2 to 12% of Lyme disease patients will have anaplasmosis and 2 to 40% babesiosis. This complicates the diagnosis and treatment sometimes because the tick might transmit one or the other or both diseases and not Lyme to a patient. In rural New Jersey, for instance, the Center for Disease Control studied 100 black-legged ticks and discovered that 55 of them had at least one of the three pathogens.

White-tailed deer in Plummer's Hollow (Photo by Dave Bonta)

Both babesiosis and anaplasmosis have flu-like symptoms similar to those of Lyme disease but without the telltale bull's-eye rash. Some folks don't recognize or even have symptoms of babesiosis, yet they can pass it on to others through donated blood. So far, Pennsylvania seems to be almost free of those two diseases, but they are more prevalent in New York and New Jersey. Unfortunately, it is probably only a matter of time until these diseases increase in the Commonwealth.

Last year was supposed to be especially high in Lyme disease cases. That was because in 2010 there was a bumper crop of acorns, followed by 2011 when there were practically none. Dr. Ostfeld, forest ecologist Dr. Charles D. Canham, and colleagues at the Cary Institute first worked out the connection between the amount of acorns and the population size of white-footed mice. In abundant acorn years mice numbers soar but they crash when the acorn crop fails. According to Ostfeld, that leaves a large number of infected ticks looking for hosts. Without the mice, they are after us instead.

At least one hunter friend of ours contracted Lyme disease last June. Although he did get the rash, he never saw the tick. I suspect it was a nymph that bit him. He also listed four places where he could have picked up the tick — turkey-hunting at our place, at a friend's country property, on his own country property, or in his backyard at the edge of Altoona.

If Ostfeld's research is right, his backyard was the most likely habitat. In a paper for *Conservation Biology*, Ostfeld and other colleagues titled "Effect of Forest Fragmentation on Lyme Disease Risk," they wrote, "Our results suggest that efforts to reduce the risk of Lyme disease should be directed toward decreasing fragmentation of the deciduous forests of the northeastern United States into small patches…. The creation of forest fragments of 1–2 hectares should especially be avoided, given that these patches are particularly prone to high densities of white-footed mice, low diversity of vertebrate hosts, and thus higher densities of infected nymphal black-legged ticks." Given both the size of our forest and the diversity of vertebrate species, we should have less Lyme disease here.

On the other hand, another study by Tom Worthley and other researchers at the University of Connecticut Forest in Storrs claims that eliminating the invasive Japanese barberry shrubs (*Berberis thunbergii*) will help control the spread of Lyme disease, anaplasmosis, and babesiosis because white-footed mice favor the barberry's habitat.

"When we measure the presence of ticks carrying the Lyme spirochete, we find 120 infected ticks where barberry is not contained, 40 ticks per acre where barberry is contained, and only 10 ticks where there is no barberry," Worthley says.

Unfortunately, our neighbor's old 100-acre property that we were able to purchase only after it was poorly logged, is filled with Japanese barberry and other invasives. It's also moved into the edges of our fields and even into the edge of portions of our older forest. Eliminating all of these bushes will take many manpower hours. But our caretaker hopes to experiment with a few of his own ideas for removing them over the next several years.

In the meantime, I'll continue to follow most of the suggestions for avoiding tick bites, including super vigilance of my clothes and body, even in winter, when I take my daily walks.❖

… CBC tally [*Cont'd from page 5*]

Great horned owl	3
Eastern screech-owl	2
Pileated woodpecker	10
Northern flicker	1
Hairy woodpecker	8
Downy woodpecker	31
Red-bellied woodpecker	22
Rock pigeon	300
Mourning dove	80
Common raven	13
Common crow	92
Blue jay	26
White-breasted nuthatch	34
Red-breasted nuthatch	2
Golden-crowned kinglet	12
Brown creeper	1
Black-capped chickadee	70
Tufted titmouse	44
Eastern phoebe	1
Northern mockingbird	2
Eastern bluebird	7
American robin	1
Common starling	325
Winter wren	1
Carolina wren	20
House sparrow	52
Northern cardinal	33
Red-winged blackbird	50
American goldfinch	40
Red crossbill	1
House finch	63
Song sparrow	20
White-throated sparrow	22
White-crowned sparrow	1
Fox sparrow	1
Dark-eyed junco	118
Tree sparrow	12

Juniata Valley Audubon
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