Mountain Rescue | Maple Sugaring | Buffalo River

NEW YORK STATE

# Conservationist

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## Magical Light

NEW YORK STATE
# Conservationist

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Andrew M. Cuomo, Governor of New York State

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Dear Reader,

As readers of the *Conservationist* know, the talented and dedicated staff of our agency are working day in and day out to protect our natural resources and provide opportunities for all residents and visitors to safely enjoy them. In the last year, we have accomplished many significant milestones, from protecting vast new acres in the Adirondacks, Catskills and throughout the state, to rapidly responding to threats to water and air quality. Our Forest Rangers and Environmental Conservation Officers have also been busy, including undertaking a daring winter rescue on Algonquin Peak, which is detailed in this issue.

To celebrate the work of our employees, we have started a new video series entitled "On The Frontlines," which you can find on our website and social media pages. This series provides a personal look into our staff and the passions that fuel their work for our agency. In addition, you will see that we are also featuring our staff more on the pages of the *Conservationist*, like this month's feature on Beth Roessler from DEC's Hudson River Estuary Program. I hope you will enjoy learning more about the people who are responsible for conserving our land, air and water.

This year, the Governor is bolstering the efforts of our staff by dedicating new resources to advance environmental projects. As part of his recently proposed budget, the Governor has prioritized an historic commitment of $2 billion to the Clean Water Infrastructure Act, which is providing much needed funding to upgrade drinking water and wastewater infrastructure, and advance source water protection initiatives. The Governor has also proposed funding the Environmental Protection Fund at the all-time high of $300 million. This funding provides important resources to protect and steward open space and improve water quality, and also supports projects like DEC's Trees for Tribs program, which is featured in this edition.

In addition, the Governor has proposed increased funding through the NY Works program to launch our "Adventure NY" initiative to improve access to State lands, rehabilitate campgrounds, and upgrade DEC's recreational facilities. You'll hear more about this initiative in the coming months, but our goal is to inspire more New Yorkers like you to take advantage of the amazing opportunities available to explore the great outdoors on DEC lands and waters throughout the state.

It's truly an exciting time for the environment in New York State, and I hope you enjoy reading about our ongoing efforts to protect and restore our natural resources.

All the best,
Basil Seggos, Commissioner

NEW YORK STATE | Department of Environmental Conservation

Photo taken by Professional climbing guide Colin Lohr

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**Conservationist for Kids!**

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Ranger Ben Baldwin fights his way through hip-deep snow while searching on Algonquin Peak.

# Mountain Rescue

By Forest Ranger Scott VanLaer
Photos by professional climbing guide Colin Loher

***Editor's note:*** *On December 11, 2016, two young hikers checked in at Adirondack Loj in North Elba, advising others of their plans to ascend Algonquin Peak and return the same day. Although they had some winter hiking experience, the two nearly lost their lives when fog shrouded the mountain peak later that day, rendering visibility to nearly zero. After reaching the summit, the hikers were unable to find their way back down the mountain. They became disoriented, and stumbled into very deep snow, falling into a spruce hole. With only one pair of snowshoes between them, they were unable to make their way out. They had working cell phones but no service; they couldn't call for help or let others know their precise location. They huddled together for warmth in a hollowed-out snow cave of sorts, and gradually their focus became one of sheer survival. This is the story of their rescue, told by one of the first rescuers on scene.*

Hope, optimism and anxiety were the mixed emotions felt by all the searchers looking for Madison Popolizio and Blake Alois on Algonquin Peak the morning of December 13, 2016. Having planned for a day hike on the state's second highest peak, the young couple had now spent two unplanned nights somewhere in the wilderness. We had hope, because photos they posted to social media showed they had appropriate gear. We were optimistic, because the temperature had been mild for Algonquin, above zero each night. If they found some protection from the wind, we knew they could still be alive. Our unease lay in the fact that few believed they would survive a third night, as forecasted temperatures were -30º F.

For two restless days and nights, searchers combed the summit area and steep drainages where lost hikers often end up, without success. Algonquin had been gripped in a summit-covering fog continuously since the search began. Helicopters could not fly over the search area, visibility for ground crews in the alpine zone was limited to 30 feet, and winds were louder than human voices. The probability of detecting the hikers in these conditions was low. I had searched the summit area on the 11th, the first night the hikers were reported overdue. When I reached the summit, all tracks in the snow had been erased. I even struggled to safely find my way off the summit. My own tracks had been blown away.

Poor conditions made it hazardous for the State Police helicopter (barely visible above the horizon, mid picture) to reach the lost hikers.

About 20 hours after descending the peak that first night, I began hiking up again, before dawn. Two of the four search crews swept opposite sides of the summit. The New York State Police helicopter (a Huey from State Police Aviation out of Albany) was on standby, awaiting any break in the clouds to restart a search, and also to ferry more searchers to the summit. Using the helicopter would save time and energy, as the hike to our search area alone took more than three hours. Those flights never materialized. My crew, comprised of rangers and professional climbing guides, arrived on the north side of the summit before 10 AM and formed a grid pattern. We began systematically sweeping the east side of the summit cone, with searchers spread about 50 feet apart in a line. The summit was still blanketed in fog. Light snow battered our faces, aided by 20 MPH winds. At times I could not see the crew member to my side.

Our search pattern put us several hundred feet down from the summit, where no trees grow, and also into the subalpine zone, where stunted and deformed trees persist. Here, in what we call krummholz, it is extremely difficult to navigate in winter. Snow is continually blown off the summit, and collects around and covers the dwarfed trees. At times, you may be walking on six feet of unconsolidated snow, sinking down a foot or more with each step, even while wearing extra-large snowshoes for additional loft. Periodically you step on an air pocket and plunge four feet or more into the snow. We call these "spruce traps." It can take several minutes, a lot of energy, and at times, the assistance of another person to escape from one of these traps. As we struggled through these rough conditions, we paused every minute and yelled out the names of the stranded hikers, blew a whistle, then paused in unison, hoping to hear a response.

We maintained this methodical formation for about an hour, until we heard a helicopter in the distance. The sound of its rotors was steady and unmistakable. We even saw it for a moment, as the summit fog cleared for an instant before rolling back in. The lower valleys had cleared enough for the helicopter to fly through, and it was now dropping off additional searchers at Lake Colden.

We were not the only ones who heard the helicopter. Suddenly, a woman's voice pierced through the fog yelling for the helicopter. Professional guide Don Mellor and I shot quick glances at each other, checking to see if we imagined it. We had not. We yelled back. The response was louder this time with tones of joy and elation from two voices now. Don and I both pointed in the same direction. We could not see the subjects, but we knew they

Searchers had to negotiate tough terrain, including krummholz (area of stunted trees near the timberline) close to the top of Algonquin Peak.

were close.

Don quickly moved downhill towards the sound of their voices, yelling out several more times to make sure he was going in the right direction. I advised on the radio that we had voice contact. Less than a minute later, Don yelled up to me, "I can see them!"

I scrambled down through the snow as best I could. When I got to the hikers, they were shaking dramatically, almost violently. I have never been so happy to see someone at such a level of hypothermia. This meant their core body temperature was likely 90 degrees or more, much better than I had feared. They were alert and ecstatic. Blake was even standing; Maddie could not. Before delving into any medical questions, I asked if they wanted to get off the mountain. They smiled and answered in unison, "Yes!"

The other search crew members came to our location to help. Before long, we were feeding Blake and Maddie, providing hot tea and putting them in sleeping bags. A rescue team had started up the mountain as soon as we found the pair, but we knew it would be three or four hours before the team got to us; they were dragging two rescue sleds. Although the hikers were in surprisingly good condition, neither Maddie nor Blake would be able to walk off the mountain. Carrying them down the mountain would take 10 to 12 hours. The quickest way off the mountain was by helicopter. If the skies cleared for just a few minutes, the helicopter could hover over us and we could extract both subjects with a cable hoist. It is an operation we perform for injured hikers numerous times each year in the High Peaks. However, we can only perform this method when winds are reasonable and

## Essentials for Winter Outdoor Safety

Each year, more than 200 people become lost or stranded in New York. There are things you can do to prevent being one of them. The best way to ensure an enjoyable outdoor experience is to be prepared for any situation you may encounter.

All hikers and campers should carry a survival kit in case they become lost or conditions worsen. The kit should include matches, a lighter or fire starter stored in a waterproof container. Cotton balls saturated with petroleum jelly can help light a fire, even in cold or wet conditions.

Other critical supplies include: a flashlight or headlamp (or both!) with extra batteries; a map, GPS and compass; a waterproof and windproof shelter; an emergency blanket; a first-aid kit and medications; extra food and water; rope; a knife; a cell phone with a charger or extra batteries; a loud whistle or device to project sound; and a mirror to signal your location.

Outdoor conditions can change drastically, so carry gear to handle rain or snow. Extra clothing like socks, hats and gloves or mittens could prove essential if you become lost or stranded.

Check weather conditions and forecasts before you embark, and avoid heading into dangerous conditions. Go another day. Leave an itinerary of your planned route and duration. Stick to this plan. This information will be crucial if you encounter trouble and need to be rescued.

Finally, know your limits. Avoid putting yourself, or rescuers, into dangerous situations. If you become lost or disoriented, stay calm, take steps to keep warm and dry, and stay put.

A rescue should be the last resort. Protect yourself through proper planning and preparation.

After locating lost hikers Blake Alois (top) and Madison Popolizio (bottom), rescuers put them in sleeping bags and provided hot tea to warm the young couple while waiting for the weather to clear enough for the helicopter to be able to evacuate them.

there is good visibility. We had neither of those at our location.

Nonetheless, we put harnesses on both Blake and Maddie. We wanted to be ready if conditions improved. The weather seemed to change by the minute. Each time we had a moment of clear sky, I radioed the helicopter crew, but those moments never lasted long. Six times the helicopter tried to make its way upslope to us, and each time, it had to turn back. For two hours we sat in the same snow hole that had sheltered Maddie and Blake for 40 hours. Finally, the cloud ceiling began to lift. The helicopter crew navigated an extremely narrow opening and hovered just 40 feet in the air. Forest Ranger Ian Kerr was the crew chief on board and operated the hoist. He opened the door of the copter, leaned out and sent the cable down. Rangers Robbi Mecus and Jamison Martin quickly snatched it up as it came within reach, attaching it to Maddie's harness. Within seconds, she was pulled in the door of the helicopter.

The helicopter was rocking back and forth, battling the wind. Two pilots, Troopers Tech Lt. Peter Mclain and Tech Sgt. Brian Rumrill, deftly held the chopper in place as best they could. With one cycle complete, Ranger Kerr sent down an empty cable. This time it was Blake who was hooked in and hoisted. The helicopter continued its difficult dance in the wind as Blake was pulled inside. Before the door was even closed, they were off, flying downslope to better visibility as the fog returned. I think all eight of the rescuers on the ground cheered, but I yelled so loudly I could not hear anyone else. The hoist operation took less than 90 seconds to complete, even though it was done in the worst of conditions.

Fifteen minutes after being plucked from the mountainside, Blake and Maddie were at the Saranac Lake Hospital, being treated for hypothermia. They had survived, huddled together in a snow cave for 40 hours in the harshest environment we have in New York.

Summing up the rescue difficulties, helicopter pilot Lt. Mclain said later, "If I never do another dramatic rescue in my life, I'm good. One and done. That was quite the drama." We all agreed, but also know we will always be ready for the next one.

Forest Ranger **Scott VanLaer** works primarily in the High Peaks area in Essex County, and is a frequent contributor to *Conservationist*.

Winter clouds over Lake Ontario

# NEW YORK'S TIMELESS BEAUTY

## Through the lens of Joe LeFevre

I didn't pick up a single lens reflex camera until I was 25. I was recovering from Hodgkin's disease, cancer of the lymph system. After an uncertain time, which included surgery, radiation therapy, recurrences, and, ultimately chemotherapy, I needed something positive and beautiful to counter the dark time that I was enduring. Nature photography proved to be the perfect antidote.

In my early days of photography, I did not fully understand how much the time of day affected the quality of the photograph. I had not yet learned about what photographer Galen Rowell called "The Magic Hour": the period of time approximately one-half hour before and after sunrise and sunset when the warm light from the sun mixes with the cool, blue light of night.

The great landscape photographer David Muench once stated, "In most instances I will plan a scheduling of photographs. First, to discover and explore a strong location, sizing up its elements, getting a feel for its potential. Later, at a favorable hour of the day or time of the season, I will return and go to work." I remember thinking, "Who has time to do that? I'll just photograph whenever I happen to be there." Of course, Rowell and Muench were right, but it took me a while to learn those lessons. Now I plan photographs in advance, and return at the magic hour, when the light is right.

Tree at sunset, Sitts Bluff

American Falls on Niagara River

Full moon over Raquette Lake Inlet

McIntyre Bluffs, Sterling Nature Center

West Branch Ausable River

Lower Cascade Lake

Salmon River Gorge

When shooting a winter scenic, the first thing I look for is pristine conditions. For example, I search for snow mounds without footprints or tree branches with the snow still intact. It's all about timing. I like to be on location as soon as the snow stops. I make it a practice to scout potential locations in advance so that when the right conditions present themselves, I can get there without having to search for a good spot. Having said that, I am flexible, because it's impossible to anticipate completely where the optimal location might be to capture a beautiful winter landscape.

I am much more successful today than I was in those early days when I just wandered around. After all, life is short; there are so many photographs to take, and so little time...

Award-winning landscape photographer **Joe LeFevre** makes his home in Oswego, where he "...is constantly in search of magical light." You can see more of his work at **www.joelefevrephoto.com**

Western New York residents know Lake Erie provides the perfect backdrop for glorious sunsets like this one, at the mouth of the Buffalo River.

# RIVER REBORN

## Once-contaminated Buffalo River Spawns Economic Renaissance

By Kristen Davidson, Damianos Skaros, Jane Edgington and Anna Svirgun
Photos provided by Kristen Davidson, unless otherwise noted

Standing at the river's edge, it's hard to imagine that this 22-foot-deep, 300-foot-wide channel, lined with thick cement walls and surrounded by gigantic grain silos and other reminders of Buffalo's booming industrial past, was originally a quiet, narrow creek. But it was; 225 years ago, the Buffalo River was just a babbling, twisting ribbon of water, a few feet deep and full of fish, plants and wildlife.

In 1819, the river was dredged and widened to allow large boats to transport goods from local industry. The broader and deeper navigation channel spurred local manufacturing and generated regional economic benefits, but would also have significant and lasting impacts. While the region's steel, grain and chemical industries prospered throughout the late 1800s and early 1900s, their operations affected the health and environmental quality of the river.

Before strict state and federal environmental regulations were adopted, local communities and industries discharged and dumped wastes, toxic chemicals and other pollutants directly into the Buffalo River. In addition to degrading water quality and destroying wildlife habitat, the pollutants sometimes changed the river's water color, and thick oil sheens on its surface led to river fires—which occurred as late as 1968. In effect, discharges of industrial contaminants and sewage transformed the river into a chemical soup.

Conditions continued to degrade over time. By 1928, river water was devoid of oxygen, rendering it incapable of sustaining aquatic life. Without oxygen, the Buffalo River was pronounced biologically dead, and remained that way for decades.

In 1987, the U.S. Environmental Protection Agency (EPA) identified the Buffalo River as one of the most contaminated water bodies in the Great Lakes basin, and designated it an Area of Concern. This classification was an important step for the river's future, because it initiated a series of actions that would turn the tide of the river's environmental health.

In 1989, DEC implemented the Buffalo River Remedial Action Plan, a daunting and extensive assignment to develop a strategy to (literally) revive the river. The first step was to clearly define the river's environmental problems, and identify measures to clean up and restore the river.

The Buffalo River Restoration Partnership played a key role in this effort. This unique public-private-non-profit partnership, including the EPA, the U.S. Army Corps of Engineers, DEC, the Buffalo Niagara Riverkeeper® and Honeywell, advanced plans to address a number of environmental problems affecting the Buffalo River, including contaminated river sediments, poor water quality, a lack of safe public access, and insufficient fish and wildlife habitat. The partnership brought together diverse resources and expertise and developed plans for a comprehensive cleanup and transformation of the river into a beneficial environmental, economic and community resource.

Not surprisingly, repairing the health of this eight-mile "dead" river was no walk in the park. New and improved environmental policies, and regulations on wastewater and stormwater discharges helped improve the river water's oxygen levels and prevented additional degradation. In addition, a remedial action plan was developed to address sediment contamination, and a vast and diverse environmental habitat design was proposed to reestablish aquatic habitat along a six-mile stretch of the river.

Because the vast majority of contaminants had settled into the river sediments, the only viable cleanup option was to mechanically dredge the sediments to remove contaminants. Dredging began in 2011, and continued 24 hours a day, 6 days a week. This major project was completed in 2014, removing one million cubic yards of contaminated sediment from the river floor—equivalent to approximately 100,000 truckloads. During this remediation, barges and cranes could be spotted day and night on the river, dredging up the remains of a century-and-a-half of pollution and neglect. At the height of this $60 million project, cranes were lifting up to 10 tons of contaminated soil from the river per minute.

Dredging and capping contaminated sediments in the City Ship Canal, which connects to the Buffalo River, helped restore crucial aquatic habitat for fish, birds and other wildlife.

Downtown Buffalo as seen from the mouth of the Buffalo River.

# A Day in the Life of the Buffalo River

Each fall, staff from DEC's Reinstein Woods Nature Preserve in Cheektowaga team up with volunteers, local environmental organizations and educators to offer a "Day in the Life of the Buffalo River." This unique, hands-on experience offers middle school and high school students a rare opportunity to learn about the river system, its watershed, and local ecology.

During the event, students collect scientific data; they measure water quality parameters like clarity and chemistry, and investigate aquatic wildlife and habitat. DEC experts provide guidance and training, and help teach the students the importance of having relevant data to understand and protect the overall health of the river. Data is posted online so participants can compare their results with data from other sampling sites and from previous years.

Local teachers and volunteers receive training and supplies to create an exciting learning experience for their students. Check back this summer for updates on how you can help contribute to the future of the Buffalo River.

Along with the dredging, an underwater environmental "cap" was placed on sediments of the adjacent 1.4-mile waterway known as City Ship Canal that connects to the main stem of the Buffalo River. This five-acre cap isolates contaminants and creates valuable habitat for fish and wildlife.

Although it provides significant environmental benefits, dredging has a downside: it removes everything, including sediment, contaminants, slag, and litter, but also aquatic plant life and natural habitat as well. So, after dredging eliminated most of the contamination—including high levels of harmful toxins that once lined its sediments—it was time to reintroduce much-needed aquatic vegetation, basically starting from scratch.

In 2015, Great Lakes Restoration funding was used for restoration efforts along a two-mile stretch of shoreline and in-stream habitat. Natural fish-sheltering structures were scattered in the shallow water near the river's edge and 80,000 native plants were installed to reestablish critical habitat in the newly restored river.

Habit restoration is expected to improve fishing along the river and in Lake Erie. The aquatic vegetation offers protection for young fish, allowing larger populations of fish such as walleye, bass, bullhead and trout to once again thrive in the river and eventually populate Lake Erie.

"We start with plants, because plants are the base of the ecologic pyramid. Once a healthy plant population is established, fish and wildlife can thrive," explained Timothy DePriest, a DEC habitat specialist. He noted that tree seedlings have also been placed along the river's edge to hold soil together, reduce erosion, and eventually provide all-important shade on the river to keep the water cool and full of dissolved oxygen.

"Nature is resilient, and we have a good chance of restoring a successful ecosystem," DePriest said. "Remember, this river was dead not that long ago, and if you look at where it is now, the improvement is remarkable." As proof, he cites the fact that in the early 1960s, not a single fish could be found in the Buffalo River. Just 20 years later, DEC identified more than 20 fish species in these waters. "The river has proven it is more than capable of a comeback," he noted.

Kayaking and other recreational activities at Buffalo RiverFest Park provide opportunities to explore and enjoy the restored river, amidst a backdrop of Buffalo's industrial history.

Courtesy of Canalside

Restoration of the river has brought people back to the area for activities and events, such as those at Canalside. Visit **www.canalsidebuffalo.com** for more information.

The Buffalo River restoration project has revitalized a once-neglected waterway, and has generated optimism throughout the city and the region. A cleaner, healthier river has helped spur an economic renaissance, as communities, residents and tourists rediscover a now vibrant waterfront. Sites like Canalside (**www.canalsidebuffalo.com**), a popular boardwalk park on the city's inner harbor, offer a variety of year-round events and activities, from kayaking, fishing, ice skating and boat tours, to free concerts, exercise classes and breathtaking views of a newly restored waterway. Single events at Canalside attract up to 15,000 people to the waterfront, and that number continues to grow.

In retrospect, the restoration effort has been a boon for the environment and the entire area. The efforts of various governmental agencies and the Buffalo Niagara Riverkeeper® have truly restored the river. The physical size of the project was extensive, but its environmental, cultural and economic impacts are immeasurable. It clearly shows how a clean, accessible environment can transform a community, creating new opportunities for residents and visitors, and generating economic benefits.

If you have a chance, take a trip to the river. See the renaissance and enjoy everything the restored Buffalo River has to offer. Clearly, this little creek has come a long way.

**Kristen Davidson** is a citizen participation specialist in DEC's Buffalo office. **Damianos Skaros** is an environmental engineer with DEC's Great Lakes Program. **Jane Edgington** and **Anna Svirgun** were interns in DEC's Buffalo office.

The Edward M. Cotter fireboat (and winter icebreaker/water rescue vessel) on the Buffalo River. Built in 1900, the "Cotter" is a National Historic Landmark and the nation's oldest active fireboat.

# Buffalo Niagara Riverkeeper

In 1989, a group of local citizens formed the "Friends of the Buffalo River" to protect areas along the river from further industrial harm and promote habitat restoration. The group eventually expanded its scope to include the Niagara River, and changed its name to the "Friends of the Buffalo Niagara Rivers."

In 2003, the EPA designated the "Friends of the Buffalo Niagara Rivers" as the Buffalo River Remedial Action Plan coordinator. In this role, the organization, which became Buffalo Niagara Riverkeeper, was the lead agency working with DEC and other partners to identify and implement projects to improve the health of the river. In addition, Buffalo Niagara Riverkeeper was charged with developing monitoring protocols to track and address issues that negatively impacted the river and its resources, including fish and wildlife, water quality and public use.

For more than a quarter of century, Buffalo Niagara Riverkeeper has played an active role to protect regional water quality and connect people to water resources. The organization's core activities focus on cleaning up pollution in waterways, restoring fish and wildlife habitat, and enhancing public access to rivers, streams and the Great Lakes through greenways that expand parks and open space.

## Riverkeeper offers a number of programs, including:

**Riverwatch**: Trained volunteers use the latest technology to gather water quality data (pH, turbidity, dissolved oxygen levels, etc.) to assess, maintain and restore healthy waterways.

**Living Shorelines:** This program restores shoreline areas to their natural form that supports a sustainable, resilient and higher-functioning ecosystem. These efforts create functional, beautiful and healthy shorelines, improve water quality and habitat, and enhance recreational access.

The **Young Environmental Leaders Program** (Y.E.L.P.): Public high school students from underserved communities can explore current local environmental issues that disproportionally affect their communities. Students undertake a science-based curriculum and examine topics such as environmental justice and efforts of the region's emerging Blue Economy.

*Authors' note: Congratulations to Buffalo Niagara Riverkeeper, recipient of the International River Foundation's Thiess International Riverprize in 2016. This prestigious environmental award recognizes efforts that have made a difference in protecting, reviving and restoring the world's rivers, and supports organizations that "have developed and implemented outstanding, visionary and sustainable programs in river management."*

# SAP TO SYRUP

## Maple Sugaring at Battle Hill State Forest

By Erin M. Jennings; photos provided by author, unless otherwise noted

It's late winter—maple sugaring time. Warm days and freezing nights create perfect conditions for sap flow, and people all over the state head into the woods (or their backyards) to tap maple trees and collect sap that will become that delicious confection: New York maple syrup.

Maple syrup production in New York is growing at a rapid rate, as enterprising individuals and businesses capture the distinctive natural flavors found exclusively in North American trees. According to the NYS Maple Producers Association, more than 600,000 gallons of maple syrup were produced from the sap of New York maples in 2015—that's more than two-and-a-half times the amount produced just 10 years earlier.

With more people interested in tapping trees, DEC has begun opening some of its forests to maple production. After a competitive bidding process, the state will award a contract to a qualified maple syrup producer, which allows that producer to collect sap on specified state lands. Producers are required to minimize their impact on the recreational use of the forests and to follow "Best Management Practices" to protect environmental resources. For example, access restrictions may be placed to protect sensitive areas like stream crossings and wet soils.

In 2012, the DEC Forestry Office in Altmar (Oswego County) identified an eight-acre site on Battle Hill State Forest, just north of Redfield, as a potential site that met the criteria for maple sugaring. The area has many sugar maple trees, low potential for timber harvesting, and is accessible from public roads, even during winter months. After thoroughly assessing the stand's resources, including marking and tallying maple trees by number and size, DEC put the site out for bid in 2014.

The winning (and in this case, lone) bidder was Francis Adams. Together with his grandson, Jamie, Mr. Adams immediately drilled 150 taps, and strung miles of gravity-fed lines that ran to two collection tanks just off County Route 17. It was a successful first year.

The following winter, Francis and Jamie increased their operation to 225 taps, and also added additional roadside collection tanks that held up to 275 gallons of sap. Mr. Adams invited DEC staff to observe all aspects of his maple sap operation, including a visit to his sugar house. Here, the collection tanks are emptied into a boiler, where the sap runs through several chambers and slowly reaches 218°F to become syrup. The syrup is then filtered to remove any debris and is immediately bottled. The system can boil

Sap is collected from mature sugar maple trees using metal or plastic spiles (green) and tubing (blue).

Inside a sugar house, a boiler concentrates the sap by removing water as steam.

58 gallons of sap per hour; it takes nearly 5 hours to boil a single collection tank of sap.

Jamie estimates that they collected more than 2,650 gallons of sap from the stand on Battle Hill State Forest last year. Since it takes approximately 40+ gallons of sap to create one gallon of syrup, this means that more than 55 gallons of maple syrup were produced—a great success.

Of course, the most important measure of the success of maple tapping on state forests—or anywhere—is in the taste-testing. It's literally a "sweet" operation!

**Erin M. Jennings** is a forester in DEC's Altmar office.

*(Author's note: If you'd like to tap maple trees on state land, contact your regional DEC forestry office. Check DEC's website at* ***www.dec.ny.gov/about/558.html*** *for a list of offices.)*

Heated to the correct temperature, syrup is "finished off."

Syrup is filtered through cheesecloth before it is bottled.

# BATTLE HILL STATE FOREST

Named for a Revolutionary War battle fought nearby in what is now northern Oswego County, the 1,569-acre Battle Hill State Forest is truly wild. There are few seasonal roads, and no trails or amenities on this property. New York State acquired the majority of these lands in the 1930s for reforestation purposes. The state manages the property to promote forest health, watershed protection, wildlife habitat, timber production, and outdoor recreation (and now maple syrup production).

The State Forest is located along County Route 17 in the town of Redfield, Oswego County. The North Branch of the Salmon River and the Mad River wind through the forest, offering good fishing from their banks. Primitive camping is allowed (a permit is required for a stay of more than three nights, or for groups of 10 or more campers). In addition, the site has a variety of birds, mammals, reptiles and amphibians for wildlife viewing. During winter, snowmobiling is allowed along seasonal roads that traverse the forest.

# From Trees to Taps to Table

Historians believe early Native Americans drank sap and made maple products, but it's unclear if they made syrup. By the 1700s, however, both Native Americans and European settlers were using kettles to make syrup and sugar from sap.

Maple sap is a clear, water-like liquid captured when a maple tree is tapped. Sugar maple sap consists of about 1.5% to 2.5% sugar, and when evaporated—usually by boiling—it will become a sweet syrup.

Sap flows through a portion of the outer tree trunk called sapwood, which conducts water and nutrients from the tree roots to its branches through vessels known as xylem. The flow is caused by pressure differences within the tree that occur when temperatures fluctuate. When nighttime temperatures are below freezing, but daytime temperatures are above freezing, water from the soil is drawn up into the roots and travels up through the sapwood to the tree's branches. By boring into the tree trunk, you can tap into the flow in the xylem to capture the moving sap.

Whether it's a commercial enterprise or family hobby, tapping a tree is a simple process. All you need is a drill, a spout (or spile), and a bucket or other container to collect the sap. The rule of thumb is that you should only tap trees that are at least 10-12 inches in diameter measured at four-and-a-half feet above ground. A single tap generally will produce 10-20 gallons of sap, and it will take roughly 40 gallons of sap to produce a gallon of maple syrup. A single tap/bore hole should not adversely affect the health of a tree.

People interested in tapping trees to create maple syrup can obtain information from regional maple producer organizations (**www.nysmaple.com**) or a local Cornell Cooperative Extension office (**www.cce.cornell.edu**).

# Horn Hunting

## Teaching dogs to locate shed antlers

By Heidi Fuge

Tom Fish

"Goat horns" was the term Dad always used to describe my two whitetail antler mounts. Teasingly, he said it was a good thing I lived in a small house, because larger mounts would never fit. So now, if I want to add anything more impressive to my collection, I must either shoot a bigger buck or find the antlers myself. Better yet, since I love any excuse to do things with my dogs, I could teach them to be "shed-hunting dogs."

Tom Fish

The first step in training a shed-hunting dog is familiarizing the dog with the antler's scent.

As the name implies, a shed-hunting dog is trained to retrieve antlers that male deer shed each year. I learned about this rather obscure sport from Toby Boyce of Millerton, Dutchess County. She used to be a deer hunter, but found she preferred hunting for their dropped, or "shed" antlers with her pudelpointer, Noddy. Like other shed-hunting aficionadas, Toby loves spending time outdoors with her dog in any type of weather, tramping through endless woods, fields and swamps in search of a prize.

The best time to find antlers is late winter or early spring, after whitetail bucks or bull moose lose them. At this time of year, there aren't too many other outside dog sports, so walking through the woods and fields is a great way to keep your dogs (and you) in shape. But it is a race to find the sheds as antlers are a source of calcium and other nutrients for rodents (including mice, voles, porcupines and squirrels) who feed on them. That's why, despite the large number of deer in the state, you rarely find sheds lying around.

To locate antlers, the dogs use a combination of scent and sight. However, if you think you can just go out on a hike with your dog and....voilà... he or she will find some antlers, think again. Scent is the dog's crucial tool to locate the shed, but the area of the antlers that carries the scent is a tiny ring at the base where it was

## The best time to find antlers is late winter or early spring, after whitetail bucks or bull moose lose them.

once attached to the animal's head. The best shed locating dogs have been trained to identify that scent and are then rewarded for retrieving the antlers.

Toby started training Noddy to find and retrieve antlers indoors by placing some bottled scent on real antlers. As Noddy became proficient through this in-home training, Toby brought the dog outside for throw-and-retrieve games with the antlers. Gradually, this built up into taking Noddy into the cornfields to look for sheds. At six months old, he found his first shed. Toby is hoping she and Noddy will one day find the "Golden Prize" as she calls it: a full rack.

I've found that open fields and corn fields are some of the best areas to search for antlers. Look for nearby buck sign—rubs and scrapes—places where deer have been active and would be most likely to shed their antlers. Toby suggests avoiding bedding areas to prevent disturbance. To keep her dog interested and enthusiastic, she carries a spare antler to hide so that her dog will still be rewarded if he is unsuccessful in locating any recent sheds.

Training for the sport can begin at any time. All that's required are some warm rubber boots, a couple of sets of real antlers, a set of fake antlers (best for sensitive mouths of young dogs), a bottle of antler scent, a long line, and, of course, lots and lots of patience.

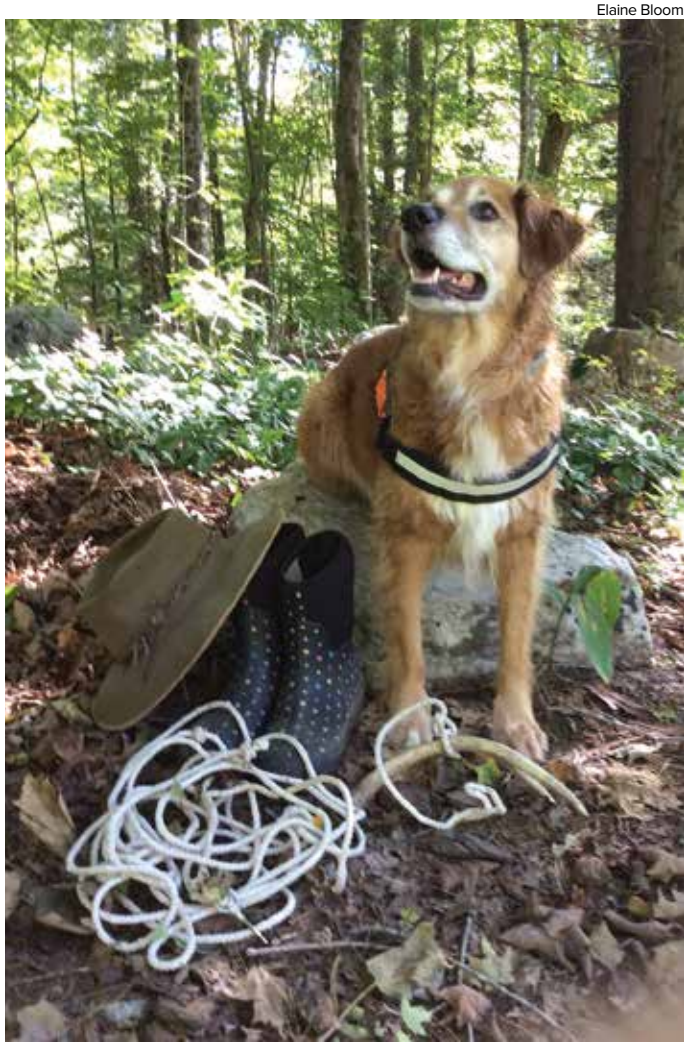
Courtesy of Heidi Fuge

After several conversations with Toby, I decided that I wanted to try my hand at finding something larger than the "goat horns" to adorn my wall. So my golden retriever mix, Tango, and I have begun training. To start, I bought wax antler scent and a real antler. I attached a cord to the antler so I could avoid touching it directly and accidentally adding my scent. I heavily coated the base of the antler with the wax scent and then hid it in a variety of locations, including under trees, in open grassy areas, and

Shed-hunting dogs learn to catch the scent in the air, as well as looking for sheds visually.

Tom Fish

Elaine Bloom



Training doesn't require a lot of equipment: an antler, bottled scent, rope, and a pair of warm, waterproof boots.

on the top of rocks. We've been making good progress, with Tango successfully finding the antler in most cases. Training her to retrieve the antler, however, will take more time; but we're working on it!

Tango's enthusiasm for this training has been so much fun to see, and is a reward for me. Of course, if we can find that elusive "Golden Prize," it will be even more rewarding.

If you're looking for a fun outdoor activity to do with your dog this winter, I encourage you to try shed hunting. You and your dog might just get hooked!

**Heidi Fuge** grew up in Raquette Lake, NY, where hunting and fishing were important parts of her life. Now living in Galway, NY, she still enjoys being out in the woods—especially accompanied by her dogs.

Elaine Bloom


## For more information...

If you're a dog lover who enjoys competitive sports with your pet, you might want to check out the North American Shed Hunting Dog Association (NASHDA) at **www.sheddogtrainer.com**. The site has information on training techniques and products, as well as a list of scheduled events—including the World Shed Dog Championship Invitational held in April.

Shed antler hunting trials are held all over the country. Any dog is capable of being trained for these events, provided the dog has been encouraged to use its scent and tracking abilities, and responds to being rewarded for retrieving the antlers rather than taking them to a secret place and gnawing on them.

In addition, a quick internet search of "shed antler hunting" can help you find places to purchase a starter kit that includes antlers (some real, some fake) and a bottle of scent.

For further reading, see "Searching for Sheds" in the April 2005 *Conservationist*.

Megan Webster, Ontario Co. Soil & Water Conservation Dist.

Volunteers plant trees at DEC's Honeoye Inlet Wildlife Management Area this past fall.

# TREES FOR TRIBS TURNS 10

## Planting Roots for More Vibrant and Resilient Communities

By Sarah Walsh

It was a cold, rainy December day as we piled out of the vehicle at Brookwood Park in the Village of Herkimer. Beth Roessler, DEC's Hudson River Estuary Program's Stream Buffer Coordinator, led the way into the park, where earlier that fall DEC foresters and community members had planted trees and shrubs along a tributary of the Mohawk River. We were here to see how the plantings were doing: were they still healthy, and were they protected from the elements and predators like beavers and deer?

The newly planted vegetation was obvious, even to the untrained eye. Trees along the edge of the parking lot had tubes around their trunks and the new shrubs along the stream were surrounded by 3 ft. x 3 ft. black mats. The mats protect the shrubs from grasses and weeds that could strangle them before they have a chance to grow. Walking around, we were pleased to see the success of the planting effort—the trees and shrubs clearly showed signs of life despite the cold, wet weather.

The plantings are part of DEC's Trees for Tribs (as in tributaries), a program in part funded by the Environmental Protection Fund, that works with local coordinators, like Beth, and municipal and community partners to restore streambanks with native trees and shrubs. Trees for Tribs provides trees at low- or no-cost, and also offers technical assistance to help ensure the success of planting projects across New York. It's truly a joint effort that would not be possible without the help of hundreds of volunteers who assist in replanting areas along New York streams each year.

Trout Unlimited Chapter, SUNY Cobleskill

SUNY Cobleskill students plant trees to improve wildlife habitat.

At Brookwood Park, the goal was to stabilize streambanks that were eroded by storms and flooding. This isn't an uncommon condition; in recent years, streambank erosion has threatened or destroyed houses, municipal buildings and land areas in many communities. By planting native trees and shrubs along these streams, the plant roots will grow deep into the soil and hang on when flooding occurs, holding soils in place and maintaining streambanks.

Native plants serve as a buffer between the land and water, slowing surface runoff and collecting pollutants before they enter the stream. This protects and improves water quality. In addition, trees and shrubs provide shade, which keeps the water cooler, helping to maintain water temperatures trout need. Furthermore, since wildlife use stream corridors to travel across the landscape—avoiding roads and other human influences—forested streams provide even more habitat and protection for bears, moose and other wildlife that require little or no human interaction.

During the past 10 years, Trees for Tribs has planted trees and shrubs at more than 590 sites, helping to stabilize streams to enhance their resilience in the face of extreme weather events. The program uses trees and shrubs from DEC's Saratoga Tree Nursery, which has been producing native New York seedlings for more than 100 years.

DEC photo

## Beth Roessler: Planning and Planting to Protect Our Environment

When she was young, Beth Roessler could not have imagined she would one day serve as Hudson Estuary Trees for Tribs coordinator, and Riparian Stream Buffer coordinator (through a unique partnership between NYS Water Resources Institute and DEC). Those positions did not even exist. But she was a "science kid" who loved the outdoors (and still does), so it's no surprise she eventually ended up working in the environmental field.

Beth grew up in Elmira, studied math in college, and then served as an AmeriCorps volunteer in both Washington and Colorado. She later worked with people with disabilities and traveled the world on a boat, before earning her master's degree in Environmental Science and Policy, which led to her current role with DEC's Hudson River Estuary Program. Beth works closely with municipal partners and volunteers to plant trees that shore up streambanks to enhance the environment and protect communities from storms, flooding, and the effects of climate change.

Beth is proud of the positive impacts these projects have had on our natural environment. She fondly recalls a project in Newburgh near a housing complex that opened up outdoor access in the community, allowing residents to literally see the beauty and recreation opportunities on a nearby lake. She also takes pride in visiting a site in Hyde Park where years ago she and volunteers planted young trees ranging in size from two feet to five feet. Today, they stand 20-30 feet tall.

The "science kid" who loved the outdoors found her niche. She realized there are "so many options to do what you want to do and also help the environment." At work, she helps communities restore, beautify and protect the environment. And when she has time to enjoy her favorite pursuits like hiking, traveling and cross-country skiing, she further affirms her love of the outdoors and commitment to protect it.

Trees for Tribs continues to grow. During 2016, the program expanded to include Pot-Up Events at Saratoga Tree Nursery where the public is taught about the importance of forested streams and shown how to plant "bare-root" trees and shrubs into pots. The potted plants are cared for until they are ready to be planted at sites across the state.

If you are interested in participating in the Trees for Tribs program and reside within one of these six New York watersheds—Lake Champlain, Mohawk, Susquehanna, Genesee, Hudson Estuary or Croton—contact Sarah Walsh (DEC's statewide coordinator) at treesfortribs@dec.ny.gov. If you do not live within one of these watersheds, but still want to help out, consider making a gift to DEC's Tree Planting Fund by visiting **www.dec.ny.gov/animals/77710.html**. This fund supports the Trees for Tribs Program and the Saratoga Tree Nursery's efforts to collect native seeds and grow trees to be planted across the state.

**Sarah Walsh** is the statewide coordinator for the Trees for Tribs program. She works in the Division of Lands & Forests in DEC's Albany office.

Sarah Walsh

Saratoga High School students and community groups throughout Saratoga Springs assisted in potting bareroot trees and shrubs at the State Tree Nursery to prepare them for distribution across the state.

Robin Kuiper

Volunteers help pot trees and shrubs at the 2nd annual Pot UP event at the State Tree Nursery to prepare them for planting in fall. The 3rd annual Pot UP is planned for May 2017.

Housatonic Valley Association

Beth Roessler

Trees for Tribs engages more than 1,000 volunteers each year in tree-planting activities.

## Across New York

Through Trees for Tribs projects, local communities and residents help build and sustain beautiful, resilient communities across the state. Here are a few examples:

### Hudson Estuary Trees for Tribs

(Hudson Valley) Launched in New York in 2007 by DEC's Hudson River Estuary Program, the Hudson Estuary Trees for Tribs Program was the first of its kind in the state. Under the program, 43,000 trees and shrubs have been planted along tributaries to the Hudson River Estuary. The program's success has served as a model for the expansion of Trees for Tribs into a statewide program.

### Genesee River Basin Trees for Tribs

(Western New York) The Genesee River Basin Trees for Tribs Program, in partnership with the Wyoming County Soil and Water Conservation District, provides free trees to landowners in high priority areas. Program Coordinator Kim Falbo works closely with landowners to develop a planting plan for their property, and acquires native planting stock from the Saratoga Tree Nursery for local projects. Through 2016, this group has planted more than 14,000 trees and shrubs within the Lower Genesee watershed.

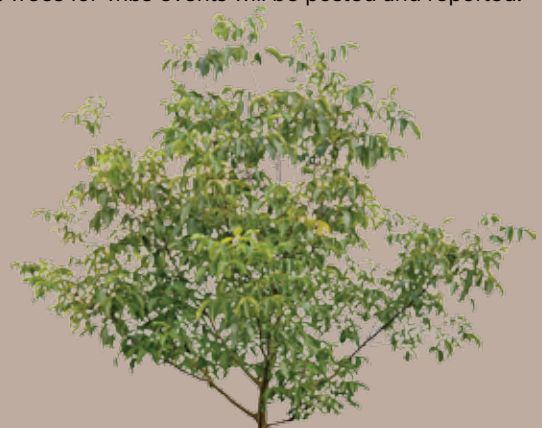
### Upper Susquehanna Coalition

(Central/Southern New York) The Upper Susquehanna Coalition (USC) is a network of 19 Soil and Water Conservation Districts across the Upper Susquehanna watershed in New York and Pennsylvania. With a mission to protect the important watershed of the Chesapeake Bay, this coalition has partnered with Trees for Tribs to plant riparian areas in parks and on private lands within the smaller tributaries of the watershed to improve water quality. During 2016, USC planted more than 10,000 trees and shrubs to stabilize streams and create wildlife habitat.

### Friends of Scarsdale Parks

(Westchester County) During the summer of 2015, the Friends of Scarsdale Parks planted 285 trees in their riparian park area, and then followed it up in 2016, by planting an additional 275 plants to enhance this streamside reforesting effort. The Friends group consists of Cornell Cooperative Extension Master Gardeners and other tree enthusiasts, and hosts 150 volunteers at each planting event. The group has painstakingly removed Japanese knotweed by hand, helping to control this invasive plant that grows along streams and is very difficult to eradicate. The group celebrated its efforts by planting native trees and shrubs to restore their park. This small group was so enthusiastic, they held their own planting session in 2016, using the skills they learned from the previous year's planting to train their own volunteers for the second planting event.

To learn more about Trees for Tribs events in your area, visit DEC's webpage: **www.dec.ny.gov/animals/77710.html**. You can also follow DEC on Facebook at **www.facebook.com/NYSDEC/**, where the latest Trees for Tribs events will be posted and reported.



# PHENOLOGY

## Tracking the Natural Events Occurring All Around Us

**By Stacy McNulty**

If you are a winter outdoor enthusiast, you probably check the weather forecast often to decide when to hit the slopes or snowshoe through new-fallen powder. Perhaps as a gardener, you note the last day of frost each year to know when to plant tender seedlings. Or, like many people, in late September you plan a trip to enjoy New York's spectacular autumn leaf colors. In each of these instances, phenological information is essential to understanding changes in the environment and can help you plan activities.

Phenology is the study of the timing of natural events such as the appearance of the first apple blossoms. Precipitation, temperature and wind patterns combine to create climates that vary across space—from mountaintop to valley floor for example, or from a wetter (mesic) western hillside to a drier (xeric) eastern slope. The patterns change regularly over time (and also due to variation in daylength), creating a diverse set of environmental conditions to which species respond. New York State is situated within the temperate forest biome with distinctly seasonal climates that are so familiar to us.

Jim Clayton

**Researchers record snow depths and the area of ice coverage on lakes and bays. Based on this data, we know the duration of winter ice cover on certain Adirondack lakes has declined by three weeks since 1975.**

An awareness and understanding of phenology is important to many human activities and applications. Farmers rely on good information to know when to water and fertilize crops, or when insect pests or diseases might become problematic. Most outdoor recreation, from fishing to snowmobiling, is dependent upon the weather. Pollen alerts and heat warnings are other examples of phenologically driven information that directly impact people's well-being, livelihood and enjoyment of nature.

### How is Phenology Studied?

Scientists and students at the Adirondack Ecological Center on Huntington Wildlife Forest, a biological field station of SUNY College of Environmental Science and Forestry (ESF), have collected phenological data since the 1930s. This wealth of information has been essential to documenting changes to the environment. For example, researchers note the day when specific lakes are completely covered with ice, and when open water is again present in spring. The exact dates depend on lake size, depth, orientation to wind, and other factors. Based on these data, we know the duration of winter ice cover has declined by three weeks since 1975. This includes climate warming that may change lake ecology and affect species such as trout that need cold water.

Lakes at Huntington Wildlife Forest have been freezing later in the year due to the earth's retention of heat. This loss of ice cover may alter the water chemistry and favor different algae and plankton, which would affect the rest of the food chain. Algal blooms related to water temperature can have serious effects on natural systems, and humans and their pets. Winter warming also results in precipitation coming as rain instead of snow, which leaves plant roots susceptible to freeze-thaw damage. Loss of the insulating blanket of snow that many northern animals evolved to take advantage of may have significant implications for the ecosystem. Phenology data are essential to illuminate these ecological relationships.

Thomas D. Lindsay

For years, amateur naturalists have made phenological observations like blooming dates of native flowers, such as this red trillium (*Trillium erectum*).

U.S. Fish and Wildlife Service

Phenology has to do with the timing of natural events, including flowering dates, first and last frosts, and the migration of birds.

High-resolution digital cameras are important tools in phenology, helping to create a rich dataset that can be used to ask questions about forest ecosystems such as: what controls dormancy in plants and the last stages of leaf development (senescence) in autumn? How does vegetation influence albedo, the reflection of solar radiation from earth into space?

The PhenoCam project was initiated to document tree phenology across New England, northern New York and Canada, and now includes cameras spanning plant communities throughout North America. Webcams take automated photos of the local conditions, usually every 30-60 minutes. These pictures aid scientists in modeling vegetation green-up in spring, document which elevation zones experience frost damage, and calibrate the colorful changes to birches, maples and other trees in autumn that indicate preparation for winter. Millions of images have been captured to date—a huge treasure trove of information on the near-ground environment. (**http://richardsonlab.fas.harvard.edu/phenocam.html**)

A webcam at Huntington Wildlife Forest shows a view of nearby Goodnow Mountain. The camera documents hourly changes in weather as well as leaf presence and greenness. A second camera provides pictures of trees near Arbutus Lake, a highly-studied watershed where real-time water temperature, wind speed, pH, stream flow, and other environmental parameters are monitored. The images are captured and sent to the PhenoCam project. (**www.esf.edu/hss/em/huntington/data_map_click.html**)

Not all phenological projects involve technology, and some datasets may not seem scientific at first glance. For example, an early lake ice record for the central Adirondacks in November 1874 was discovered in a letter from a man commenting on conditions near his home on Rich Lake. Ice-in records on Lake Champlain go back 200 years because water-based commerce has always been critical to the region's economy. These records show the lake completely freezes less often today than in the past. Such information captured in photos, diaries and correspondence is valuable for phenology research because it provides important evidence on climate variability.

Historically, amateur naturalists commonly noted phenological observations about flowers and butterflies in their gardens and familiar areas. Following revolutions in industry and technology, twentieth-century scientists became the primary data collectors. However, many current phenology initiatives are citizen science-based and involve scout troops, teachers and their students, church groups, book clubs, or anyone interested in joining projects at local, state and national scales.

The Cornell Lab of Ornithology's eBird application (**http://ebird.org/content/ebird/**) is one of the most well-known examples of crowd-sourced phenological data, in that each bird sighting has a location and date associated with it and can be linked to weather information. This global database of birds moving across and interacting with the landscape has already enabled fascinating research on bird abundance and distribution, and informed conservation and education initiatives.

## Phenological Detectives

Some citizen science programs are designed to gather phenology data to inform policy. In spring 2014, researchers and students from SUNY ESF, New York Natural Heritage Program, and Paul Smiths College began a volunteer wetlands monitoring project in the Adirondacks through an Environmental Protection Agency grant administered by the Adirondack Park Agency. Lowland boreal wetlands, including conifer swamps and peatlands like bogs and fens, make up about one-third of all Adirondack wetlands and about 5 percent (250,000 acres) of the Park. These wetlands are important conservation targets because they are still largely ecologically intact, provide habitat for rare plant and animal species, are found at the southern edge of the

boreal forest, and are separated geographically from similar habitat in Canada. The wetlands may be sentinels for climate change, especially because many of them are undeveloped and may reveal information not attributable to other factors such as land use.

Certain birds, plants and amphibians in Adirondack wetlands were chosen to help scientists assess climate change effects over time and space. Citizen scientists visit boreal wetland sites to identify and measure a set of common and rare plants, count songbirds, and perform evening call surveys for amphibians. It's a fun way for people to further explore a route they regularly walk or new places they encounter. Repeat visits by the volunteers produce data on the presence or absence of plants, plant phenophase (for example, fruit-set or leaf-off), and species activity (nest building, territorial calling). Volunteer observations are matched with weather station data for the site, and, ultimately, can be stitched together with models to develop the "story" of these wetlands.

Because it is impossible to monitor everything, the project team developed a portfolio of focal species that includes both common and rare organisms. Some are obligate boreal species, meaning that they breed only where northern plant communities are present. For instance, the palm warbler is highly dependent on peatlands because it nests on top of sphagnum moss mats in mostly treeless sites. Other species are ubiquitous in the region, such as tamarack, which grows along roadsides in much of northern New York and also in peatlands. In total, 13 bird species—the "Boreal Baker's Dozen"—represent this iconic lowland wetland community type in the Adirondacks and include the gray jay, blackpoll warbler, rusty blackbird and state-endangered spruce grouse.

For the Adirondack Wetland Citizen Science program, our team offered training workshops that focused on species identification, peatland biology and how to use digital tools to collect data. Volunteers received kits containing GPS units, headlamps, species identification guides, and other useful safety and scientific equipment (bug nets and repellent are a must in June). In addition to enabling data collection, one of the key results of these workshops was creating a community of people excited about making science part of their life.

## Moving Forward

Phenology will continue to play a vital role as we work to protect and enhance wildlife and natural resources, and preserve our quality of life, especially in light of climate change. The study of the timing of natural events is a never-ending process.

As winter slowly comes to an end, our thoughts again turn toward the rhythms of spring. With time and a little patience, lilac flowers will burst from their tightly-sheathed buds, brightly-colored wood warblers will dart between dappled sunflecks in the trees, and the ringing chorus of spring peepers will greet us in the lengthening hours of dusk. It is also key to observing how the earth's climate is changing. So any time you detect events unfolding in the natural world, you are actually making phenological observations that may influence your daily life and future.

Thomas D. Lindsay

Skunk cabbage (*Symplocarpus foetidus*) is one of the earliest plants to emerge in spring.

**Stacy McNulty** works at SUNY College of Environmental Science and Forestry's Adirondack Ecological Center in Newcomb.

## How You Can Participate

Anyone can be a phenological detective and get involved in a citizen science project. A keen eye or ear and some careful observations on when, where, and what you noticed is all it takes. A journal, binoculars and camera are useful, and, in some cases, projects may require smart phones, tablets, or other tools.

In addition to eBird mentioned in the article, here are two other phenology-related citizen science programs:

Nature's Notebook (**www.usanpn.org/natures_notebook**) is a web-based program where amateur and professional naturalists record regular observations of plants and animals for scientific discovery and decision-making. You may select from a long list of plants and animals found in New York.

North American Amphibian Monitoring Program (**www.pwrc.usgs.gov/naamp**) is a cooperative effort between the US Geological Survey (USGS) and 25 partners for monitoring amphibian populations. The Frog Call Quiz (**www.pwrc.usgs.gov/Frogquiz/index.cfm**)—provides a resource to learn the calls of various frogs and toads.

# On Patrol

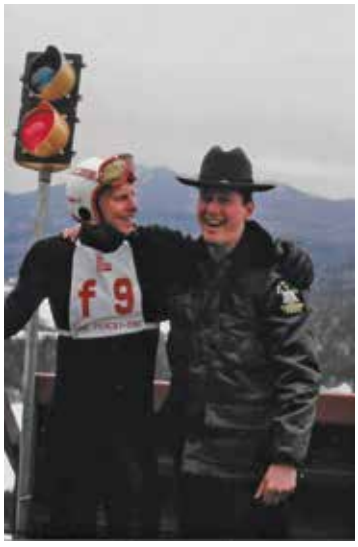
Carl Heilman II

*Real stories from Conservation Officers and Forest Rangers in the field*

**Contributed by ECO Lt. Liza Bobseine and Forest Ranger Capt. Stephen Scherry**

## Squirrely Poachers—Greene County

ECO Myles Schillinger arrested two men for shooting across a public highway, shooting within 500' of a residence, and hunting small game without a license. Officer Schillinger was following up on a complaint that participants in the "Sqwirl Skramble" (sponsored by a local rod and gun club) were taking more than the limit of gray squirrels. When interviewed by the officer, the two poachers admitted to their unethical and unsportsmanlike behavior, which reflects poorly on ethical hunters.


*[Note: After 37 years on the job, Officer Schillinger, pictured above, plans to retire this year. In 2015, he received the "Officer of the Year" award from the Northeast Conservation Law Enforcement Chiefs Association. In his first year on the force, Officer Schillinger worked at the 1980 Olympics in Lake Placid (pictured at left).]*

## Ice Climbing Fall—Essex County

While ice climbing a route on Pitchoff's North Face, the lead climber fell. Two ice screw anchors failed, resulting in a fall of about 100 feet. The 40-year-old male climber from Stanford, CT sustained severe leg injuries. The other members of his climbing party called for help, lowered him to the base of the climb, and kept him warm until forest rangers arrived on scene. Rescue personnel stabilized the subject, packaged him for extraction, and using low-angle rope rescue techniques lowered him to the beaver pond at the foot of the climb. The subject was then taken via snowmobile rescue sled to Rt. 73 where he was turned over to Lake Placid EMS for transport to Adirondack Medical Center in Saranac Lake for further medical treatment.

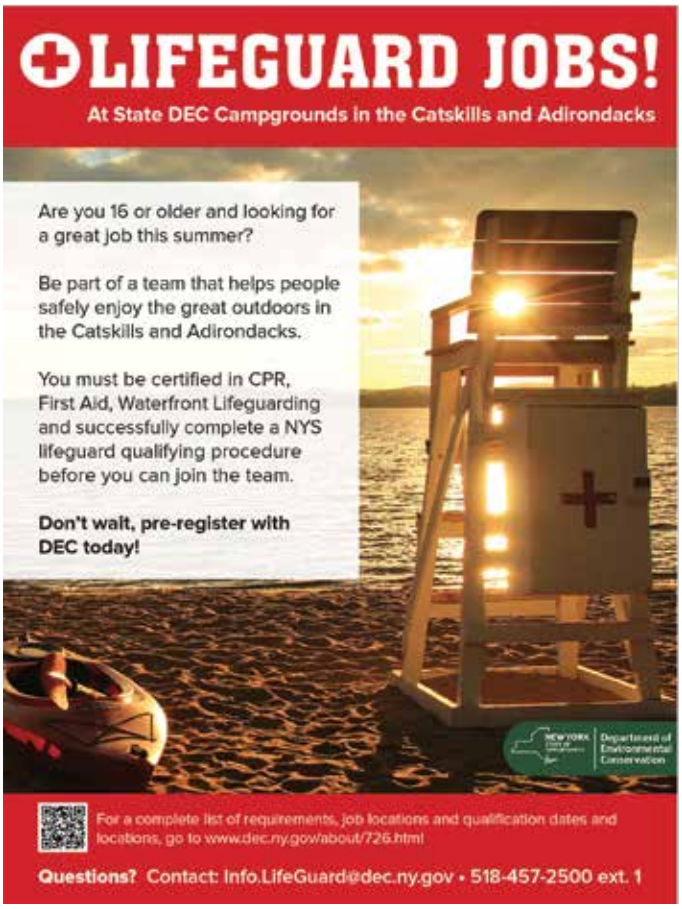
## DNA Deer—Cattaraugus County

ECO Robert Nosal successfully concluded an investigation using DNA and necropsy technology. A complainant reported that he heard a gunshot and then observed two men in a truck on the shoulder of Snowbrook Road with a freshly killed doe. The men drove away as the complainant approached, but were identified as two local residents. Officer Nosal interviewed the men and examined the deer. The vehicle driver claimed that he had accidentally struck the deer as it crossed the road and that his friend then shot the deer because it was suffering. He pointed to damage and deer hair on the bumper and grill area of his truck. The passenger gave a written statement corroborating this story. Officer Nosal noted the deer showed no signs of being hit by a vehicle; he collected the deer, and genetic material from the vehicle's front bumper, and submitted them to the DEC Lab in Delmar for necropsy and analysis. Further genetic testing was conducted by the Northeast Wildlife DNA Laboratory in East Stroudsburg, Pennsylvania. A forensic report concluded the deer and the sample from the bumper were genetically distinct; they were not from the same deer. The men were charged with several Fish & Wildlife Law offenses. When confronted with the evidence, they settled their cases for $1,012.50 each.

## Report Bear Dens

Hunters, hikers and winter outdoor enthusiasts can help DEC track black bears by reporting bear den locations. As part of ongoing monitoring, DEC wildlife biologists periodically check bear dens in winter, putting radio collars on some bears. The collars allow biologists to track the bears' activities and find dens in subsequent years to monitor cub production, the animal's condition, and survival rates. If you find a bear den, do not approach or disturb it; note its location and move away from the den site. Report it to your local DEC wildlife office; include GPS coordinates if possible. Bears may den in a rock crevice, tree cavity, or under heavy brush or fallen trees. Newborn cubs emit a high-pitched squeal that may be audible near a den. For information about black bears, visit **www.dec.ny.gov/animals/6960.html**.

Robin Kuiper




## Wanna Be a Lifeguard?

DEC is seeking seasonal lifeguards to work at state campgrounds in the beautiful Adirondack and Catskill Parks this summer. Most facilities offer free housing. DEC lifeguards must be at least 16 years old, possess current waterfront lifeguarding certifications, meet the agency's medical requirements, and successfully complete the DEC lifeguard qualifying procedure. The procedure, which is offered through June 11, requires an in-water demonstration of lifesaving techniques and performance of cardiopulmonary resuscitation (CPR). For more information, updates, or to pre-register, call 518-457-2500 ext. #1, e-mail **Info.LifeGuard@dec.ny.gov**, or visit DEC's web page at **www.dec.ny.gov/about/726.html**. (NYSDEC is an equal opportunity employer.)

## Money for Class Trips

Many New York public schools are eligible for state funding for class trips to a state park, nature center, historic site, DEC environmental education center, DEC fish hatchery, or the SUNY-ESF Adirondack Ecological Center in Newcomb. Through the Connect Kids to Parks Transportation Grant Program, schools can be reimbursed for transportation costs

for K-12 classes in Title 1 schools (schools with high numbers or percentages of low-income students). Some sites offer special guided programs; others have self-guided tours. Grants will reimburse bus costs, tolls, bus entry fees to a facility, and program fees, up to $750. For more information and to apply for the grant, visit **www.nysparks.com**.

Susan Shafer

## Urban Forestry Grants

DEC is currently accepting applications for urban forestry grants to enhance landscapes and create or expand green space in densely populated areas. A total of $2.3 million from the NYS Environmental Protection Fund will support grants for tree plantings, tree maintenance and inventories, and community forestry management plans in areas where trees and green space are limited. Eligible applicants include municipalities, public authorities, school districts, community colleges, public benefit corporations, soil and water conservation districts, not-for-profit organizations and Indian nations. Grants range from $11,000 to $75,000. There is a 25 percent match for tree plantings and maintenance projects; tree inventories and community forest management plans do not have a match requirement. To apply, visit the Grants Gateway website at: **https://grantsgateway.ny.gov** and search for "2016 Urban and Community Forestry Grants." The deadline to apply is March 1, 2017 at 2 PM. For more information, call 518-402-9425 or email **mary.kramarchyk@dec.ny.gov** with "UCF grant" in the subject line.

## Open Space Plan Updated

In mid-December, Governor Cuomo announced the adoption of the 2016 Open Space Conservation Plan—a blueprint to guide the conservation of New York's natural resources and promote outdoor recreation and a green economy. The plan updates goals and priorities of the 2009 Open Space Conservation Plan, and features 140 priority projects identified by regional advisory committees. The State Environmental Protection Fund (EPF) will continue to be a critical tool to achieve Open Space Conservation Plan goals. The 2015-16 State Budget appropriated $300 million for the EPF, a record level of funding. To view the 2016 Open Space Conservation Plan, visit **www.dec.ny.gov/lands/98720.html**.

Office of Governor Andrew M. Cuomo


## Winter Wonderland

Children, families and individuals of all ages are invited to celebrate a "Winter Wonderland in the Woods" at Reinstein Woods Nature Center, in the Town of Cheektowaga, Erie County, on Saturday February 11th, from noon to 4 PM. The event will feature a variety of outdoor activities, including ice-fishing demonstrations, and opportunities for children to try snowshoeing or cross-country skiing (weather permitting), test their skills in a snowball target toss, and more. Kids can also enjoy a snow art area and indoor craft making, and all attendees can learn about maple sugaring (see pg. 14). Registration is not required and there is no entry fee. For more information, visit the Reinstein Woods website at **http://reinsteinwoods.org/** and search for "Winter Wonderland."

## Out for a Stroll

I happened to see this fox crossing the road a few houses down last Saturday, and later, a friend spotted a bald eagle in a field a mile to the north. Nice seeing these "neighbors."

Raymond Sanger
Ontario, NY

*Nice shot! Adult red fox have a year-round red coat that is typically much more striking during winter months. They are known to occur in nearly every county of New York State.*

## Optical Illusion

I have several photos of this buck on my trail camera. Do you have any idea what may have happened to his rack? It appears that the rack was cut off, rather than broken. Is that possible?

Jeff Frew
Churchville, New York

*It looks like the buck's head was moving when the picture was taken, causing the tines to appear cut off. The buck may be closer than the optimal focal distance for the camera (its ear is also out of focus). Notice the other nice bucks in the frame too?*
*Jeremy Hurst*
*DEC Wildlife Biologist*

## Out of a Painting

We had beautiful freezing fog in the higher elevations, covering the hills, every tree and bush…it was like being in a painting. Sharing this experience makes me happy to live here, even though winter seems to drag on and on.

Abigail Bixby
Tompkins County

*Thanks Abigail, your photo makes us happy to live here, too. It's a great reminder to get outside and enjoy winter's beauty.*

## Contact us!

E-mail us at: magazine@dec.ny.gov
Write to us at: Conservationist Letters
NYSDEC, 625 Broadway
Albany, NY 12233-4502
facebook.com/NYSDECtheconservationist

## Hitting the Ice

*We've received several photos of family ice fishing outings. Below is a sampling. If you go ice fishing, we'd love to see your pics.*

My husband and I are passionate outdoors people, and we are blessed to have three little girls who are learning to love and appreciate our many resources. Here is our oldest, Hannah, super excited with a perch she caught all by herself on Brant Lake in the Adirondacks. All three of our girls' favorite food is fresh perch!

Melanie Houck
Adirondacks

Here is my four-year-old granddaughter Iris and her father Dan on her first ice fishing trip. She pulled in this pickerel herself (with her dad's guidance). She now has a lifetime sportsman license!

Patrick Patterson
Leeds N.Y.

We live in Northern Virginia, but my grandson Henry wanted to try ice fishing at our "summer home" on South Bay, Oneida Lake. It was 16 degrees and windy, but there is a smile under that hood!

Rick Bailer
Alexandria, VA

## Ask the Biologist

**Q:** After hearing a loud thud, I went out to our porch and found a sharp-shinned hawk had flown into our window. He was moving a little, and with a towel, I gently righted him. He stood and looked around for about 15 minutes, gathering his wits, then he flew up to the rail of the porch and off to the woods. What is the best thing to do when you find a bird in this condition?
—Peter Jensen

**A:** Birds are often stunned by flying directly into glass windows. To learn how to prevent such encounters, please see our article "When Birds and Glass Don't Mix" by Dr. Christine Sheppard of American Bird Conservancy in the April 2016 *Conservationist*, available at **http://on.ny.gov/2dSnPqg** (PDF file). More information is available on the American Bird Conservancy website **https://abcbirds.org/**.

Should a bird hit your window, gently place it inside an unwaxed paper bag or cardboard box, firmly secured. Put it in a quiet location away from people and protected from pets. Do not give the bird food or water. Check DEC'swebsite at **http://on.ny.gov/2htN5an** for a local wildlife rehabilitator, or ask a local environmental education center for guidance. If you do not have a local rehabilitator, or if the bird is standing and looks OK after a few hours, release it. Learn more about what you should do if a bird hits your window, at **www.birds.cornell.edu**, search "window collisions."

### Want to see additional content?

Sign up to receive our new interactive digital edition which includes extra photos, videos and links. It's free to paid subscribers who provide a valid email address. To submit your address, click the Customer Service link on our webpage (**www.TheConservationist.org**), log into your account, and enter your email address. When each new issue is available, you will receive an email with a link to the digital edition. Sign up today!

John Bulmer

# Back Trails

**Perspectives on People and Nature**

## Owls

**by John Rowen**

When winter seems endless, owls offer a welcome sign that spring is on the way.

In winter bleakness, owls begin their mating rituals, hooting at dusk and into the evening. According to Jenny Murtaugh, a wildlife biologist with DEC, "Owls call to declare territory, attract or communicate with a mate, or to locate owlets."

Last year, owls in our wooded neighborhood were hooting so loudly and for so long that I wanted to call Mother Nature and ask her to tell these neighbors to keep down the noise!

The three most common owls in New York are the great horned, barred and eastern screech-owl. The long-eared owl and northern saw-whet owls are found in New York, but are rare, secretive and little is known about their population trends. The short-eared owl is considered endangered in New York and is best seen in winter; its populations are declining with loss of grassland habitat. The barn owl is rare everywhere in the state, but more common in southern New York.

The snowy owl is considered an "irruptive species," sighted in New York when conditions in its northern range encourage it to fly south. Although far less common, the great-gray owl will, on occasion, migrate south to New York in winter.

Murtaugh explained that the great horned owl is our earliest breeding bird, on the nest as early as January. Most species nest later in the season, while the barn owl can nest almost year round.

According to Kitty Rusch, an environmental educator at DEC's Five Rivers, great horned owls can be found in the widest variety of habitats. In addition to finding them in woods, Rusch has seen and heard them in old fields and forest edges. Screech owls also can be found in many different habitats.

Barred owls are found near forests and waters, while short-eared owls like open, grassland settings. Cornell's All About Birds website (**www.allaboutbirds.org**) states that

Bill Banaszewski

Great horned owl

barn owls also are found in the same habitat. All About Birds notes that long-eared owls like open areas and dense tall trees or shrubs, with pine woods a preferred winter location. The northern saw-whet prefers forests.

In addition to being harbingers of spring, owls offer an inspiration to get off the couch and find enjoyment in winter weather.

Although owls are elusive, the lack of leaves and their loquaciousness helps you find them in winter. Large groups of noisy birds are another clue; many birds dislike owls. A group of crows swooping and making a ruckus—mobbing—are likely trying to drive off a great horned owl. In a video about the eastern screech-owl, Gerrit Vyn, a photographer at Cornell's Lab of Ornithology, said he found an owl when the "scolding calls" of a flock of chickadees "tipped me off to the owl's presence."

Rusch observes that, as with other excursions into nature, "You can't count on what you will see." Last year, at dusk, when I heard an owl near the house, I went out and learned this firsthand. As I walked, the owl quieted. With its exquisite hearing, it likely heard my feet on crusty snow. For about five minutes, we played audio tag: walking, silent owl; standing still, owl calling again.

When it seemed as if I was close, I looked up in the trees. Suddenly, a large bird flew off, crossed an old field and headed for the woods beyond. By this time, it was getting dark and cold, so I decided to go home and savor this magnificent, if brief, view.

If the weather is too cold, you can still enjoy owls. You can stay inside, stoke the hearth, and read about Hedwig, the owl in the Harry Potter book series.

**John Rowen** appreciates owls from his home in Guilderland.

For more information on owls, visit DEC's website **www.dec.ny.gov**.

# WHEN THE COLD WINDS BLOW-
# BE PROTECTED

## DEC's Tree Nursery Offers a Variety of Seedlings to Create Effective Windbreaks

Winter winds often cause blowing and drifting snow that can create hazardous road conditions, reduced visibility and other safety issues. Strong, cold winds may also reduce home heating efficiency, increase winter energy bills, and even impact unsheltered livestock herds.

By planting rows of trees and shrubs at right angles to prevailing winds, you can create an effective natural windbreak. Living windbreaks can improve road conditions, protect livestock, create wildlife habitat, save energy and improve aesthetics.

Courtesy Arbor Day Foundation

DEC's state tree nursery has a variety of seedling species for creating windbreaks. Spruces, pines, shrub willows, dogwoods, high bush cranberry, winged sumac, white cedar, and wetland rose—all currently available at the nursery—are great choices for a layer of winter protection against Mother Nature.

**To order these and other seedling species, visit: www.dec.ny.gov/animals/9395.html, or call (518) 587-1120.**

R. Walker

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