Watching Frogs | Teens Talk Turkey | Fighting Acid Rain

NEW YORK STATE

Conservationist

APRIL 2008

Adirondack Fly Tying

LIVING WITH BEARS

Lighting the Way

From the digital collections of the New York State Library.

Dear New Yorker:

The environmental movement was not always the force we know it to be today. There was a time when environmentalism was a fringe movement, a special interest outside of the mainstream. Thankfully, this began to change on April 20, 1970, as masses of people in communities large and small across the nation gathered to celebrate the first Earth Day, spearheading the shift towards our current ethic.

The first Earth Day celebration was the vision of Wisconsin senator Gaylord Nelson, who saw a need to galvanize a growing national grassroots movement. In 1970, Nelson launched his vision. Hoping to permanently change the way our nation thought about and treated our environment, Nelson wished to unite communities across the country.

In the weeks before the first Earth Day, several friends and I took notice of local environmental groups participating in this newly energized movement. Although impressed by their merit, we knew that their collective potential had yet to be realized. To support the burgeoning movement, we created an umbrella group called the Environmental Action Coalition. The goal of our coalition was simple: to coalesce the activities of all of these organizations to ensure that New York City's Earth Day demonstrations would not go unnoticed.

As citizens, national organizations and environmental groups contributed financially, momentum continued to build. It was obvious that people were eager for change. Our group proposed holding citywide demonstrations. Mayor John V. Lindsay enthusiastically agreed to shut down most of Fifth Avenue for a parade, which was later followed by a huge rally in Union Square.

When the day came, I was thrilled as I witnessed hundreds of thousands of citizens marching down the length of Fifth Avenue. I had never seen such a public display in defense of our environment. To me, this was a clear sign that a necessary change was taking place, one that would eventually resonate throughout the country. That summer, I was honored to be the first to sign the Earth Day Proclamation, an international document expressing commitment to environmental action and care.

Almost four decades have passed since that historic day. In the intervening years, we have seen this change in mentality manifest in real action, real policy change, and real results. The movement ushered in by Earth Day gave way to founding of the federal Environmental Protection Agency to safeguard our national resources, and invaluable laws, including the Federal Clean Air Act and Clean Water Act, which have dramatically improved the quality of our environment.

The movement also led to the creation of our own Department, as well as many other state environmental agencies. DEC's original mission statement from 1970 read: *"To conserve, improve, and protect New York's natural resources and environment, and control water, air, and land pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well being."*

Those words are as relevant today as they were when the Department was formed, but the challenges before us—from climate change to invasive species—are vastly different. We must employ new approaches to solve them.

The need to care for and respect our environment has never been more important. This Earth Day, as we celebrate how far we've come, let's also recognize the important work left to accomplish. Working together, we can continue to help make New York State an example of environmental commitment for all to follow.

Sincerely,
Commissioner Pete Grannis

NEW YORK STATE **Conservationist**

Volume 62, Number 5 | April 2008

David Paterson, Governor of New York State

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Pete Grannis, *Commissioner*
Stuart Gruskin, *Executive Deputy Commissioner*
Basil Anastassiou, *Director of Communications*
Jack McKeon, *Deputy Commissioner for Administration*
Laurel K. Remus, *Director Public Affairs & Education*
Neil Satterly, *Asst. Director Public Affairs & Education*

THE *CONSERVATIONIST* STAFF

David H. Nelson, *Editor*
Alex Hyatt, *Assistant Editor*
Eileen C. Stegemann, *Contributing Editor*
Megan Ciotti, *Business Manager*
Shannon Brescher Shea, *Staff Writer*

DIVISION OF PUBLIC AFFAIRS & EDUCATION

Robert deVilleneuve, *Production/Design Director*
Frank Herec, *Artist/Designer*
Jennifer Peyser-Olmstead, *Artist/Designer*
Jim Clayton, *Staff Photogrpaher*
Sue Shafer, *Staff Photographer*
Bernadette LaManna, *Contributing Editor*
John Razzano, *Contributing Editor*
Ellen Bidell, *Book Review Support*

EDITORIAL OFFICES

The *Conservationist* (ISSN0010-650X), © 2008 by NYSDEC, is an official publication of the New York State Department of Environmental Conservation published bimonthly at 625 Broadway, 2nd Floor, Albany, NY 12233-4502. Telephone: (518) 402-8047

Manuscripts, photographs and artwork will be accepted if accompanied by SASE. Please write to the above address with an author's query or to request a Contributor's Guide. The publisher assumes no responsibility for loss or damage of unsolicited materials.

TO SUBSCRIBE:

$12 per year, $22 for two years, $30 for three years. Outside the U.S., add $27 per year with a check drawn on a U.S. bank. All orders must be prepaid.

Please allow 6 to 8 weeks for new subscriptions or changes of address. Periodical postage paid at Albany, NY, and additional mailing offices.

POSTMASTER: Send address changes to:
Conservationist,
P.O. Box 1500
Latham, NY 12110

Send check or money order
(sorry, no credit card orders)
payable to:
Conservationist
NYSDEC
P.O. Box 1500
Latham, NY 12110
or call: **1-800-678-6399**

Visit the Department's website at:
www.dec.ny.gov

The New York State Department of Environmental Conservation does not discriminate on the basis of race, national origin, disability, age, or gender.

♻Printed on recycled paper. Please recycle this copy.

1910 advertisement for General Electric's Mazda lamp.

See Page 30

Contents

April 2008 Volume 62, Number 5

Front cover: *Black Bear* by Eric Dresser | **Back cover:** *Rainbow Trout* by Eric Engbretson

From the digital collections of the New York State Library.

Backyard BEARS

by John Adamski

A rare glimpse into the world of a wintering mother bear and her cubs

In the six years my wife and I had lived in Livingston County, we had black bears in the yard and on the deck 15 times. Other people got squirrels; we got bears. So one April, we called Department of Environmental Conservation (DEC) wildlife personnel, who live-trapped a female black bear in our backyard. Along with her two yearlings, this six-year-old sow had been raiding our bird feeders for several nights. Once trapped, she was sedated, examined, ear-tagged, fitted with a radio collar, and subsequently released.

The following March, after an intensive search using radio telemetry, the same bear was located and recovered from her winter den—along with two newborn cubs—just five miles from where she was initially captured. Under the direction of a DEC black bear specialist, the sow was once again sedated and prepared for examination. Because of our involvement in the previous year's incident, DEC officials invited us to attend and witness what proved to be a truly memorable experience.

What many people may not realize is that black bears do not truly hibernate. In fact, although they largely remain resting in their dens during the winter months, denned black bears maintain near normal body temperatures, allowing them to quickly respond to any situation. This includes reacting to biologists who visit their lair. Knowing that denned bears are generally aware of their presence, biologists are careful to quietly approach a known den site to avoid spooking the bear into fleeing. In most situations, the bear will remain in place. Not so during our visit.

Holed up in a largely open den, our bear, as we'd come to think of her, decided she'd rather be somewhere else. As DEC biologist Lou Berchielli crawled into the den with his tranquilizing prod, he sensed she was about to bolt out the other side. Prepared for this, Berchielli backed out and a wildlife technician quickly darted her. Once she was sedated, Berchielli reentered the den to retrieve the cubs.

From the digital collections of the New York State Library.

Wildlife biologists replacing a GPS telemetry collar on a black bear sow.

The den itself was a cozy site excavated into the side of a shallow ravine beneath the mound of a slightly uprooted maple tree. Its entrance was hidden from view by limbs and branches left from an earlier logging operation. Without the signal from the bear's collar, it is unlikely that we would have found her den.

When previously examined in our backyard, this bear weighed 175 pounds; now she tipped the scales at 215 pounds. This added weight would sustain her through her long ordeal with new cubs, especially given that bears do not eat while denned, surviving instead on stored body fat.

Things are just the opposite with cubs. When born in mid to late January, naked and blind, they weigh just nine ounces, about the size of a small gray squirrel. At approximately six weeks of age, these cubs were doing well. The female cub weighed 6 pounds 4 ounces, and the male cub weighed an even 7 pounds—quite a testimony to the nutrition of mother's milk. By April or May, when they emerge from their dens, the cubs weigh about ten pounds. Before they den again next fall, these cubs will approach 100 pounds each.

While the mother bear dozed and unknowingly underwent her examination, the cubs reluctantly posed for pictures with DEC personnel and onlookers including my wife and me, who had the good fortune to be in attendance. Of course, the cubs were the center of attention. They complained about their interrupted feeding schedule with loud squeals that only hungry cubs can make. At six weeks of age, they already had sharp claws that would soon be used whenever mother ordered them up a tree to safety.

A Word on Bear Populations

DEC uses a variety of indices to measure bear populations. Taxidermists and DEC wildlife personnel collect age and sex information from harvested bears and movement data from tagged bears. Biologists use this information, along with data from bear-human conflicts, to determine whether bear populations are increasing or decreasing, and if bears are expanding their range.

Hunting is an important management tool used to control bear numbers. DEC recently announced that bear harvest numbers increased in 2007, with hunters taking 1,117 black bears. Statewide, bear harvest has increased over the last two decades in correlation with a rise in the bear population. In the past few years, DEC changed season dates and opened additional areas to hunting in the Allegany and Catskill bear ranges. These changes were done in response to public input and were intended to limit bear-population growth and dispersal into new areas.

Toward the end of her examination, the sow began showing signs that the sedation was wearing off. After we repaired and refitted her collar and replaced a lost ear tag, we returned the sow and her cubs to the den, to continue the nurturing process.

These cubs were likely the sow's second litter. The area's rich habitat enables female bears to produce their first litter at three years of age and another litter every other year thereafter.

Wildlife staffers Art Kirsch and Greg Fuerst are at the forefront of western New York's bear projects. They are currently monitoring several bears, using radio telemetry and reports from people who see bears. A successful den visit makes Fuerst beam like a proud father. When he revisited the den a week later, the sow was nursing her cubs in the sunshine outside the den's entrance—a good indication that they were unruffled by their experience the week before.

...as bear populations expand, there is an increased chance of human-bear encounters.

Since 1994, regional staff have monitored more than 50 bears using radio telemetry. Biologists collect data on litter size, breeding age, survival and body weight. Beginning in 2002, DEC began using GPS satellite telemetry, enabling researchers to map home ranges with tremendous accuracy. They discovered that home ranges for adult female bears in western New York approach five times the size of bear home ranges found in the Adirondacks.

In the past decade, bear populations have expanded north from the Appalachians and western Finger Lakes into the Lake Ontario plain. However, major highways, high human populations and intense agriculture in this area may limit the growth of bear populations in the future. Lake Ontario is a barrier, quips Fuerst, who currently monitors four bears within sight of the Rochester.

With more bears entering populated areas, the biggest concern shared by Kirsch and Fuerst is the interaction between bears and people. Ordinarily very shy and secretive, black bears generally try to avoid people. However, as bear populations expand, there is an increased chance of human-bear encounters.

Black bear activity is most noticeable in early spring when they emerge from their dens. After four or five months of fasting, finding food is their primary concern. Though they are New York's largest carnivore, surprisingly, black bears have a primarily vegetarian diet. Initially they'll graze, like cattle, to gently awaken dormant digestive systems, concentrating on succulent plants like skunk cabbage. Later they'll eat anything from honey to road kill. Opportunists, they will eat whatever is readily available, including human and pet foods. Sunflower seeds, especially the black oil variety, are high on their list of preferred foods and attract bears to backyard bird feeders.

If you have a bear visit your backyard, it's important to remember that they are wild animals, and although black bears are generally not aggressive, a sow with cubs can be unpredictable. Feeding bears—intentionally or otherwise—increases the potential for damage, injury or the necessity to destroy a bear. In the words of Greg Fuerst, "A fed bear is a dead bear." He notes that "after April 1st, bird feeders become bear feeders and should be taken down if bears are around." Of course, we had already discovered this the hard way.

I'll always remember my outing with DEC's bear biologists to track and study "our bear" and her cubs. It gave me a rare glimpse into a world few are privileged to see. Particularly noteworthy to me was the obvious dedication of these people, who are on the go at times 20 hours a day, seven days a week. They investigate every report of a bear sighting or bear damage and encourage people to report any such activity. However, Greg Fuerst does advise with a twinkle, "Please don't call me at home before five A.M.," to which his wife, Vicki, responds, "Thank you!"

Note: Visit DEC's website at www.dec.ny.gov/animals/6960.html to learn more about black bears in New York.

A former director of fish and wildlife management at Whitney Park, **John Adamski** is a freelance writer and wildlife photographer. His work has appeared in several regional magazines. This is his first *Conservationist* article. John is dedicating this article to his wife, Barbara, who passed away shortly after this outing.

Barbara Adamski

From the digital collections of the New York State Library.

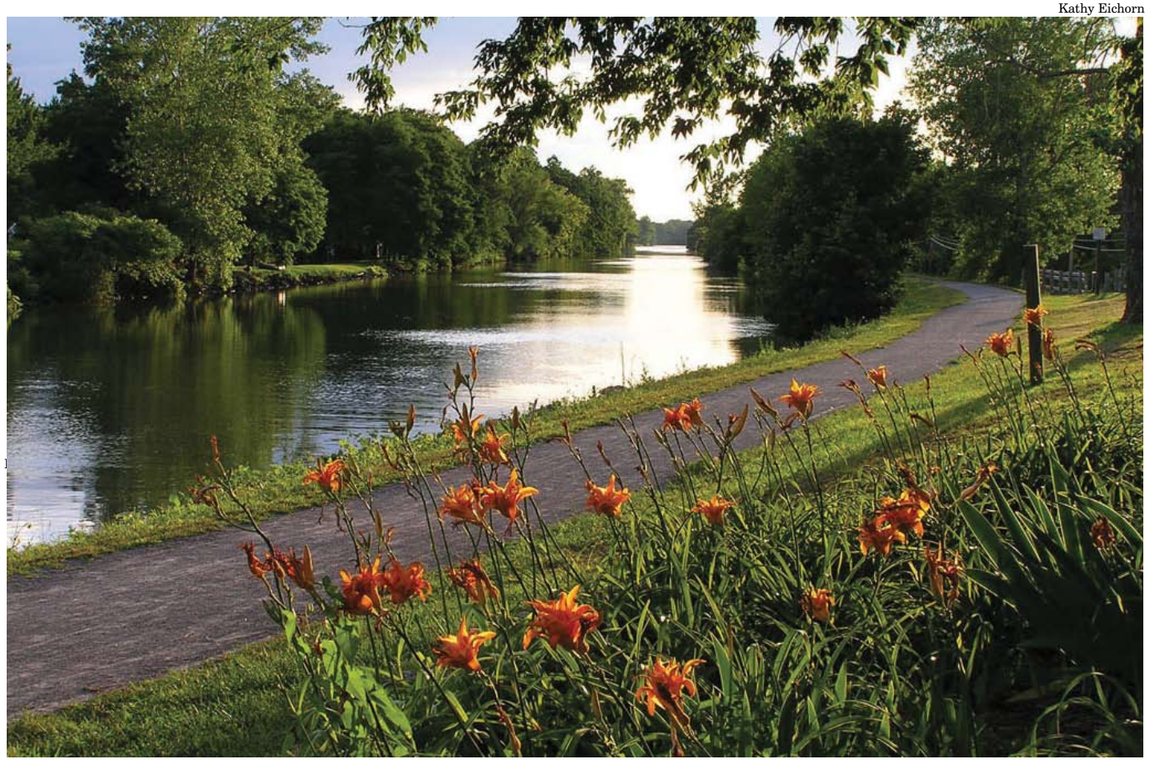
Follow in History's Wake

Discover the Erie Canalway National Heritage Corridor

By Jean Mackay

Whether you explore 15 miles or 500, the Erie Canalway National Heritage Corridor connects history and nature with outdoor pursuits from boating to biking to birding. Here, we'll introduce you to some of its treasures, through images by amateur photographers from across the state who were among the winners of the 2007 Erie Canalway Photo Contest.

Kathy Eichorn



Erie Canalway Trail, Spencerport. Walking the Erie Canalway Trail offers glimpses of what walking across the state with a canal boat in tow might have been like. The trail is open to hikers, joggers, and bicyclists, as well as cross-country skiers in winter.

Terry Potoczny

Lock 33, Minden. Dug by muscle and sweat, and later enlarged with machinery, the Erie Canal and the growth it attracted fundamentally altered the landscapes of New York. Yet nature is reclaiming abandoned sections of the original canal. Columbines and ferns grow from stone lock walls, while canal wetlands provide excellent habitat for songbirds, dragonflies and amphibians.

Paul Blue

Erie Canal, Little Falls. The Mohawk Valley is one of the most picturesque sections of the canal. Maintaining high water quality all along the corridor is key to a vibrant future for the region, where water resources are shared by many users. The river supports people and agriculture and is also the basis for recreation, tourism, and sport fishing, while also providing valuable habitat for aquatic plants and animals.

Joe Carey

Kayakers, Pittsford. What better way to explore the NYS Canal System than on the water itself? On-water activities include cruising, rowing, canoeing, kayaking, motorboating, and fishing. The New York State Canal Corporation operates the canal from early May to early November.

From the digital collections of the New York State Library.

Paul Blue

Nine Mile Creek Aqueduct, Camillus. New York's canal system was a nationally and internationally significant work of engineering. Eighteen aqueducts, including this one over Nine Mile Creek in Camillus, carried the canal over rivers and ravines. These and other canal relicts, including old locks and bridges, are part of the allure of a visit to the Canalway Corridor.

Deborah Otis

Rome. Cyclists can explore the Canalway Corridor for a few hours or several days on the 380-mile Erie Canalway Trail which follows both active and historic sections of the Erie Canal. Trail maps are available from the NYS Canal Corporation and a more detailed cycling guide is published by Parks & Trails New York. PTNY also hosts an eight-day, 400-mile bicycle tour from Buffalo to Albany each July. Visit **www.ptny.org** for more information.

Call For Entries

The Erie Canalway National Heritage Corridor invites amateur and professional photographers to participate in its 2008 Erie Canalway Photo Contest. Prints and digital images are accepted and winning entries will appear in the Erie Canalway 2009 Calendar. Deadline for entries is September 15, 2008. Details are posted online at: **www.eriecanal.gov**

Bart Carrig

Great Egret, Little Falls. The quiet waters of today's canal are perfect places for birders to explore, offering premier birdwatching sites for wading birds, waterfowl, and songbirds.

The Erie Canalway National Heritage Corridor—

connecting history and nature with outdoor pursuits.

Map courtesy of the Erie Canalway National Heritage Corridor

The Erie Canalway National Heritage Corridor

In 2000, the U.S. Congress recognized the Erie Canal's significance to our nation by establishing the Erie Canalway National Heritage Corridor. The corridor, one of 37 national heritage areas, stretches 524 miles across upstate New York, from Buffalo to Albany and north along the Champlain Canal to Whitehall. Charged with interpreting, preserving, and celebrating our nation's heritage for the benefit of today's residents and future generations, it threads through 234 diverse communities connected by a waterway that changed the landscape of our state, our nation and history.

Connect to Nature

The New York State Thruway (I-90) roughly parallels the Erie Canalway route from Albany to Buffalo, while the I-87 Northway provides access from Albany to Whitehall. Yet, the best way to explore the Canalway Corridor by car is along state and county roads that hug the water more closely and thread through the hamlets, villages, and cities that grew along these waterways:

- NY Rt. 31 in western New York
- NY Rt. 5 and 5S; Mohawk Valley
- NY Rt. 57 along the Oswego Canal
- NY Rt. 4 along the Champlain Canal

For boating information, maps and information about the Erie Canalway Trail, and tourism resources:

- Erie Canalway National Heritage Corridor: **www.eriecanal.gov**
- NYS Canal Corporation: **www.nyscanals.gov**
- Parks & Trails New York: **www.ptny.org**
- I Love NY: **www.iloveny.com**

From the digital collections of the New York State Library.

The Erie Canal put New York on the map as the Empire State—a leader in population, industry, and economic strength.

Historic photos courtesy of New York State Archives

Completed in 1825, the original Erie Canal traversed 363 miles from Albany to Buffalo, the longest artificial waterway and the greatest public works project in North America. The canal put New York on the map as the Empire State—the leader in population, industry, and economic strength. It transformed New York City into the nation's principal seaport and opened the interior of North America to settlement.

Fueled by its success, the canal was enlarged beginning in 1835. As a result, the canal could accommodate heavier loads. Originally 4 feet deep and 40 feet wide canal was expanded to 7 feet deep and 70 feet wide.

In 1903, the NYS Barge Canal System upgraded the Erie, along with the Champlain, Oswego, and Cayuga-Seneca canals, with some significant differences in routing and technology. Built for self-propelled vessels rather than horse- or mule-drawn boats, the barge canal enlarged land-cut sections in the western portion of the state, while moving the eastern portion of the canal to the "canalized" Mohawk and Hudson rivers. Today the Erie, Champlain, Oswego, and Cayuga-Seneca canals remain in service as America's oldest continuously operating canal system.

For further reading, see *Conservationist* February 2003.

Jean Mackay is director of communications and outreach for the Erie Canalway National Heritage Corridor.

Historic photos courtesy of New York State Archives

Historic photos courtesy of New York State Archives

Bloodroot *Sanguinaria canadensis*

by Barbara Nuffer

The white blossom of the bloodroot is one of the first flowers to greet us when we walk in the woods in early spring. Bloodroot is a native wildflower that blooms in mid-April in New York's rich, acidic woodlands. As it emerges through the forest's leaf litter, the single flower stem is surrounded by the developing leaf.

This beautiful flower has 8 to 12 white petals with a bright yellow center and can measure up to two inches across.

Unfortunately, the flower is very short-lived, lasting for several days at most. However, rainy weather can cause the petals to drop off in a single day. Like other ephemeral wildflowers, bloodroot blooms, attracts pollinators, and sets its seed before the deciduous trees have leafed out. By late spring, bloodroot plants are dormant and disappear entirely until the following spring.

***The men would apply the red juice** to their palms and shake hands with the woman they wanted to marry.*

The seed is produced in an oblong seed pod that ripens in late spring. The pod opens up and the seeds spring out below the plant. The fleshy coating surrounding the seed attracts ants, which carry the seeds into their nest to feed their larvae. The seeds germinate in the nutrient-rich debris of the ant nest. This process serves to disperse the seeds away from the mother plant.

Bloodroot is a member of the poppy family. Like all poppies, the rhizome (a horizontal underground stem) contains powerful and potentially dangerous compounds. The rhizome produces a red juice that was used by Native Americans as a body paint and dye. Native Americans also used bloodroot as a treatment for various ailments, ranging from fevers and bronchitis to warts. It

was valued as a love charm by the bachelors of Nebraska's Ponca tribe. The men would apply the red juice to their palms and shake hands with the woman they wanted to marry. According to legend, the girl would be a willing partner within a week.

There is a beautiful garden selection of this native plant, known as the double bloodroot. It blooms a few days later than the single-flowered bloodroot and the flowers last about twice as long. Although expensive and hard to find, these plants are very long-lived and can be divided every three to four years.

The bloodroot's solitary leaf bud emerging from the ground is distinctively shaped and serves as your first hint that the flower will soon make an appearance. Remember, you must be vigilant to spot this plant in flower. So be sure to mark its appearance in mid-April on your calendar if you want to share in the beauty of this fleeting wildflower.

Wildflower enthusiast **Barbara Nuffer** works in DEC's Division of Air Resources in Albany.

From the digital collections of the New York State Library.

Lake Colden, Adirondack Park

© Carl Heilman II

Acid Rain, Rain Go Away:

Some Adirondack lakes are showing promising signs of recovery

By Shannon Brescher Shea

From the digital collections of the New York State Library.

Writers and artists have long celebrated the vibrant beauty of the Adirondacks. Its majestic mountains, stately forests, and pristine waters have been the subject of countless books, poems and paintings.

In the recent past, however, acid precipitation has dimmed that radiance, leading to damaged forests and depleted lakes. Thankfully, this trend is shifting. Both the federal government and New York State's actions have resulted in a decrease in the pollutants that cause acid rain. Consequently, its drastic impact on the region is now diminishing, and the Adirondacks' ecosystems are showing promising signs of recovery.

While acid rain is familiar, acid precipitation and deposition comes in many forms, including rain, snow, sleet, hail, fog, and as deposits of particles and gases. A byproduct of our industrialized society, it is formed when sulfur dioxide (SO_2), nitrogen oxides (NO_x), and ammonia (NH_3) combine with moisture in the atmosphere to produce sulfuric and nitric acid. Emissions from coal-fired power plants, vehicles and factories are the major sources of these pollutants. However, wind patterns often blow many of these pollutants far from their origins. For example, emissions from the Midwest's heavy industries, after combining with precipitation, eventually fall as acid rain in New York State.

Just as adding the wrong ingredient to a baking recipe can spoil a cake, adding acid to a natural environment can destroy its balanced chemistry. Changes in the acidity of water or soil interfere with resident species' natural processes. As many fish are sensitive to changes in acidity, lakes suffering from acidification exhibit declines in fish species and populations. Many native fish, such as brook trout, have experienced reduced natural reproduction, decreased abundance and even total elimination in certain waters. If your fishing catch in the Adirondacks seems meager compared to the legendary catches of previous generations, acid rain may be partly responsible.

Beyond their effects on living creatures, acids also react with other dangerous chemicals, resulting in indirect harm to species. High acidity reacts with some natural substances, such as aluminum, in a way that "frees" their toxic forms into natural systems. Pollutants carried in acid rain both deposit mercury in ecosystems and amplify its effects. For instance, when surface water becomes acidic and mercury continues to be deposited, fish accumulate mercury faster. This chemical build-up makes the fish unsafe for humans, particularly women and children, to eat in substantial quantities. In New York State, 84 water bodies have fish consumption advisories because of mercury pollution.

Among New York State's distinctive natural resources, the Adirondack region has suffered the most from acid rain. Whereas many areas have limestone deposits or soils that neutralize the acid, the Adirondacks have a low buffering capacity. As such, the Adirondacks are an indicator of acid rain's most drastic effects, acting as the nation's proverbial "canary in a coal mine."

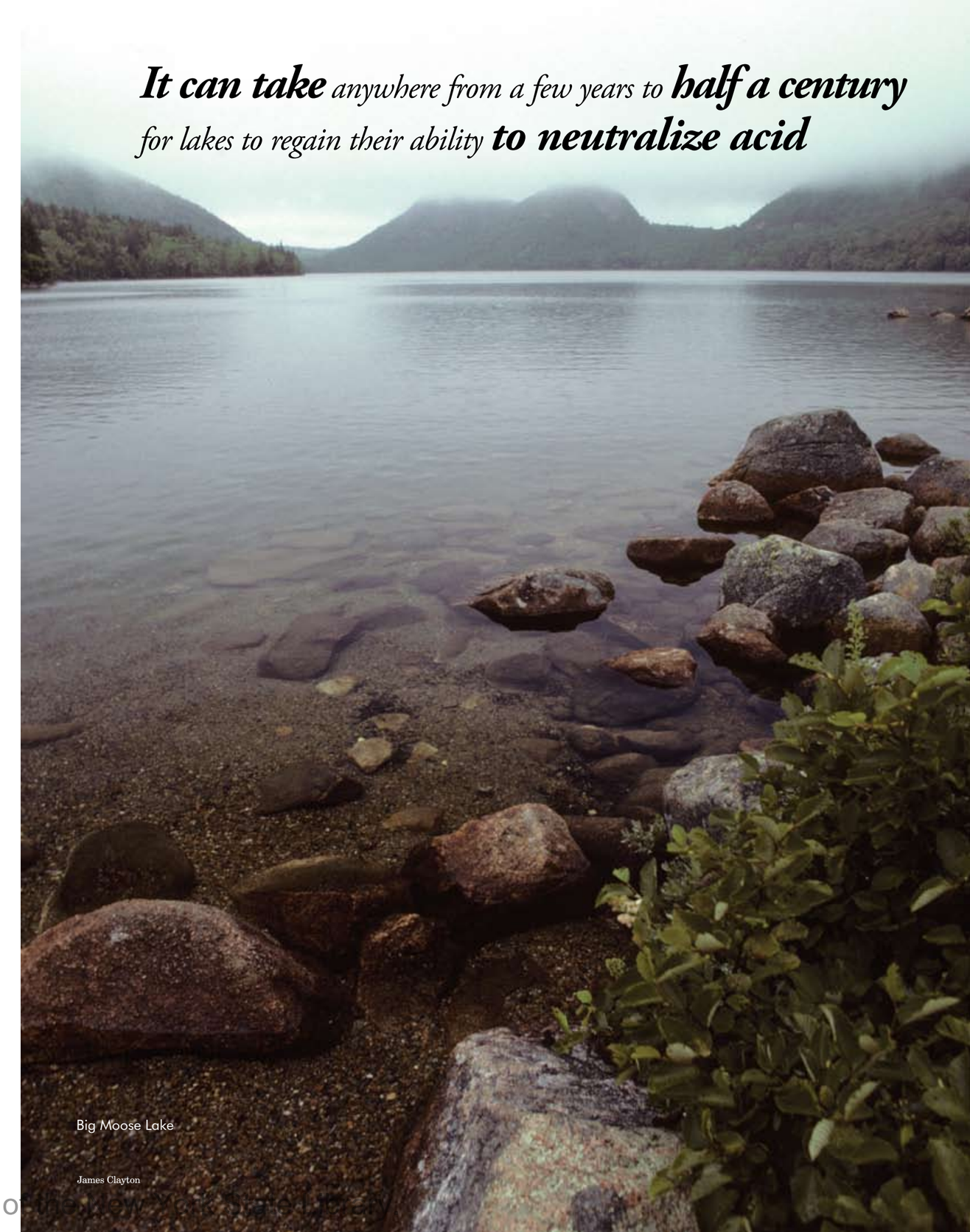
Although acid rain has stressed Adirondack forests as a whole, two species have experienced particularly heavy losses: red spruce and sugar maple. In high altitudes, the red spruce is often surrounded by acidic clouds, which some researchers believe may lead to increased winter injury. In the 1970s and 1980s, 50 percent of canopy red spruce trees in the High Peaks and other high elevation regions died or were damaged. Likewise, sugar maple, the basis for the maple syrup industry, suffered die-offs in the 1980s. While the soil acidity has begun to decline, these damaged forests stand testament to acid rain's destructive power.

Acid Rain & Greenhouse Gas

Although acid precipitation and greenhouse gases may result from the same pollutant sources, such as cars, power plants, and factories, they involve different atmospheric levels and natural processes. Acid precipitation forms in the lower levels of the atmosphere when sulfur dioxide and nitrogen oxides combine with moisture. The resulting acid precipitation then falls to the ground, changing the water and soil chemistry in a specific area. Greenhouse gases, such as carbon dioxide, are direct by-products of industrialization and collect at a much higher point in the atmosphere. There, they hold heat in, intensifying the earth's greenhouse effect. This interaction causes the earth's climate to warm more than it would otherwise, influencing worldwide temperatures and precipitation patterns.

From the digital collections of

It can take** anywhere from a few years to **half a century** for lakes to regain their ability **to neutralize acid



Big Moose Lake

James Clayton

Learning about acid rain

DEC scientists use pH testing to measure the acidity of a stream, lake or area of soil. Through this assessment, they determine how much acid rain has affected an area.

pH is a chemical indicator that measures how many hydrogen ions (H+) are present in a solution. The pH scale runs from 0 to 14, with 0 being the most acidic and 14 being the most basic. While pure water has a neutral pH of 7 and unpolluted rainwater has a pH of 5.6, unpolluted water bodies usually range in pH between 6 and 8.

Although scientists use a more accurate probe and meter, students of all ages can use inexpensive litmus strips to test pH. Litmus paper is specially formulated to change color when dipped in liquid. By comparing the color to a chart included in the packaging, you can determine the liquid's acidity.

When experimenting with litmus strips, try dipping them in a number of different substances. Even household goods have a range of pH levels, from lemon juice at a pH of 3 to baking soda at a pH of 9. Once you have tried testing some common products, bring the litmus strips outside and test the pH of different types of water. Distilled, tap, rain and stream water should all vary in their acidity.

Litmus paper is available from a number of sources, both online and in stores. Many classroom suppliers sell pH strips within kits for exploring acids and bases. Also, pH strips are often included in swimming pool testing kits sold at hardware stores.

No matter what you choose to test, measuring pH is a fun, hands-on way to learn about acidity in the natural world.

Acid rain has also ravaged Adirondack lakes. Normally, lakes can neutralize incoming acid to levels that fish can tolerate. But in the Adirondacks, 26 percent of lakes cannot lower their acidity to a tolerable level and 70 percent have the potential to become too acidic at certain times of the year. Also, 16 out of 48 Adirondack lakes that scientists surveyed have aluminum levels too high for many juvenile fish. Even if adult fish can live in these lakes, the populations cannot sustain themselves if the juveniles do not survive.

In 1984, taking notice of the Adirondack and Catskill mountains' sensitivity to acid rain, New York State passed the first law in the nation to control these emissions, the State Acid Deposition Control Act. As a result of New York's advocacy, Congress amended the Clean Air Act in 1990 to require nationwide controls on SO_2 and NO_x. As a result of these laws, national SO_2 emissions levels peaked in 1973 and have continued to decline. Likewise, NO_x emissions were at their highest in 1990 and have declined since.

*The areas that were **sensitive to acidity** are resurging, suggesting that the whole region may* **undergo revitalization.**

Implementation of air pollution laws have lightened the burden on Adirondack lakes, which have started to show signs of recovery. Over the last 20 years, both the lakes and atmosphere have become far less acidic. The areas that were sensitive to acidity are resurging, suggesting that the whole region may undergo revitalization. The lakes are gaining back their ability to neutralize acid and the toxic aluminum is reverting back to forms which are less dangerous.

However, the policy work on acid rain is far from over. Lakes that are only seasonally acidic it can take anywhere from a few years to up to half a century to regain their ability to neutralize acid. Lakes that are acidic year-round may take even longer, from 25 to 100 years to recover. Once a lake has chemically recovered, it will then take additional time for the wildlife to return. For instance, some fish populations may recuperate within a decade of full chemical recovery, or even faster if they are restocked.

New York State continues to be a leader in fighting the pollutants that lead to acid rain. The Acid Deposition Reduction Program began in 2004, aiming to reduce emissions from fossil-fuel power plants. A cap and trade program, it distributes a certain number of pollutant "allowances" to electric generation companies in the state. The companies can then trade these allowances between them like money. This system allows the power plants with the best technology to improve their facilities first. As the program continues, the state will distribute fewer allowances over time, further reducing emissions.

This cap and trade program, combined with litigation against electric generators, has produced significant results in New York. In 2007, statewide SO_2 emissions were down to one-third of those in 2003, an 80 percent decrease since 1990. This decrease of 35,000 tons per year of SO_x is equivalent to eliminating all of the emissions caused by New Yorkers who use oil to heat their homes. Similarly, NO_x emissions in 2006 are down almost 50 percent since 2003. This yearly reduction of 6,000 tons of NO_x equals taking 300,000 cars off of the roads each year.

Inspired by New York and other leading states, the federal government has further raised their own standards. The Clean Air Interstate Rule was adopted in 2005 and applies to all states east of the Rocky Mountains. It uses a similar cap and trade structure, but will catch up with the state standards in 2009 and exceed them in the future.

Susan L. Shafer

Eaton Lake, Essex County

Despite the vast progress, experts say that we need further reductions to allow ecosystems to recover. "What we've done matters. But we still need to do more," said Rob Sliwinski, Director of Air Quality Planning in the Division of Air Resources in the Department for Environmental Conservation.

Citizens can help continue the recovery by taking some basic steps. Since power plants emit many of the pollutants that contribute to acid rain, conserving electricity is essential. "Pollution prevention is easier than pollution control," said Sliwinski. Also, cars are a major producer of the emissions that lead to acid rain. Reducing your mileage, regularly tuning-up your automobile, and buying cars with strict pollution controls will further reduce your personal impact.

Despite acid rain's past decimation of some of New York's forests and lakes, the data on declining pollution provides an optimistic outlook. For anyone who loves the Adirondack Park, these numbers should be both a cause for celebration and a motivation to continue our protection of this unique region.

Shannon Brescher Shea is a staff writer for *Conservationist* and a graduate of Cornell University's Natural Resources/ Communication programs.

NOTE: Much of the scientific data in this article was drawn from Karen Roy (NYSDEC) and Charles Driscoll's (Syracuse University) research. Together with Jerry Jenkins (Wildlife Conservation Society) and Christopher Buerkett (Adirondack Lakes Survey Corporation), they have written *Acid Rain in the Adirondacks: An Environmental History*, published in 2007 by Cornell University Press. The most recent results and scientific findings are available at: **www.adirondacklakessurvey.org.**

Saving Adirondack Fisheries

Acid deposition caused many Adirondack lakes and ponds to become fishless. To combat this problem and reestablish native brook trout populations in some of these decimated waters, NYSDEC Bureau of Fisheries started a liming program. Beginning in 1959, DEC began to apply agricultural lime to certain ponds to raise their pH. Typically used to enhance farm soil, agricultural lime temporarily improves the water's ability to buffer acid deposition, raising the pH to a level that fish can tolerate. Today's liming program includes 37 waters across the Adirondacks. Each year, researchers take water samples from the ponds to monitor their pH and acid-neutralizing capacity (ANC). If a pond's water has a pH below 6 and an ANC below 20, it is scheduled for a liming treatment. Treatments, which last between 5 and 15 years, are often done in the winter by spreading lime across the pond's frozen surface. These treatments are only a stop-gap measure while we work to limit acid precipitation. However, without liming, these waters would remain fishless. Liming also benefits a wide range of native fauna and flora, including many sensitive species such as loons and otters.

Susan L. Shafer

From the digital collections of the New York State Library.

tying locally

Story and photos by Michael Zeugin

Most of us Adirondack aficionados feel we are environmentally and economically up-to-date. We know what buying locally means, even if we don't always find it possible. We wait for berries not flown in from Chile. We stock up on locally grown produce at the farm stand down the road. We buy a Hornbeck or Placid Boatworks canoe, rather than an Old Town or Mad River. And we eat lots of apples in the fall.

Bored with tying the same old patterns...I started tying flies with scavenged remains from *right here in the Adirondacks.*

While I'm not fanatical about the buy locally concept, I do try to use products made close to home; it just seems right. So, recently I transferred this buy locally concept into my fishing life and began tying locally. No, this doesn't mean I'm standing out in the Ausable with one of those match-the-hatch portable, chest-mounted, fly tying kits (yes, there is such a thing). Nor am I sitting in the family cabin finishing a copy of Fran Better's famous Ausable Wulff. But you might find me out in the woods, one hand pinching my nose, the other plucking some tufts of hair from a skunk carcass or picking a feather out of the grass in South Meadow.

Bored with tying the same old patterns from feathers plucked from a capon in Singapore, I started tying flies with scavenged stuff from right here in the Adirondacks. Why? Because it's fun, creative, thrifty, and although I haven't yet proved tying locally lands more and bigger fish, it sure adds a wallop of satisfaction to anything you catch. There's a sort of circular, Native American ethos to this pursuit.

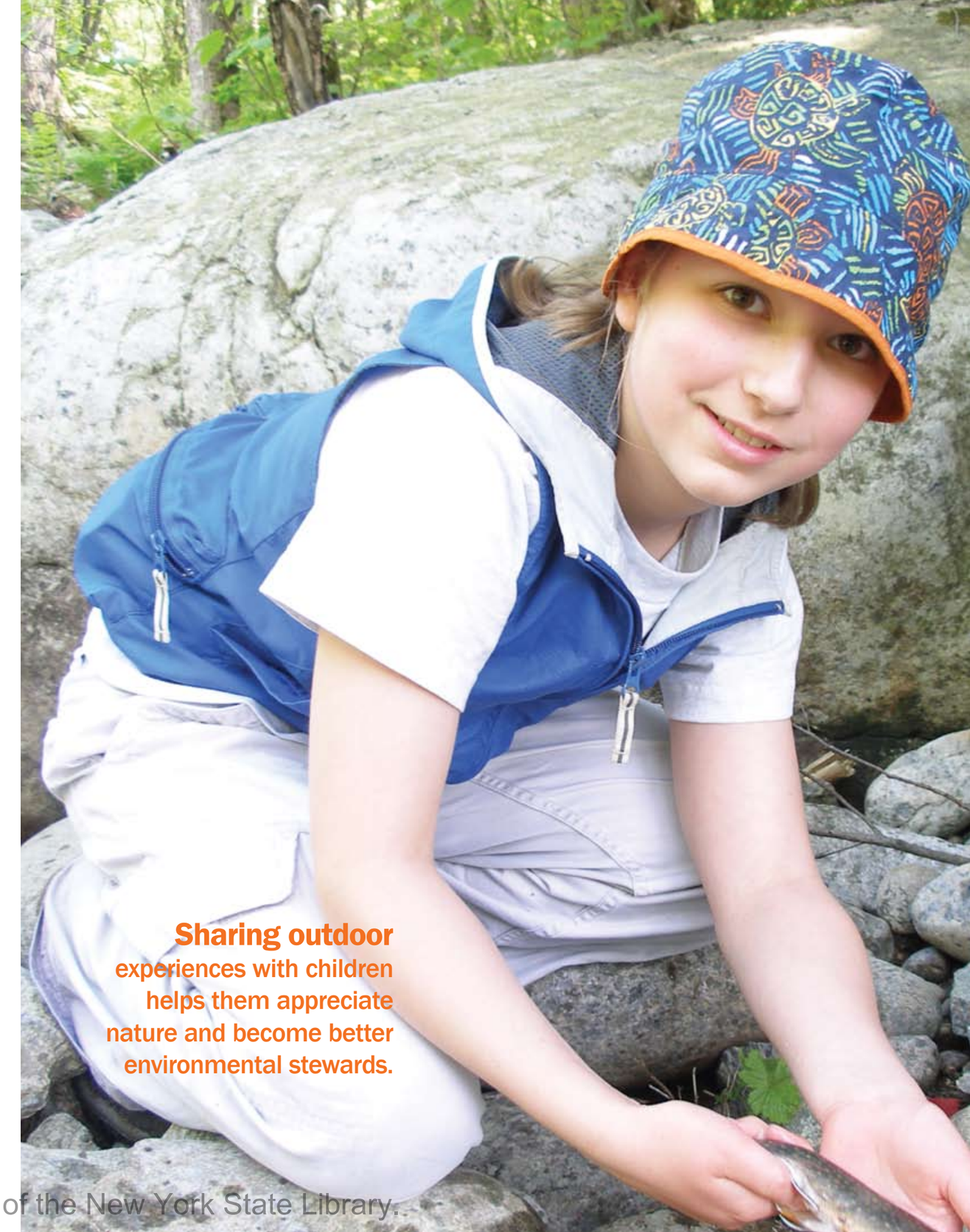
Besides, when my daughter joined me in the outdoors, feathers, hair and other animal flotsam normally examined, enjoyed, and left behind, suddenly ended up coming home with us. It is nearly impossible to say no to a kid collecting things she sees as treasures, especially when you know they will resurface years later during bittersweet clean-ups.

One day, while on my new fly-tying kick, copying quirky Irish and British patterns (one can only stomach tying so many of the standard Royal Coachmen), I spotted some grouse feathers we'd collected at the bottom of the Cooper Kiln Pond trail off Bonnie View Road. "Let's use some Adirondack grouse feathers," I said to my daughter, "instead of this woodcock." "Oh, cool," she said, "I've got some too."

She darted out of the kitchen, where I had bolted the vise to my place at the table, but came back with some grouse and turkey feathers she'd collected on hikes. "I want to use these when I start tying flies," she said, holding them in front of me. "But, I'll let you use a piece or two now, and I'll watch." Tying locally takes on a whole new meaning when your 10-year-old daughter wants to watch, keep you company and ask questions.

A few imported peacock feathers for a tail, rose-pink body-dubbing from a shop in Wilmington (scavenging of a different kind), followed by tinsel from Massachusetts, and then the rust brown Adirondack grouse feathers for wings, finished with some darker grouse on the throat. Suddenly my British Woodcock and Pink pattern had turned distinctly American—Adirondack.

Soon we whipped up a few samples. "We're not matching naturally occurring insects here," I explained. "Fly tying can also be creative."



Sharing outdoor experiences with children helps them appreciate nature and become better environmental stewards.

From the digital collections of the New York State Library.

Beautiful turkey feathers will become wings of a different kind.

Hair from a black bear snagged in a twig becomes part of a "local fly."

Grouse and Pink, a local modification of the British Woodcock and Pink pattern.

As I explained the concept of attractor flies—things a fish thinks look good to eat, or maybe just good to kill—I trimmed some blue-grey grouse feathers, and looped the nylon thread around them once, twice, three times.

"I need some darker feathers for the throat," I muttered, squinting more than I used to. As I wound on some grey mohair from Massachusetts, she handed me a charcoal grouse feather, with a tan stripe running through it. "That looks nice," she said. "Make me one to use when I go fly fishing, please." As would any father, I complied.

When I handed the finished fly to her, she held it in her yet uncalloused hand as if it were a finely polished gem of inestimable value. My heart swelled.

"It's perfect," she said.

"Wait until you catch a fish with it," I added, starting another.

Then I pondered if, or how, I might use that precious tuft of black bear hair she discovered snagged in a snapped twig, a memento of one of our early backcountry ski trips when she was only six. A Black Gnat Wulff, perhaps?

Michael Zeugin teaches English and writing at Rutgers University. In the winter, he teaches snow sports at Whiteface Mountain and spends summers exploring New York's outdoors.

Editor's note: Even if found in the wild, it is illegal to possess most feathers without a permit. Also, although you may use legally acquired game bird and waterfowl feathers, it is illegal to sell them. Good luck tying locally!

Connect to Nature

New York State Fly-Fishing Locations

Even if tying your own flies from found materials seems a little intimidating, there are still great opportunities for exploring the joys of fly fishing in New York State. In particular, New York's water bodies offer great opportunities for catching both wild and stocked trout and salmon. Listed here are a number of notable areas for fly fishing in the state.

However, do not feel limited by these traditional fly-fishing sites. Anywhere with a substantial fish population and wadable water can be a fly-fishing location. Some anglers in the Adirondacks even fish from float tubes and lightweight canoes! A willingness to explore and catch a variety of species can lead to a fishing experience like no other.

Lake Erie tributaries: Cattaraugus, Eighteen Mile, Canadaway, Chautauqua, Buffalo, Cazenovia, Cayuga, Silver, and Walnut creeks; steelhead (rainbow trout)

DEC stocks about 270,000 steelhead yearlings in Lake Erie tributaries annually, adding to the naturally reproducing population. As a result, this area has an excellent steelhead fishery.

Wiscoy Creek (Allegany and Wyoming Counties); wild brown trout

Anglers consider Wiscoy Creek one of the state's premier wild brown trout streams. Last year, biologists found an average of 1,433 adult wild brown trout per mile of stream. Special regulations on the Wiscoy limit anglers to a three-fish daily limit, 10-inch minimum length, and catch-and-release only from October 16 to March 31.

Lake Ontario tributaries: Eighteen Mile Creek, Oak Orchard Creek, South Sandy Creek, Salmon River and many smaller tributaries; steelhead and salmon

These areas are known for their tremendous fish populations. DEC annually stocks about 1.8 million Chinook salmon fingerlings in Lake Ontario tributaries, and a spawning run occurs from September to November. Oak Orchard Creek is particularly notable in that it does not freeze, making it accessible even in winter.

Lake Champlain tributaries: Ausable River, Saranac River; landlocked salmon

Although once locally extinct, restocking and restoration efforts have returned landlocked salmon to our waters. When the water is high or discolored, or when the salmon are active in the fast water at the head of pools, anglers find smelt imitations are the most effective. In contrast, fishing with wet flies and nymphs may be most successful in a low, clear river.

West Canada Creek (near Utica); brown and brook trout

West Canada Creek is one of the best brown trout streams in central New York and provides a variety of species for fishermen to pursue along its entire length. Although DEC stocks this creek, anglers can find natural trout populations at the mouths of smaller tributaries.

Adirondack lakes and ponds; brook trout

Fly fishing many Adirondack lakes and ponds is a special challenge, as anglers may have to hike or canoe to their desired location. Many of the most treasured waterbodies are remote and the people who frequent them are reluctant to share their locations. However, the lakes and ponds that DEC has recently stocked are good bets for excellent fly fishing. The DEC website (http://www.dec.ny.gov/outdoor/7739.html) lists lakes that the fisheries staff has recently stocked.

Esopus Creek (Catskills); brown and rainbow trout

Esopus Creek is fairly accessible compared to other waterbodies in the Catskill region and is a very productive wild trout stream. However, this stream can be challenging to wade in and is often cloudy from the local soil's red clay deposits.

Beaverkill (Catskills); brown and rainbow trout

Many people consider this area the birthplace of fly fishing in America. The Beaverkill and Willowemoc Rivers, considered two of the best trout streams in the Northeast, meet at Junction Pool. This area has become famous for its abundance of riffles and pools, although parts of this section can be dangerous for the less sure-footed.

For more information on fishing opportunities in New York, check the DEC fishing website at: www.dec.ny.gov/outdoor/fishing.html.

Our ideal "secret location" for fly fishing.

From the digital collections of the New York State Library.

STOP PESTering me!

How to keep **unwelcome plants, animals and other living things** *out of homes and backyards* **while protecting the environment.**

by Mary Roy

Insects, weeds, mice and mold.

Most of us prefer that these not be part of our homes, yards and gardens. We react to them as pests to get rid of quickly. A fresh understanding of how to manage these living things in and around our homes can improve pest management and help shed traditional pest perceptions.

The United States Environmental Protection Agency (EPA) generally defines *pest* as any undesirable insect, rodent, nematode (roundworm), fungus or weed. However, these aren't pests in every residential situation. Homeowners decide when living things become pests that need to be controlled, and how to control them.

Know your pest. To make an informed decision of how and when to manage a pest, the first step is to identify the specific pest involved. If you need assistance with identification, consult internet resources and local cooperative extension services.

It is also important to learn why the pest is thriving in the home, yard or garden. Observe where the pest appears, how often, and in what numbers. Look for clues about features that attract and support infestation, such as available shelter, food and water. These clues point to effective pest control methods, define the area in need of management, and identify sources of nourishment and shelter that you can eliminate.

Is pest management needed? After identifying your pest, decide whether it needs to be managed. Does it pose a health threat? Does it cause property damage or economic loss? What is your family's tolerance level for the pest?

Management is not intended to fully eliminate pests, because the creatures and vegetation are usually not new, but part of the surrounding environment. Instead, management is intended to achieve an acceptable level of pest presence. It's good to remember that doing nothing is an option if the pest is just an occasional nuisance. For example, a wasp nest in a corner of the yard not frequented by people needn't be disturbed.

Cast a web of management methods. If the pest needs to be controlled, review all management options. Control methods can be used alone or in combination. It may be effective to use a mix of non-chemical methods, rather than opting for pesticides as a quick solution. The primary types of pest management methods include:

Cultural — changes in habits or sanitation to reduce features that attract pests

Physical — structural changes and mechanical barriers to block or deter pests

Biological — organisms used as natural enemies

Chemical — synthetic or natural substances, including pesticides

Use Integrated Pest Management (IPM). IPM is an approach which puts all of the control methods in one toolbox. With IPM, the homeowner considers all reasonable measures, but prefers those with the least impact on human health, the environment, and non-target organisms. The focus is on long-term prevention and suppression, as opposed to quick fixes that don't address the root of the problem.

Prevention: First line of defense. Managing pests starts with preventing infestation. Without prevention, insects and rodents can find shelter in homes and grounds and enjoy dining on food left behind. Stronger management methods may be needed *after* infestation has already occurred. Home and property maintenance is a primary preventive measure, which includes many cultural and physical controls.

Management is not intended to fully eliminate pests, but to achieve an acceptable level of pest presence.

Choose least-toxic methods. When pest control is needed, it is important to assess the management options. Choose methods that will meet your needs with lowest toxicity to family, pets and other non-target organisms. Pesticides and other chemicals should be used only after you have tried non-chemical and least-toxic measures and found them to be inadequate.

Homeowners can use cultural and physical measures hand-in-hand, to deter new infestations and reduce existing pest populations. These steps can be taken indoors and out.

Indoors: Block pest entryways through structural changes and mechanical exclusion, such as: caulking cracks, repairing screens, weather-stripping doors, repairing water leaks, and storing food in closed containers. Use careful sanitation (e.g., vacuum, sweep, wash) to eliminate clutter and food sources, which attract and support pests. Sticky or mechanical traps are used indoors and out to control insects and small rodents.

Outdoors: To reduce disease and insects on lawns and plants, choose foliage and grass species suited to your soil conditions and climate. Use fencing and plant guards around foliage to deter rodents and other small mammals. Cut down on weeds by using mulch, setting your mower blade high, and regularly spending short periods of time by hand.

James Clayton

From the digital collections of the New York State Library.

Remove food, water and hiding places on your property, especially near the house. Trim foliage and woody shrubs away from the house, particularly in areas prone to dampness.

Biological Controls: These include beneficial organisms that are natural "enemies" of other species. Predators, parasitoids (e.g. wasps), pathogens (e.g. fungi), and weed feeders (e.g. beneficial insects) can reduce pest populations. For example, the New York State insect, the ladybird beetle (also called the ladybug), is a predator. It eats aphids and other insects.

Pesticides and other chemicals should be used ***only after you have tried non-chemical and least-toxic measures*** and found them to be inadequate.

You can get more information and practical tips on using cultural, physical, and biological controls by viewing Cornell Cooperative Extension websites and other internet resources.

Pesticides: The method of last resort. If non-chemical means of pest control have not worked and you decide to use pesticides, choose those that are least-toxic. Then you must apply them properly to minimize exposure to people, non-target organisms, and the environment.

In general, pesticides are substances intended to destroy and repel insects, rodents, weeds, fungi and certain other forms of plant and animal life. Pesticides can pose risks to people, non-target organisms and the environment depending upon toxicity and exposure. Children in particular can be at greater risk when exposed, because of physical and behavioral factors. Compared to adults, children have more permeable skin, higher metabolisms and are more likely to place hands and objects in their mouths.

Certain words on the labels of many pesticides indicate their level of toxicity. EPA advises you to look for the following words when reading a pesticide label:

Labels that say *caution* represent the least toxic category and the products range in toxicity from relatively non-toxic to slightly toxic. *Warning* indicates the product is moderately toxic. *Danger— Poison* appears on very toxic products rarely used in a home; ingesting just a few drops to one teaspoonful would kill a person.

In contrast to synthetic pesticides, biopesticides are derived from natural materials such as animals, plants, bacteria and minerals. EPA usually considers them less toxic than conventional pesticides.

Should I apply pesticides myself or hire a professional? If you have determined that the pest problem is severe enough to warrant using a pesticide, you have to decide whether to apply the pesticide yourself, or hire a certified applicator.

If you decide to apply a pesticide yourself, you are required by law to:

Check for neighbor notification laws: Find out whether your county has a pesticide neighbor notification ordinance or local law. If it does, any person applying those pesticides (homeowner or certified applicator) must meet certain requirements, which may include posting notification markers and providing written notice to neighbors. Contact your county offices for more information and see the New York State Department of Environmental Conservation (DEC) website.

Use DEC registered products: Under state law, pesticide products must be registered by DEC before they can be used by anyone in the state. A searchable database of products registered in New York State, the Pesticide Product, Ingredient and Manufacturer System, also includes labels for all state-approved pesticides.

Follow product label directions: Under state and federal law, anyone using pesticides must do so according to directions on the product label. Before buying a pesticide, make sure the pest you wish to manage is listed on the label as a targeted pest. Read the label for important use and toxicity information.

Store and dispose of pesticides properly: Store pesticides in the original labeled container, secured out of reach of children and pets. Follow label directions and regulatory requirements for disposal of unused pesticides and empty containers.

If you decide you would rather use a certified pesticide applicator, use the following state requirements checklist to decide which one to hire:

- The applicator company must have DEC business registration and certificate of insurance.
- The person applying pesticides must have a DEC pesticide certification identification card.
- The applicator, prior to applying pesticides (indoors or out), must supply you with a written, digital or electronic copy of label information on the pesticide to be used, so you can read and attend to the warning and hazard information, and take precautions to avoid potential impacts to family and pets.
- Prior to applying lawn care pesticides, the business or applicator must supply a contract for your signature, detailing services to be provided, including pesticides to be used, approximate dates and costs of services, and other items.

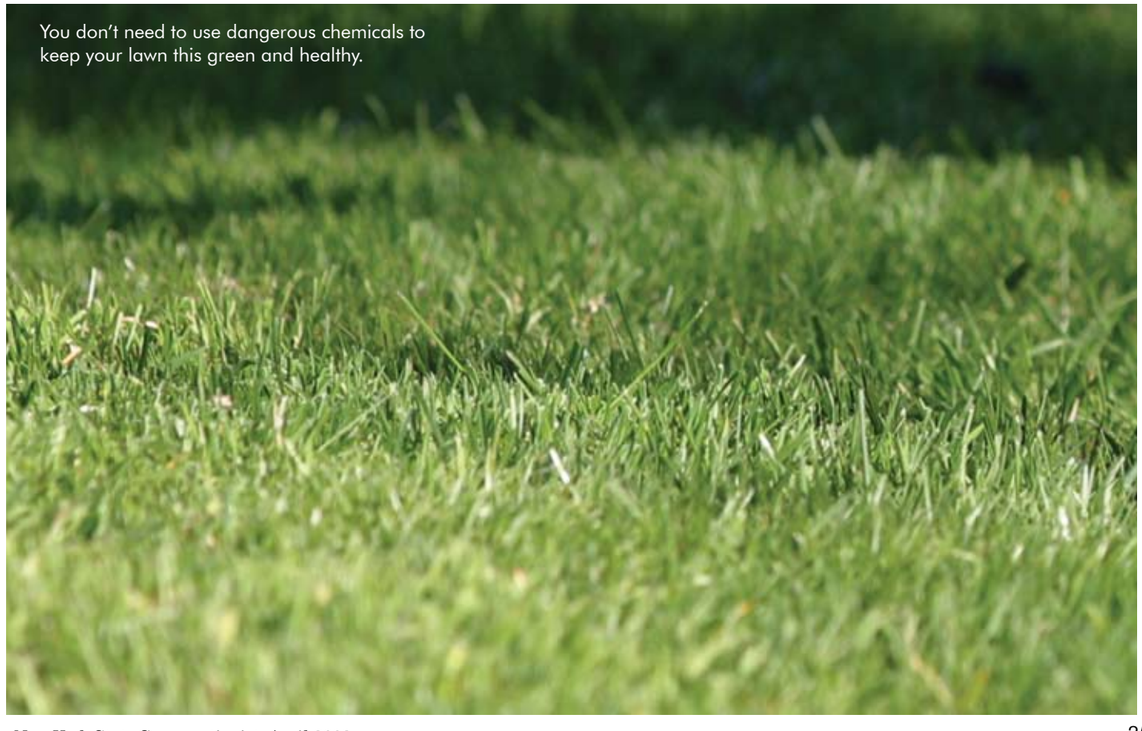
Remember to monitor the effectiveness of any management method used by yourself or a certified applicator. Check whether the pest is still present and, if it is, to what degree. This evaluation is part of preventing a pest increase or recurrence.

Most people have home pest problems at one time or another. Check with family, friends and neighbors for tips on how they have handled pests. And remember to use the least toxic, effective method, to protect your family, non-target organisms, and the environment!

Mary Roy works on public outreach and regulation development in DEC's Bureau of Pesticides Management.

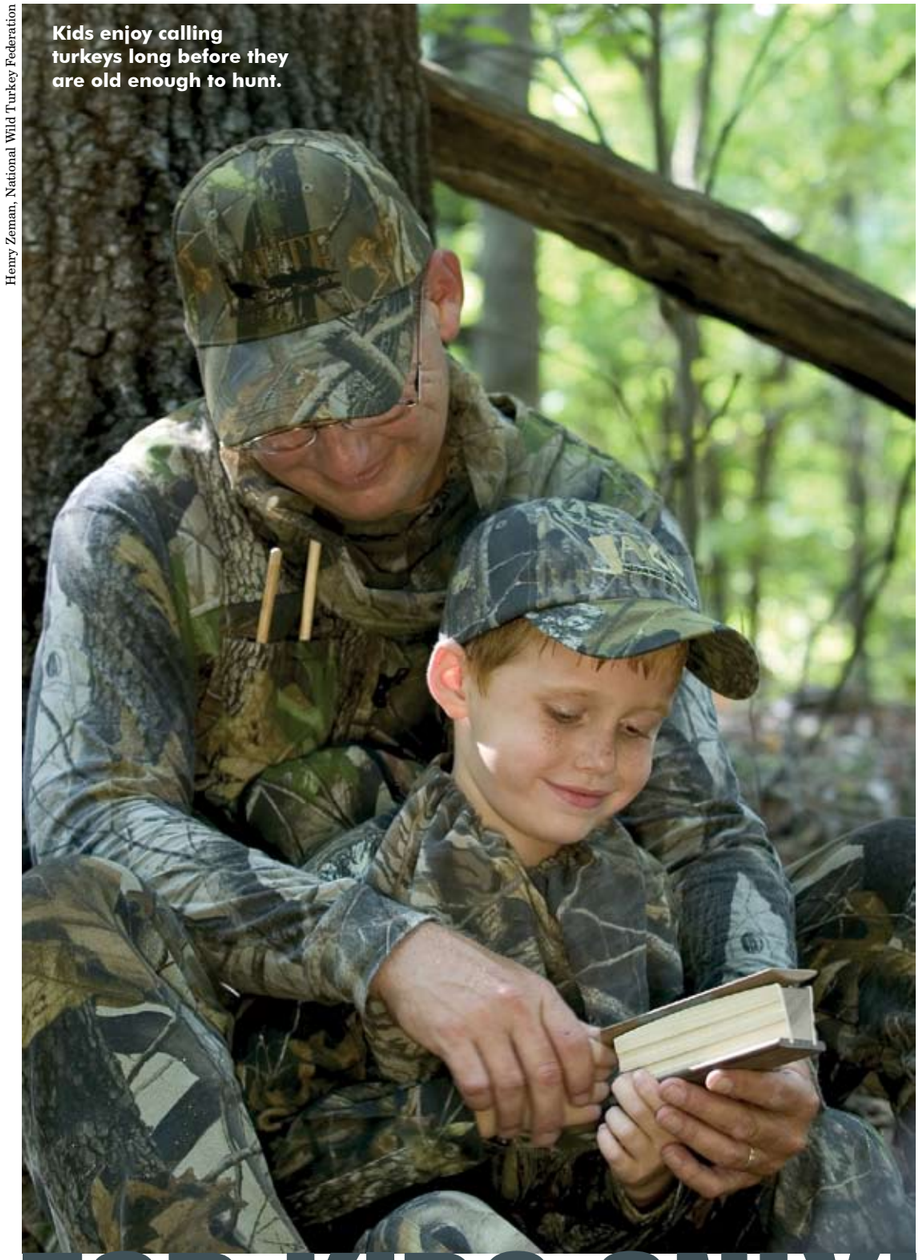
RESOURCES:

Pest management resources are available online, in books, and from organizations, like cooperative extensions.
A wide variety of information, from pest management brochures to lists of registered pesticide businesses and more, is available on DEC's website www.dec.ny.gov under "pesticides." For information on disposal of pesticide containers or unused pesticides, look under "household hazardous waste."
Cornell Cooperative Extension publishes *Pest Management Around the Home* which is available at:
http://ipmguidelines.org/Home/
The New York State Product, Ingredient and Manufacturer System (PIMS) is available at:
http://magritte.psur.cornell.edu/pims
For EPA's list of minimum risk pesticides, go to http://www.epa.gov/oppbppd1/biopesticides/regtools/25b_list.htm
http://www.epa.gov/opppmsd1/PR_Notices/pr2000-6.pdf."
EPA's website also has a wealth of other pest management information.
http://www.dec.ny.gov/chemical/8531.html



You don't need to use dangerous chemicals to keep your lawn this green and healthy.

From the digital collections of the New York State Library.



Henry Zeman, National Wild Turkey Federation

Kids enjoy calling turkeys long before they are old enough to hunt.

FOR KIDS ONLY!

DEC Plans April 2008 Youth Turkey Hunt

by Michael Schiavone

A thundering gobble from the turkey perched high atop a white pine tree shatters the predawn silence. Other gobblers take the cue from this boss tom and begin calling from their roosts on distant ridge tops. A few soft yelps from my turkey call generate more replies—gobble after gobble—and the bass notes reverberate in my chest. The excited drumming of my heart almost drowns out the turkeys!

Young hunters afield for the first time seldom have the opportunity to have their senses flooded by their quarry before the sun even crests the horizon. But spring turkey hunting affords them this opportunity. Hearing and seeing the spring woods come to life in an explosion of sound and anticipation is, for many, a hallowed experience.

DEC established a special youth hunt for wild turkeys in spring 2004, and since then more than 5,000 junior hunters have participated each year. The fifth annual youth turkey hunt will be held on April 26-27, 2008. This is a great chance for young hunters, 12-15 years old, to learn safe, responsible turkey hunting tactics including how to call in and harvest a wary gobbler. With the help of their adult mentors, junior hunters participating in the youth hunt have had a similar success rate to hunters participating in the regular spring season (May 1-31). This is a testament to the skills and knowledge passed from one generation of hunters to the next.

The special season for youth hunters allows them to be outdoors in less crowded conditions and to acclimate to hunting at their own pace. It is difficult to say who finds the event more rewarding—the young hunters or their mentors.

Thomas Flaitz, an environmental conservation officer who has been organizing youth hunts for waterfowl and turkeys in Genesee and Orleans counties since 2001, says, “The kids are having fun; the fathers are having fun. It’s important to get young hunters on board. If a kid shoots his first bird, he is hooked for the rest of his life. Their smile says it all.”

One of the primary goals of the youth hunts is to help sustain hunting participation and its associated recreational and wildlife conservation benefits. While the conservation benefits cannot be overstated, perhaps the greatest benefit of the youth hunt is passing down the tradition, knowledge, and experiences from one generation to the next, and spending quality time with friends and family outdoors.

Michael Schiavone is a wildlife biologist in DEC’s Albany office.

Courtesy of Giancola family

Brianna Giancola with her first turkey.

The first step toward a lifelong hunting experience is taking a hunter education course. You can find course locations and dates on the DEC website (www.dec.ny.gov) or by calling 1-888-HUNT-ED2. If you are fortunate enough to have an adult family member or friend who hunts, they can accompany you in the field during youth hunts. If you do not, there are several organizations such as county sportsmen federations, local chapters of the National Wild Turkey Federation, and others that host youth hunts. Contact your local representatives to see if any youth hunts are organized in your area.

Always be aware of season dates, bag limits, and other regulations before you go. Visit the DEC website and review the New York Hunting and Trapping Guide for details.

Have a hunting story or some pictures you would like to share? We would love to hear from you! Please e-mail us at **fwwildlf@gw.dec.state.ny.us.** Be safe and good luck this season!

From the digital collections of the New York State Library.

FROGWATCH U.S.A.

by Diana Strnisa
photos by Susan L. Shafer

Although the Chinese calendar considers 2008 the Year of the Rat, the World Conservation Union recently announced 2008 is the "Year of the Frog." The launch of this new amphibian awareness campaign makes this year a perfect time to begin frogwatching. Frogwatch USA is a citizen science program managed by the United States Geological Survey and the National Wildlife Federation. As scientists estimate that half of all amphibian species may be threatened with extinction, this frog-and-toad monitoring program helps herpetologists track populations throughout the United States. By collecting data on local frogs, you too can help conserve these incredible animals.

Anyone can frogwatch, as participating only requires living near a frog breeding site. An ideal habitat consists of a wetland, such as a marsh, swamp, or pond that is quiet, safe at night and convenient for you to visit a few times a week.

Before you begin, check the Frogwatch USA website for information that will improve your watching experience. First, register a habitat at www.nwf.org/frogwatchUSA. If you need to find which species live in your area, search the site for "New York State frogs" or search DEC's web site for "herp atlas." If you lack confidence in your identification skills, the Frogwatch Web site provides links to online frog call identification guides. Also, if you wish to join a group effort, the site lists nature centers and other groups conducting frogwatches. For example, DEC has sponsored a number of Frogwatch events at the Five Rivers Environmental Education Center and Dr. Victor Reinstein Woods Nature Preserve.


Bullfrog (*Rana catesbeiana*)

Scientists estimate that half of all amphibian species may be threatened with extinction.

Once you are ready to frogwatch, visit the habitat site 30 minutes after dusk and listen to the frogs call for three minutes. You must wait quietly, as too much noise will stop the frogs from calling and distort your data. Also, be sure not to sit too close to the frogs, as you may disturb their breeding process.

Males call during the breeding season to attract females, although species breed at different times. During the course of the year, calling starts with the quacking sound of wood frogs, sometimes even before the snow has disappeared. A few weeks later, fingernail-sized spring peepers, trilling gray treefrogs, western chorus frogs and warty toads join the chorus in turn. These spring breeders head to the water en masse, where they lay eggs in fishless, temporary ponds called vernal pools. After the spring breeders have finished their courtship rituals, the green frogs' banjo "plunk" and bullfrogs' "jug-o-rum" echo throughout our ponds in late spring and early summer.


DEC has sponsored a number of Frogwatch events at its environmental centers in Delmar and Cheektowaga.

As you focus on their sound, try to watch a frog's throat as it sings. The throat actually balloons with each call to amplify the volume. Watching frogs may also help you identify which call belongs to which species. You may be amazed to learn how loud a sound a half-inch male spring peeper perched on a blade of grass can make.

Once you have listened to the calls for three minutes, you must complete a data collection sheet. The frogwatcher records the types of frogs they heard and the call intensity (the interval between calls). This information allows scientists to estimate both the species present and the approximate population. If you have difficulty quickly identifying calls, you can record them and listen to them later at home. In addition, observers record the habitat location, start and end time, and the weather. Even if you do not hear any calls, recording the information is still important, as scientists need to know if there are no frogs in the area.

If you have time, you may want to observe the frogs' behavior, which can include territorial displays. For example, males may wrestle for a superior position from which to advertise their presence. Although the females choose a mate based on location and singing ability, younger and smaller "satellite" males may lay in wait near a good singer and try to intercept the ladies.

Frogs play an essential role in our ecosystems. They eat many insects, including pesky mosquitoes and gnats, and serve as prey for many predators. And what would spring be like without those wonderful calls on a warm night? The frogs' natural music reminds us that winter has gone, spring has come and the earth is awakening. Being a frogwatcher is an ideal way to appreciate frogs while helping preserve these amazing amphibians for future generations.


spring peeper (*Pseudacris crucifer*)


American toad (*Bufo americanus*)

Diana Strnisa is a water education specialist at DEC's Delmar Wildlife Resource Center.

How do frogs hibernate?

Frogs and toads employ a variety of strategies to survive the cold winter nights. Many spring breeders hibernate by freezing themselves! Some toads hibernate below the frost line, often by using an abandoned animal's den. Some species, like the spadefoot toad, even dig down through the soil. Wood frogs, spring peepers and gray treefrogs spend the winter under leaf litter. As the frogs cool down in their chosen locale, water in their cells binds with glucose, creating an antifreeze that keeps the cell from dehydrating or rupturing. The water in the extra-cellular spaces freezes and the frog's breathing and heartbeat stop. During the winter, the frog's temperature is below the freezing point, ranging from 21-30°F. When spring arrives, the frog thaws and its breathing and heartbeat return to normal.

Other frogs employ tactics to maintain a higher body temperature. Bullfrogs retreat to organic litter on the pond bottom, where the temperature remains above freezing. They completely shut down, and look as if they are dead.

Regardless of the amphibians' hibernation approach, frogwatchers are glad to see them finally emerge with the arrival of spring.

From the digital collections of the New York State Library.

In 1941, General Electric was experimenting with fluorescent lamps, precursors to today's new compact fluorescent light bulbs.

Historic images courtesy of Schenectady Museum.

BRIGHT IDEA!

The "NEW" compact fluorescent light bulb

By Shannon Brescher Shea

New inventions capture our imaginations more than the light bulb. Used for everything from setting the mood to symbolizing a new idea, light bulbs are engrained in our daily lives. So why is everyone trying to convince us to switch from traditional incandescent bulbs to new compact fluorescent ones? Because fluorescents point the way to a bright new future.

Compact fluorescent light bulbs (CFLs) are energy efficient, creating benefits for both the consumer and environment. When used for general household lighting, an ENERGY STAR® CFL uses about 75 percent less energy than its incandescent counterpart. Given that the average house contains approximately 45 light bulbs, this can translate into tremendous savings. In addition, CFLs can last up to ten times longer than incandescents, saving more than $30 per bulb.

This efficiency also decreases the amount of pollution created in producing that energy. For example, when coal power plants generate electricity, they emit carbon dioxide and other pollutants that accelerate climate change, cause smog, and aggravate respiratory diseases. Since New York receives 12 percent of its power from coal, reducing our personal energy use can lessen energy production's negative effects on the environment and human health.

Although fluorescent lights were unpopular in the past, improvements in design have increased CFLs' desirability. Current incandescent bulbs continue to operate on Thomas Edison's design principles. The electricity flows through a tungsten wire, which heats and produces light. However, in CFLs, electricity runs through gases and a small amount of mercury (less than

Digitized by the Internet Archive of the New York State Library.

Historic images courtesy of Schenectady Museum.

General Electric Engineering's C.A. Nickle, a significant contributor to the development of fluoorescent lamps, viewing a fluorescent lamp in 1941.

5 mg in ENERGY STAR® CFLs). The vapors produce ultraviolet light, which changes into visible light when it strikes a coating inside the bulb. The original fluorescent tubes flickered and buzzed because they relied on a pulse of electricity. In contrast, modern CFLs have a near constant flow of electricity that produces a quiet, consistent glow. Developments in technology have also lowered their price, making them more affordable than incandescent bulbs over time.

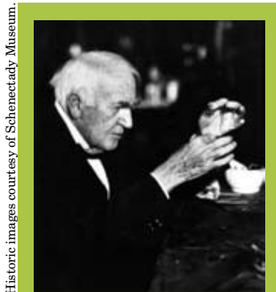
Perhaps the most important improvement to CFLs is that changes in their coating have made their light both brighter and "warmer." Despite their previous reputation for producing harsh and glaring light, experts say that for general lighting purposes, the quality of today's CFLs can actually exceed incandescents. Rensselaer Polytechnic Institute's Lighting Research Center has conducted studies that show people actually prefer well-chosen CFLs to incandescent ones. Referring to the belief that fluorescent bulbs produce a "cold" light, Director Mark Rea said, "It's not true that you have to freeze in the dark with fluorescent lighting."

However, before replacing all of your incandescents, there are a few points to consider when buying and installing CFLs. Because of their design, CFLs work best in places that have good air flow, like table and floor lamps. They also last the longest in areas where the lights are on for more than fifteen minutes at a time. When choosing which CFL to buy, keep in mind that different types of lights suit different purposes. The highest quality lights have a high color rendering index, or CRI. For the best light, Rea recommends looking for CFLs with a CRI of 80 or higher. "Soft white" or "daylight" bulbs have the most natural color. If you want to attach a CFL to a dimmer switch, be sure to buy a specially labeled bulb, as not all of them have that ability. Rea emphasized that a few minutes spent choosing the correct bulb for your needs can greatly increase your future satisfaction.

With so many benefits associated with today's CFLs, the government is encouraging consumers to modify their household lighting. NYSERDA recently passed its pledge goal for the ENERGY STAR® "Change a Light, Change the World" campaign. Through the campaign, run by the Environmental Protection Agency, New Yorkers pledged to replace 101,337 incandescent bulbs with CFLs. These changes will save $2.6 million on energy bills and prevent 41 million pounds of greenhouse gases from entering the atmosphere! Similarly, the national Energy Bill requires light bulbs by 2012 to produce the same amount of brightness as current incandescents but use about one-third less energy. As CFLs are the most common lights on the market that already meet this requirement, it seems as if their popularity will only continue to increase.

So next time one of your incandescent bulbs burns out, why not consider replacing it with a compact fluorescent light bulb? The many benefits make the switch as easy as turning on a light!

Historic images courtesy of Schenectady Museum.



Let there be light

Since its creation by Thomas Edison in Menlo Park, New Jersey in 1879, the light bulb has undergone a number of changes. Many of the innovations that make the incandescent bulb what it is today came out of General Electric's laboratory in Schenectady, New York.

The first major advance was crafting a tungsten filament, the wire the electricity heats to create light. When Edison first invented the bulb, he used a carbon filament which has a much shorter lifespan than tungsten. Although others attempted to make the thread out of tungsten, they found it too brittle to mold into the needed shape. However, working in the Schenectady laboratory, Dr. William Coolidge discovered how to increase the wire's flexibility in 1909. To this day, manufacturers continue to use tungsten in incandescent lights.

Dr. Irving Langmuir, another scientist in Schenectady and a Nobel Prize-winner, made two other major discoveries. A significant problem with light bulbs was that they blackened as the filament burned, decreasing the amount of light produced over time. In 1912, Langmuir realized that if you filled the bulbs with a neon-like gas, you could prevent this effect. He also developed the technique of coiling the filament, which doubled the bulb's lifespan.

In addition to incandescent bulbs, the Schenectady laboratory also played a role in the development of the compact fluorescent light bulb. Although the "spiral" fluorescent was officially invented in an Ohio General Electric laboratory by engineer Ed Hammer, Dr. Gorton Fonda in Schenectady played a key cooperative role in its development. Unfortunately, when it was created in 1976, the company decided it would be too expensive to mass produce. Thanks to modern technology, fluorescent bulbs are now both economically and environmentally smart.

Chris Hunter, Director of Archives and Collections at the Schenectady Museum & Suits-Bueche Planetarium, provided the historical background for this article.

Perhaps the **most important improvement** to CFLs is that changes in their coating have made their light both **brighter and "warmer."**

For further reading, see:

NYSERDA: www.GetEnergySmart.org
Energy Star Lighting: www.energystar.gov/index.cfm?c=lighting.pr_lighting

The Best Compact Fluorescent Light Bulbs May 2007
Popular Mechanics: www.popularmechanics.com/home_journal/home_improvement/4215199.html

Outside magazine *Code Green: Screw the Right Thing* May 2007
http://outside.away.com/outside/culture/200705/code-green-compact-fluorescent-lightbulbs-1.html

Susan L. Shafer

The compact fluorescent bulbs screw into a typical socket.

Shannon Brescher Shea is a staff writer for *Conservationist* and a graduate of Cornell University's Natural Resources/Communication programs.

If a CFL breaks...

Do not use a vacuum to clean it up. Rather, ventilate the room for at least 15 minutes, use a damp paper towel to clean up broken glass and powder, and place the materials in a sealed container. For additional information to ensure a safe cleanup, please refer to the Department of Environmental Conservation's (DEC) Website: **www.dec.ny.gov/chemical/8787.html**. Similarly, when a CFL burns out, do not throw it out. Instead, contact your town's recycling coordinator, as most communities accept these bulbs during their Household Hazardous Waste Collection events (listed on the DEC's Website: **www.dec.ny.gov/chemical/8780.html**. In addition, some towns are coordinating with local stores to collect and recycle them. Recently, the DEC and the New York State Energy Research and Development Authority (NYSERDA) have teamed up to encourage businesses that sell ENERGY STAR® products to become CFL Collection Centers, which will expand the number of disposal options for homeowners.

From the digital collections of the New York State Library.

Carl Heilman II

On Patrol

Real stories from Conservation Officers and Forest Rangers in the field

Contributed by ECO Lt. Ken Didion and Forest Ranger Lt. Chris Liebelt

Rangers Aid Flood Victims—Delaware County

In June 2007, several thunderstorms deposited eight inches of rain during a two-hour period in the Spring Brook drainage in the Town of Colchester. Flash flooding occurred with little or no warning and the residents living along State Route 206 were in danger. Several homes were completely washed away, and dozens of homes were filled with water and debris. Residents and travelers were trapped by rising waters. Emergency responders, including forest rangers Dave Meade and Dell Jefferey, responded to the scene, only to find themselves unable to access the small valley. After rescuing several people from vehicles, rangers decided to pull back and planned to resume their efforts at first light.

In the morning, DEC rangers realized the damage was much more extensive than originally thought. Rescues took place all morning. People were trapped in buildings, cars, and stranded by high water. Medical emergencies took priority. By that evening, triage was completed and a plan was put in place for additional search and recovery efforts.

By the second day of the search, rangers and state troopers had identified four individuals who were still missing. Two were in their home when it was swept from its foundation and destroyed. Another individual was also in her home when it was ripped from its foundation by the flood waters. A fourth person was stranded in a car and washed downstream by the force of the flood. Over the course of the six-day search and rescue, rangers recovered the bodies of two of the missing subjects. Unfortunately, two of the missing could not be found, and still remain unaccounted for.

The professionalism of all involved is evidenced by the fact that not a single serious injury was incurred by the hundreds of staff and volunteers. In all, 18 DEC forest rangers worked on coordinating the field operations for this multi-jurisdictional incident that saved many lives.

Lazy Is As Lazy Does—Putnam County

ECOs Josh Crain and Chuck Wilson were working with state police to find a truck that had reportedly been involved in a dumping incident. A radio call from the troopers made them aware that the truck had been pulled over on I-684 in the Town of Southeast. When the ECOs arrived, the truck driver and his passenger admitted to the illegal disposal of 96 phone books in the Town of Southeast. The men explained that they were contracted to deliver phone books. They had decided that it would be easier to throw the phone books away and quit work early. The men were charged with the illegal disposal of solid waste. Troopers also charged the driver with operating an uninspected motor vehicle and operating a heavy duty diesel vehicle without a valid emissions inspection. The men were also escorted back to the dumping area to clean up their mess.

Just Plain Scary—Tioga County

ECO Mike Wheeler conducted a joint investigation with the Tioga County Sheriff's Department concerning the misuse of a Russian AK-47. A Tioga man had become angry because he was not allowed to bow hunt on a property bordering his own. The angry man threatened the owner of the neighboring land and told him he "would ruin the hunting on that property" with his AK-47. The man followed through on his threat. On numerous occasions, he shot dozens of rounds into the adjoining woods—during hours when other hunters would most likely be present. Two archery hunters provided written statements documenting they had heard bullets strike trees near their tree stands.

Almost unbelievably, the man had his 14-year-old son perform his shooting ritual for him when he was out of town. With a court order in hand, ECO Wheeler and sheriff's deputies seized eight firearms from the man's residence and served him with an order of protection. He was charged with reckless endangerment, criminal solicitation and two counts of hunter harassment. Two days before the scheduled jury trial, the man pled guilty to criminal solicitation and hunter harassment. He was fined $1,000 on the penal law charge and $250 on the ECL charge. The AK-47 is in the possession of the Sheriff's Department and is scheduled to be destroyed.

ARBOR DAY 2008

Melody Walcott

Celebrate Arbor Day on Friday, April 25, 2008, and plant a tree. It's easy to do, helps the environment and will bear rewards for years to come.

Arbor Day is a national observance that celebrates the role of trees in our lives and promotes tree cultivation. In 1872, Nebraska journalist J. Sterling Morton established it to encourage homesteaders to plant trees that would provide shade, shelter, food, fuel and beauty. In New York, Arbor Day is held on the last Friday in April.

Trees are valuable renewable resources and Arbor Day provides the perfect opportunity to appreciate them. Not only do they enhance the natural beauty of our urban and rural landscapes, they provide critical wildlife habitat and improve air and water quality. Having them near your home even promotes energy conservation because of their ability to provide shade and block wind. Trees are also vital to our economy, contributing greatly to our everyday lives by providing paper, lumber, maple syrup, fruits and nuts.

By involving our youth in Arbor Day events that teach about trees and their care, we're helping promote a better future. After all, today's children are tomorrow's foresters and leaders. But remember, you don't have to wait until Arbor Day to celebrate. It's always a good time to plant a tree.

For more information on Arbor Day and trees, visit the Arbor Day Foundation: **www.arborday.org.**

From the digital collections of the New York State Library.

Courtesy American Littoral Society

New York Beach Cleanup

Last fall 8,400 volunteers documented and removed over 143,000 pounds of debris from 285 sites across New York. Soon, cleanup sites "at a beach near you" will be listed on the American Littoral Society's website:
www.alnyc.org. This large effort is made possible by early planning and getting the word out in magazines like *Conservationist*.

Mark your calendars and be at an ocean beach, sound, stream, wetland, or lake on the third Saturday in September to join a cleanup team and participate in the 2008 New York Beach Cleanup. The event is organized annually by the society as part of the International Coastal Cleanup, a worldwide effort of The Ocean Conservancy to document and remove marine debris. Litter is not only unsightly; it poses threats to humans and wildlife. Floating debris is a menace to navigation, fouling propellers and blocking intake valves. Birds become entangled in discarded fishing line and six-pack ring holders; marine mammals ingest plastics that can obstruct their intestinal tract.

Courtesy American Littoral Society

You can call the Beach Cleanup Hotline at (800) 449-0790 for information. For assistance in forming a cleanup team of your own, contact Beach Cleanup Coordinator Barbara Cohen at alsbeach@aol.com or (718) 471-2166.

—*A. Hyatt*

DEC: Get the Lead Out

DEC has announced a new initiative to switch to "green ammo" from lead-based ammunition for firearms training to help reduce the impact of lead at firing ranges.

The ammunition DEC will be using is considered "green" because it is lead-free and includes non-toxic primers. This combination greatly reduces the impact of firearms training on the environment. Lead poisoning is a serious human health risk and excessive exposure to lead, primarily from ingestion, can cause increased mortality rates in cattle, sheep and waterfowl.

DEC is currently phasing in the new ammunition with the agency's 330 environmental conservation officers and 134 forest rangers. The DEC expends over 150,000 rounds of ammunition annually, including during regional in-service training exercises, as well as at the Department's 26-week residential basic training academy.

For more information about lead in bullets, go to EPA's website at: www.epa.gov

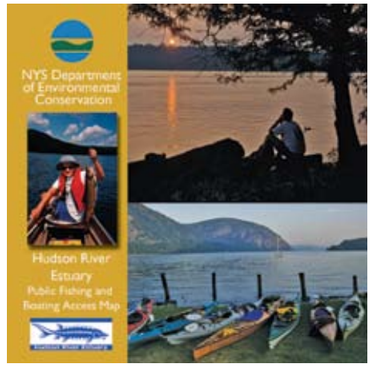
A Legend Passes

Joan Taylor, 78, a longtime *Conservationist* employee who retired from the magazine eight years ago, passed away on February 21. In the April 2000 piece announcing her retirement, then-editor R.W. Groneman described Taylor as the "heart and soul" of the magazine. To say she is well-known to our readers is an understatement. Her name appeared in the *Conservationist* masthead for 36 years prior to her retirement from DEC—a record unlikely to ever be broken. All in all, Mrs. Taylor served the people of New York State for 42 years, and she will be missed.

Hudson River Access CD

The Hudson River Public Fishing and Boating Access CD is now available. This resource provides a variety of information on boating, fishing and other aquatic recreation within the Hudson River Estuary. Its interactive maps feature more than 90 sites along the river, from Troy to Yonkers. It includes information on each access site, including directions, hours, available facilities, wheelchair accessibility, and contact information. In addition, it describes the estuary's ecology, fish species, regulations, and fishing advisories. To obtain a copy of this CD, please send your name and address to the Hudson River Estuary Program, Region 3 at 100 Hillside Avenue, Suite 1W, White Plains, NY 10603-2860 or e-mail them at hrep@gw.dec.state.ny.us

—*S. Brescher Shea*



Don't Move Firewood

DEC is continuing and expanding its "Don't Move Firewood" campaign this year in response to the continuing threat of invasive forest pests.

Eggs and larvae of insects such as the emerald ash borer, Asian longhorn beetle, and sirex woodwasp can travel hidden in firewood. In fact, one of the primary reasons for the spread of these insects is the transport of firewood from infested areas to previously uninfested areas. Invasive insect pests have devastated millions of acres of forests in the United States and the threat keeps growing.

Many other states, and the National Forest and National Park Systems have adopted regulations restricting movement of firewood, or requiring treatment to kill pests, or both. For more information, visit www.dec.ny.gov

Organic School Gardens

As schools in New York ramp up their environmental education programs, some are choosing to employ organic gardens as learning tools, with a variety of benefits to students and their local communities "growing" out of the projects.

Goff Middle School in East Greenbush is a great example of how such a garden can enrich students and at the same time aid a community. Goff garden staff grow and donate more than a ton of organic produce to local food pantries each year—a tangible and valuable service that fills an important need.

Built in the spring of 2003 and founded by the school's environmental officer Mark Warford, the garden is a little more than a half-acre in size. A small solar power system supplies all the power it needs. Town water comes into the barn, is metered, and then runs into six different locations in the garden.

Work in the Goff garden runs from the first of April straight through the first of November. All garden work is completed by staff, students and community members who participate in Goff Garden Club. During the summer, students lead tours for garden visitors and run an on-site farmers' market. The profit from the fall farmers' market pays for all the seeds and supplies for the following year's garden. By working in the garden, students are learning how things grow, and about sustainability and responsibility. For more information about Goff's organic garden, visit **www.egcsd.org**

—*A. Hyatt*

Courtesy Mark Warford

Goff Middle School organic garden.

From the digital collections of the New York State Library.

LETTERS Compiled by Alex Hyatt

Canine or Cougar?

I believe my son saw a mountain lion in northern Rensselaer County on January 17. I realize that many believe this species no longer inhabits this region. As my son opened the back door of our house he noticed our horses were very agitated. An animal—what he thinks was a cougar—came running out of the barn and into the woods behind the barn. I was able to take photos of the tracks.

Mark Anatriello, Rensselaer County

The tracks in your photos are almost certainly canine. Cat toes generally leave rounded prints (see image below); some toe prints in your pics are very pointed. The symmetry and width of the toes in relation to the pad are all indicative of canine origin as well. The behavior of the animal in question is also a clue. To the best of my knowledge, wild cougars generally don't enter structures. Domestic dogs do. Mistaken identity is very common. We get dozens of sighting reports every year, but no proof of wild cougars in New York has been brought forward since about 1894 (see Conservationist *February 2008). Contrast that to areas with even small cougar populations, where sign is relatively easy to find and carcasses turn up frequently.*

—Scott Van Arsdale, DEC wildlife technician

We Ask Questions Too!

While producing David Bonter's article (February 2008) about the apparent decline of evening grosbeak populations in New York State, our editing team wondered if scientists felt climate change could be responsible for the phenomena, or changes in other winter birds' ranges. We asked the author, and here is his response.

Jeff Nadler

Alex Hyatt, assistant editor

A series of relatively mild winters has almost certainly contributed to the northward range expansion of northern cardinals and several other 'southern' species that were historically not seen in New York. I'm less comfortable suggesting that climate change has something to do with changes in evening grosbeak numbers over the past 15 years as the mechanisms contributing to the range contraction are unclear. However, I think it is valuable to note the influence of climate change on bird populations. The evidence gathered in recent years is overwhelming. We will certainly see changes in the avian community in New York as a result of global warming.

—David Bonter, Ph.D., Cornell Lab of Ornithology

The Shark of Bugs

This picture is from a trout stream in Jay. Have you ever seen such a thing? I have been playing in the brook all my life and have never seen anything like it. My question is, are these water beetles predators or do you think the brook trout was killed some other way and the beetle just got a free lunch?

Glen Hagar, Essex County

The fish eater is a giant water bug, probably Lethocerus americanus. *Giant water bugs are very common aquatic bugs found in ponds, pools, and ditches. They have a "snorkel" on the tip of their backside they use to breathe through while underwater or while cruising the surface looking for food. They are fierce predators and shark-like in the speed and ferocity of their attacks. These big insects are often predators of frogs and small fish, as your picture portrays. They are good fliers, moving easily from pond to pond in search of food. They are attracted to lights at night and often scare people when their noisy, clanky/clunky flight smacks them into light fixtures and walls. They can give a very nasty bite if you pick them up. Their common names reflect people's experiences with these unfriendly aspects of their behavior, as in "fish killer," "toe biters," and "electric light bugs."*

—Jerry Carlson, DEC research scientist

REVIEW by Steve Stanne

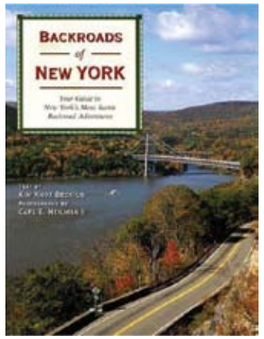
Backroads of New York:
Your Guide to New York's Most Scenic Backroad Adventures

Text by Kim Knox Beckius
Photography by Carl E. Heilman II
159 pages; softcover $21.95
Voyageur Press
Phone: (800) 826-6600

One of the family rituals of my childhood was the Sunday drive—a peregrination with no real destination in mind. Dad would aim the station wagon toward a thinly-populated area of western Massachusetts and we'd wander along country roads, not worried about making wrong turns. My parents enjoyed taking the measure of houses and properties; I imagined the trout that might lie in inviting streams along the roads, my siblings admired the farm animals we passed, and all of us kids would clamor for stops at ice-cream stands or roadside attractions with come-ons like "See Baby Rattlers!" ...plastic baby rattles on a bed of hay.

Today, mindful of energy conservation and beguiled by the cornucopia of organized, well-advertised weekend events, my family has let the Sunday drive tradition fall by the wayside. But I do have lists of places to see, and an occasional weekend for a short getaway. *Backroads of New York* is the perfect book to inspire such itineraries.

The book is organized in six regional sections: City Outskirts (Long Island to the Hudson Highlands), The Catskills and the Hudson Valley, Around Albany, The Adirondacks, The Seaway and Finger Lakes Regions, and The Western Door (Niagara, Chautauqua, and more). Within each region, author Kim Knox Beckius offers travelogues covering the highlights of specific drives. As her introduction points out, while each of the trips can be completed in a single day, more time is needed if you stop at even a few of the notable sights or hike a handful of the enticing trails she mentions.



Carl Heilman's wonderful and numerous color photographs are the highlight of Backroads of New York and even more effective than the text in spurring the reader to slip the key in the ignition, start 'er up, and head on out. His work evokes the wonder of the sights to be found along the way. In addition, historic black-and-white photos accompany some of the site descriptions.

While this is a great volume for inspiring and outlining travel plans, it is not the reference to reach for when you come upon a confusing intersection during a trip. The travel routes are sketchily described and mapped; heed the introduction's advice to invest in a New York State road atlas before setting out. Likewise, this is not a guidebook; it lacks details such as site phone numbers, hours of operation, and entry fees.

Such specifics are outside the province of this book, being secondary to its main intention. Backroads of New York aims to make you forget the household chores, retail therapy, and televised football games and—in the spirit of those old Sunday afternoon drives—to push you out the door into an adventure on New York's country byways. It will likely succeed.

Steve Stanne is the interpretive specialist with DEC's Hudson River Estuary Program, in partnership with the New York State Water Resources Institute at Cornell University.

Write to us

Conservationist Letters
NYSDEC, 625 Broadway,
Albany, NY 12233-4502

or e-mail us at:
magazine@gw.dec.state.ny.us

From the digital collections of the New York State Library.

Back Trails
Perspectives on People and Nature

The Colors of Spring

by Reba Wynn Laks

If you ask people what color comes to mind when they think of spring, most will probably answer "green." Yet spring has a variety of colors.

In early spring, one of the most prominent colors in New York's eastern woodlands is red. Before the woods really "green" up, blossoms of the red maple tree add a definite rouge tinge to the landscape. Back in the woods, the shiny, red-tinted leaves of poison ivy sprout from their vines, although they will turn green as the season progresses. Wake robin trillium hides its rusty red head downwards, while the red and white of its cousin, painted trillium, is much more flamboyant. Skunk cabbage's early wine-colored buds peer out of wetlands, while red peony shoots pop up out of the ground in cultivated flower beds.

As spring is also the season of romance, a number of male birds flaunt their red plumage to attract potential mates. In wetlands, male red-winged blackbirds stake out their territory, attempting to entice females by singing "konk-a-ree" and flashing their red epaulets. In upland areas, the male wild turkey fans out his tail and struts his stuff, sporting bright red and blue mating colors on his head.

Before long, the red in the landscape is overtaken by the bursting explosion of varying shades of green. Skunk cabbage's broad leaves eclipse its previous red flowers, the grass "greens up," onion grass sprouts upward and trees begin to open their buds. Spring woodland wildflowers rush to bloom before the trees' emerging leaves block out the sun's rays overhead.

Soon, yellows, purples, browns, pinks and oranges join nature's assortment of forest colors. Bright accents fill the woods: the trout lily's yellow, bloodroot's and Dutchman's breeches' white, violets' purple, and the spring beauties' delicate candy stripes. A mourning cloak butterfly glides through the open woods, exposing the pale yellow on the edging of its wings. The dark winter coat of deer is replaced by a rich brown. On the first warm, rainy night, spotted salamanders make their way to breeding ponds. Their yellow-spotted black bodies thrash about in a mating frenzy. By dawn, they are gone with only their jellied egg masses left behind to indicate their presence. In the streams, native brook trout flash pink. In the treetops, migrant warblers are easier to spot before the leaves are fully out. Like bright jewels flitting about from tree limb to tree limb, yellow-rumped, black-throated blue, orange blackburnian warblers and American redstarts add their colors to the palette of the woods. The white petals of shadbush and dogwood stand out among the dark trunks. All are interwoven into the multicolored fabric of the spring eastern woodlands.

In fields, bluebirds have returned to nest boxes. Additional yellow touches the countryside, as patches of coltsfoot stick their heads up along roads and field edges. Daffodils, forsythia and dandelion flowers grace gardens and lawns. Pink cherry blossoms and pink and white magnolia blossoms appear in yards and villages. In orchards, the apple trees, their blossoms white with a touch of pink, begin to flower. Spring, in all its colors, is well on its way.

Like bright jewels flitting about from tree limb to tree limb, yellow-rumped, black-throated blue, orange blackburnian warblers and American redstarts add their colors to the palette of the woods.

Reba Wynn Laks is an environmental educator and the director of DEC's Stony Kill Farm Environmental Education Center.

Red maple flowers

From the digital collections of the New York State Library.


See Page 18

Eric Engbretson

Subscribe today!
Call 1-800-678-6399

Visit online:
www.TheConservationist.org

From the digital collections of the New York State Library.