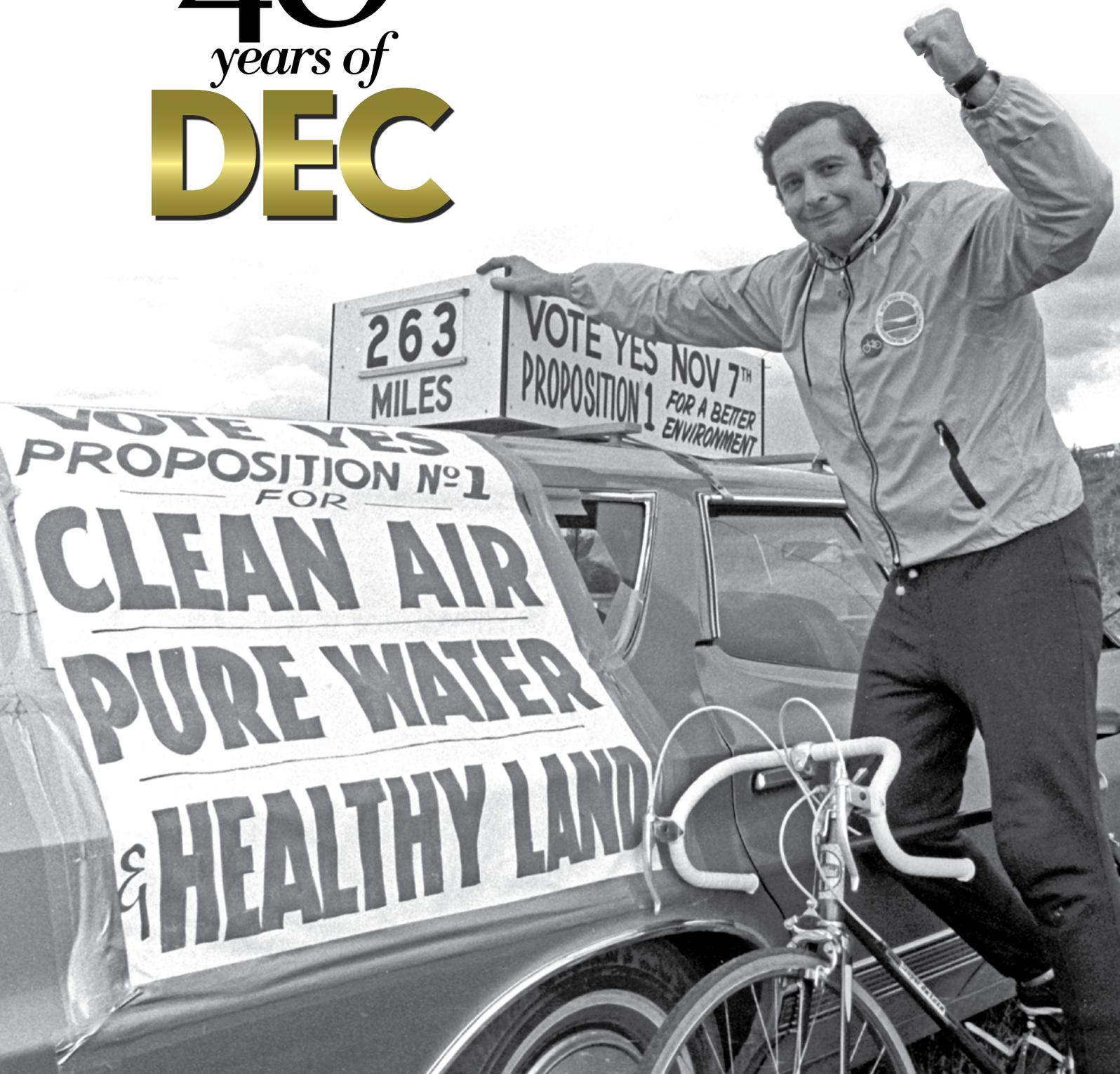


New York Orchids | Nature's Nightlights | Stream Science

NEW YORK STATE
Conservationist

JUNE 2010

40
years of
DEC





Dear Reader,

On July 1st, DEC marks its 40th anniversary. For me, it's personal. I started my DEC career back in 1970 as the Compliance Counsel on Commissioner Henry Diamond's leadership team. In fact, if you look closely at the photo on page 8, you'll notice me following behind Commissioner Diamond in the Manhattan leg of our 1972 statewide bike ride for the Environmental Bond Act (please forgive us for not wearing helmets—it was a long time ago...). In 2007, after a 30-plus year sabbatical representing the Upper East Side of Manhattan in the State Legislature, I was honored to be able to return to DEC as Commissioner. I'm just as excited now as I was all those years ago to be part of this critical agency.

As DEC turns 40, we've made tremendous progress in improving New York's environment. The water is cleaner, the air healthier and wildlife is thriving. And while the work to maintain that progress continues, we face an onslaught of emerging environmental issues, from combating Climate Change to dealing with growing numbers of invasive pests. Each day brings new challenges to the department, challenges that are met with extraordinary commitment and care by DEC professionals.

I'm proud to have the opportunity to stand side-by-side with the department's dedicated women and men as we mark 40 years of environmental stewardship and progress in New York State. I look forward to even more gains in the years to come.

Sincerely,

Commissioner Pete Grannis

NEW YORK STATE Conservationist

Volume 64, Number 6 | June 2010

David Paterson, Governor of New York State

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Susan L. Shafer

June 2010 Volume 64, Number 6

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Orchids

of New York

by Chuck Sheviak and Steve Young
photos by Chuck Sheviak, unless noted

Oohhs and aahhs erupted from the small crowd of onlookers as each took a turn squatting down to peer at the extraordinary find. They had hoped to catch a glimpse of this rare species in the wild, and were thrilled that the southern twayblade had emerged. To this group of botanists, seeing the tiny orchid—no taller than your hand—in this bog in Lewis County was a dream come true. After all, the delicate flower occurs in fewer than 10 locations in New York.

During their two-day botanical hunt, the group felt fortunate and thrilled to have seen seventeen different species of orchids, from the small twayblade, *Listera australis*, to the large and regal lady's-slipper, *Cypripedium reginae*. It was an awesome trip.

With more than 21,000 known species, the orchid family is the second largest family of plants; only the aster family is larger. Orchids come in a variety of shapes, sizes and colors, and are considered the most highly evolved of plants. They typically have showy, three-petaled flowers with the middle petal differing in shape and color.

Grass-pink

Calopogon tuberosus

Habitat: Bogs, marshes and peatlands. Primarily in very open sites; usually in very acidic soils.

Blooms: June and July

While orchids are often associated with the tropics, these plants actually occur in a variety of habitats worldwide, absent only from the driest deserts and Antarctica. Many New Yorkers have no idea of the variety of orchids that dot the state's landscape. In fact, nearly 60 species of orchids are native to New York, and one European species has become naturalized. Some are common, but most are rare, and a few are endangered.

Many of us have probably encountered several species of orchids without realizing what they were. For instance, the familiar lady's-slippers (among the showiest of our native species) and pink lady's-slipper are commonly found in acid soils of pine and oak forests across the state. In addition, two varieties of yellow lady's-slipper are widespread. One, the large yellow lady's-slipper, is usually seen in upland sites, while the small yellow lady's-slipper prefers deep swamp forests.

Not all our orchids are as flashy as the lady's-slippers. In fact, most of our species, like the northern green bog orchid, have smaller, sometimes minute flowers, and in many species the flowers are inconspicuously colored brown or green. This is why they can be easily overlooked.

While variety is the spice of life in the orchid family, there are common features that identify them as a group. Like their relatives, the lilies and irises, orchids have three sepals (small modified leaves near

the rim of the flower) and three petals. However, orchids have one petal that is different from the others; called the lip. In addition, while irises have three stamens (male flower parts) and a pistil (female flower part), in orchids these parts are fused into a single structure called the column (see diagram on pg. 7). The column



Loesel's twayblade

Loesel's twayblade

Liparis loeselii

Habitat: Rich marshes, peaty swamps, mucky seepages, and open and forest habitat in permanently saturated soils. Often grows in mucky or peaty soils.

Blooms: June and July

includes the stigma (tip of the pistil) that receives the pollen, and only one or two pollen-bearing anthers (enlarged part of the stamen).

The assorted floral parts, especially the lip and column, are incredibly varied in different members of the orchid family. Differences in the structure of these parts, flower colors, and fragrances reflect specialization that allows the various species to attract different insect and bird pollinators. Even minute differences between closely related orchids can dictate different pollinators and prevent hybridization.

A particularly remarkable feature of orchids is their exceptional ability for seed production. The seeds are minute and dust-like, and produced in great numbers. Even New York's smaller-flowered species, such as the nodding ladies'-tresses, commonly produce around 8,000-10,000 seeds per flower. Considering that an average plant bears 10 to 30 flowers, we are talking about some serious seed production!



Northern green orchid

Platanthera aquilonis

Habitat: Marshes, swamps, edges of streams, and wet ditches. Also on slopes in hardwood forests.

Blooms: June through August



rose pogonia

Rose pogonia

Pogonia ophioglossoides

Habitat: Peaty open wetlands; acidic bogs and wet interdunal flats. Grows adjacent to these habitats in disturbed upland soils, such as along abandoned railroad grades and roadside ditches.

Blooms: Late May through July

But the tiny seed size that makes such large numbers possible comes at a price. The seed harbors virtually no stored food, and the embryo is an undifferentiated cluster of cells. This renders the seeds incapable of germinating and growing on their own. Instead, they must establish a symbiotic relationship with a soil fungus to provide nutrients. Such relationships are only rarely successful and may require special soil conditions, leading to a plant's rarity.

Another hardship orchids face is that the soils that favor their growth are often nutrient-poor and either very acid or alkaline. Consequently, many orchids, such as grass-pink, rose pogonia, and white fringed orchid are found most often

in coastal dune sands and in bogs and fens (a type of marsh).

While orchids have difficulties establishing themselves, the sheer number of seeds produced, combined with their dust-like qualities, help the plants disseminate widely. That's why after hiking along miles of seemingly identical forest trail you may encounter an isolated orchid plant. Perfect examples of this are the marvelous greater round-leaved orchid and its close relative the large round-leaved orchid which are typically encountered in this fashion. Both are impressive to see, with smooth, rubbery, jade-green basal leaves that can grow to be the size of dinner plates. Another species, Hooker's orchid, has the same flat, round leaves, but it's very rare in the state and the flowering stalk must be seen to identify it correctly.

Large yellow lady's-slipper

Cypripedium parviflorum var. *pubescens*

Habitat: Predominantly in upland forests.

Blooms: June and July

large yellow lady's-slipper



When conditions are especially favorable, the large number of seeds can lead to explosive population growth. This is especially true for those orchid species that colonize disturbed sites. In fact, some species, such as most species of ladies'-tresses in the genus *Spiranthes*, are common in roadside ditches, borrow pits, mowed rights-of-way, old fields and pastures. Nodding ladies'-tresses are routinely seen every fall by untold thousands of motorists, most of whom have no idea that the little white flowers blooming in the mowed right-of-way of the Thruway are in fact orchids! At one time, one 200-foot-long roadcut bank in the Adirondacks supported amazing numbers of nine species of orchids. One year, approximately 90,000 plants of nodding ladies'-tresses were in bloom on a single day in early September; this was but one day during a five-week period during which individual plants came into bloom and went into seed in sequence. It was a spectacular display.

While some orchids are common, there are 20 species of orchids that are considered endangered or threatened in New York



spotted coralroot



nodding ladies'-tresses

Nodding ladies'-tresses

Spiranthes cernua

Habitat: Open, moist, often sandy areas. Most common in disturbed sites along roads and under power lines.

Blooms: August and September

Spotted coralroot

Corallorhiza maculata

Habitat: A wide variety of forest types; most common in hardwood, hardwood-hemlock, and hardwood-white pine forests.

Blooms: July through September

and are very rare to see. DEC's New York Natural Heritage Program keeps track of their numbers and locations throughout the state and surveys new locations for them every year. Some of them, like Hooker's orchid, were once fairly common in the state but have declined drastically over the last century. Continued study may explain this decline.

Questions like, "What caused the decline of Hooker's orchid?" justify the great interest in these wonders of the plant kingdom. Wild orchids often generate excitement due to their reputation as rare and exotic plants. Indeed, the more that is learned about them, the more fascinating they become. Consequently, that



lesser purple fringed orchid

Lesser purple fringed orchid

Platanthera psycodes

Habitat: Margins of streams, swamps, marshes and wet low forests.

Blooms: June through August.



group of *Listera* in the bog, or the colony of *Spiranthes* on the road shoulder, represents more than a beautiful accent to the scene: they are products of complex and interwoven phenomena that remain mysterious to this day.

Botanist and rare plant aficionado **Steve Young** works in the New York Natural Heritage Program in Albany.

A botanist specializing in native orchids, **Chuck Sheviak** is curator of botany at the New York State Museum.

When observing our native orchids, please do not pick them. All of our orchid species are on the state protected list. It is a violation for anyone to remove or damage an orchid that is on state land, and you may not remove an orchid from private land without the landowner's consent. For more information about the state's orchids, check out the New York Flora Atlas at www.atlas.nyflora.org.

New York State Conservationist, June 2010



showy orchis

Showy orchis
Galearis spectabilis

Habitat: Rich forests (sometimes associated with calcareous "chalky" bedrock).

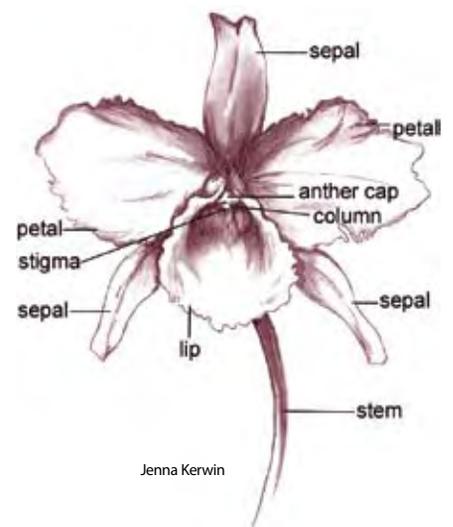
Blooms: May and June

Pink lady's-slipper
Cypripedium acaule

Habitat: Sphagnum bogs and highly acidic forests with pine or hemlock. Sometimes on roadsides and in young successional forests; often on hilltops and upper slopes.

Blooms: May and June

Parts of an Orchid



Jenna Kerwin

An Environmental Vision 40 YEARS LATER



DEC Commissioner Henry L. Diamond pedals the streets of Manhattan during his historic 350-mile statewide bike ride in 1972 in support of the successful \$1.15 billion Environmental Quality Bond Act. To the left, riding several rows behind Mr. Diamond is current DEC Commissioner Pete Grannis (in white).



DEC Commissioner Pete Grannis reflects on the foresight of the department's first Commissioner, Henry Diamond

On July 1, 1970, in the aftermath of the first Earth Day, DEC was formed. On the occasion of the creation of this new “super” department for the environment, the *Conservationist* sat down with new DEC Commissioner Henry Diamond to get his thoughts on the future of the department and the environmental challenges ahead. The following are excerpts from that 1970 interview with Commissioner Diamond, and from a recent interview with current DEC Commissioner Pete Grannis, who reflects on what has come to pass over the last 40 years.

1970: In a recent *New York Times* interview, in response to a question about combating pollution, you said, “The front line is picking up garbage.” Could you elaborate?

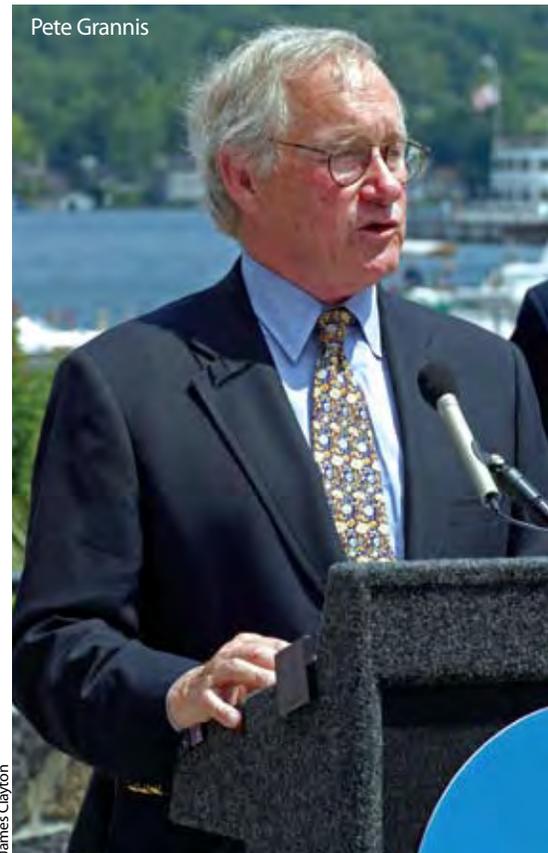
Henry Diamond:

The point, I think, is very important, perhaps even the key element. There is a great deal of enthusiasm, zeal, public fervor and rhetoric about the environment right now. Our great challenge is to translate this enthusiasm into action. The things we talk about doing to combat pollution are really pretty grubby, difficult, unpleasant, unsexy, undramatic things—taking filth out of water, taking grime out of air, and picking up the garbage. They are, perhaps, not as dramatic as going to the moon, but it is more important for our survival.

2010: Did we meet the challenge of translating the enthusiasm that existed after the first Earth Day into action?

Pete Grannis:

Yes. I think it clearly did happen. The first Earth Day in 1970 was viewed as a national one-day focus on the environment. Out of that day came the beginnings of the modern environmental movement. And some of the great environmental organizations were formed as a result of Earth Day activities. This agency was formed, the federal Environmental Protection Agency was formed, and agencies like DEC were created around the country. So clearly it was much more than a one-day flash in the pan. It was a very fundamental change—the beginning of a new era. You just have to look how far the country has come in the last 40 years, when we've had some of the strongest environmental laws on the books.



Obviously people are still concerned about some of the same things. Is the air healthy enough? Is the water clean enough? But back in those days many of our waterbodies were open sewers. There were industrial waste pits for businesses along the Hudson River, and other waterbodies in New York were used as dumping pits. Lake Erie was thought to be dead. Today it has one of the most important and exciting fisheries in the country. We've come a long way, but those issues are still out there. We have to make sure that our successes are maintained. We have a way to go, but I think that this progress wouldn't have been possible without the energy that came out of that first Earth Day.

I don't see another great day like we had 40 years ago, but the current concern about Climate Change has been driven by almost the same equation. Government officials didn't seem to get it, couldn't figure out what to do, or

didn't care. But the kids got it when they saw the polar bears on the ice floes and it rippled up to their parents. I think much of the concern about Climate Change has been driven by a citizen movement, and now government officials have finally come to the table and are struggling with solutions. It's a parallel with Earth Day, without the big national focus.

1970: Historically, conservation activities have been centered in the suburban and rural areas, and yet many of our hardcore environmental pollution problems are in the cities. Will the new department redirect its attention to the urban ills?

Henry Diamond:

I wouldn't call it so much a redirection as I would call it a formation or forging of a new environmental coalition. We've got a tradition of leadership among the fish and wildlife people, the wilderness enthusiasts and sportsmen. These people have always been interested and have always provided leadership.

Now we have a new type of interested citizen. Maybe she is a mother who lives in the Upper West Side of New York City. She doesn't care anything about hunting or fishing, and she doesn't really care about wilderness, but she wants decent air for her child to breathe. She wants to look at

I would like to see the day when our automobiles are marketed not as sex symbols, but instead as symbols of environmental quality. —Henry Diamond

the Hudson River and see it cleaned up as a place for her child to play.

We are seeing a community of interest from the man who might be a trout fisherman or wilderness advocate, and this mother in upper Manhattan. Basically they are both seeking the same thing: healthy land, clean air and pure water. There is great power here and, quite frankly, political clout to support pollution abatement programs, to support fish and wildlife programs, and to support wilderness programs. I see this as a great opportunity to work together for the things we all want.

2010: Did that prediction come to pass over the years? Do we still have broad, diverse coalitions pursuing common environmental goals?

Pete Grannis:

Yes, I think so. When the department started 40 years ago, the conservation groups—the hunters and anglers, the people who did the bird watching, and who worried about things outside—were viewed as a much more rural constituency. Clearly, the broader constituency that Commissioner Diamond talked about was the force behind Earth

Day—families in New York City who wanted to go to a clean beach on a weekend; to go to the Hudson River and not have to hold their nose; to go outside and not be choked by car exhaust or have particulates raining down on them when they were having a picnic in a park. Those were constituents who were very much behind the early environmental movement that led to this department, and are still critically important today. While many of them don't view themselves as environmentalists, they certainly appreciate the quality of a clean environment. The point is, there's nothing urban, rural or suburban about clean water and clean air. They're universal. Whether you view yourself as an environmentalist or just somebody who wants to be able to go outside to appreciate nature or sit in the park, those are very common elements.

1970: How can we pursue the two seemingly incompatible goals of industrial development and economic growth with pollution abatement?

Henry Diamond:

Well, this is, of course, the classic dilemma. If you had no growth and no development you certainly would have far less in the



The point is, there's nothing urban, rural or suburban about clean water and clean air. They're universal. —Pete Grannis



Susan L. Shafer



James Clayton

way of pollution. You would also have far less in the way of wages and profits. I think what we are talking about is well thought-out, balanced development so that the new things we do, we do right.

We are going to be reasonable and realize that you have to have electric power, have to have jobs—but we were put here by the governor and the people of this state to be advocates for environmental quality. But achieving this balance is that thing called good governance and statesmanship.

2010: Have we achieved a balance between economic growth and environmental protection?

Pete Grannis:

You just have to look where the country's come from in the last 40 years. Obviously, our economy has prospered, and I think we recognize even more than possibly back then, that a strong and progressive economy depends on strong environmental standards that everybody has to live by. It levels the playing field and sets the goal of an improved environment. Our country has done extraordinarily well with very rigid air, water,

and solid waste standards on the books. Again, it's a balance, of course, but I think there's nothing incompatible with strong environmental standards and a good, strong economy.

1970: And finally, how can the average person or family contribute to saving the environment?

Henry Diamond:

There is one set of programs concerning our environment that government must do. If you are building a multi-million dollar sewage treatment plant, or you are passing laws to require air pollution control devices on automobiles, or you are buying open space, or providing constitutional protection for the Adirondacks, then government has got to do the job. On the other hand, the average citizen has to join with his fellow citizens and government in many other programs.

We are beginning to see in a very interesting and important way, a new consumerism, a new individualism, and people are accepting personal responsibility for the environment. On the simplest level this means, "I will not litter, I will not throw things out, I will not buy

detergents that are non-degradable with a high phosphate content, or buy plastics and throw them away."

I would like to see the day when our automobiles are marketed not as sex symbols, but instead as symbols of environmental quality. If the public demands that manufacturers produce within environmental guidelines, then an improved environment will be created. And if the individuals do, it will happen. If they don't, it won't, and the rhetoric will fade away. Unfortunately, we may too.

2010: How can the average New Yorker help the environment today?

Pete Grannis:

I think Henry Diamond was absolutely correct in his assessment of where things needed to go, and it's just as true today. Obviously an awful lot of the environmental movement depends on personal choices and actions. Buying a car that gets better gas mileage and uses cleaner fuel, taking reusable bags to the supermarket instead of using plastic bags, recycling bottles and cans, changing out light bulbs for more efficient ones—all of these little things add up. On top of

those is the personal concern that individuals can convey to the state legislature and to their federal officials about the things they want improved, what they want government to work on to come up with better solutions. A lot is driven by lifestyle decisions in peoples' homes and in their work places.

All across New York State, there are communities that have taken our "Climate Smart Communities" pledge. They're making decisions at the local level, recognizing that while it's not going to make a huge difference in the world's climate, every little bit helps. These are communities and individuals that care, and I think they've been the drivers, as they were 40 years ago, in looking at environmental issues in a new way and with a new concern.

In 1970, you were hired by Commissioner Diamond on his new executive team. Does looking back on his interview spur memories of your early years at DEC?

Pete Grannis:

Yes, it does. Back in 1970, I was a tax lawyer at a small New York City law firm. Along with a few friends, I helped organize the first Earth Day in New York City. Being part of that amazing experience, seeing all that energy and excitement, I decided that I'd much rather be working on environmental issues than looking after peoples' taxes. Through a friend, I managed to get an appointment with Henry Diamond. He offered me a job as the agency's compliance counsel where my role would be overseeing all DEC's enforcement activities.

It was overwhelming. I was the new kid on the block with a lot of energy and focus, coming from a small law firm to a huge state agency. It was an exciting time, working with people from different backgrounds, with different perspectives, and who treated problems differently.



I greatly admired Henry Diamond back then, and I still do. What he thought and said 40 years ago seems to be surprisingly similar to what we're saying and thinking today.

As DEC turns 40, is the department's mission as essential as it was in 1970?

Pete Grannis:

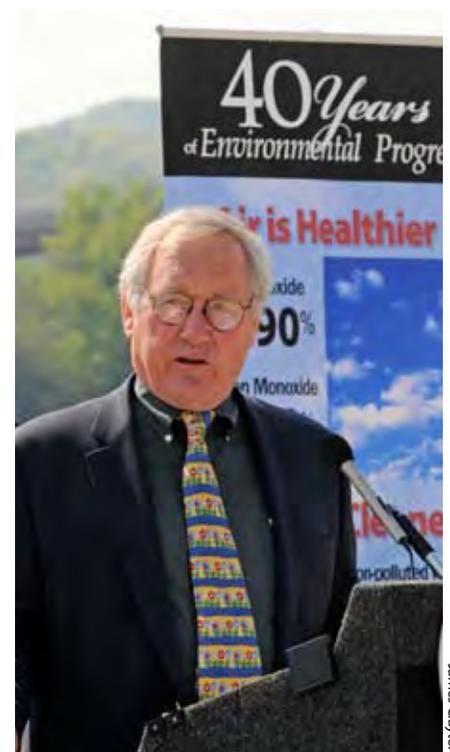
Our work today is probably more important than it's ever been. We play a pivotal role, not only in maintaining the quality of the environment, but also in providing the progressive policies that lead to a strong economy. So much of our economy is linked to the work done at DEC—combating Climate Change, ensuring clean water and healthy air, restoring polluted land, reducing waste, protecting our magnificent natural areas—the list goes on and on. What we do at DEC is really at the heart of what the state is all about.

I don't think the men and women of the department get nearly enough credit for the extraordinary job they do. DEC touches every New Yorker's life and that's a message that needs to be sent over and over again. Something good

happens for the environment every day, and it's really because of the people who work at DEC.

Henry Diamond is currently a principal of Beveridge & Diamond Law Firm in Washington, D.C., the largest and one of the oldest firms in the United States concentrating in all aspects of environmental law and litigation.

Pete Grannis is Commissioner of DEC.



New York State Forest Rangers:



Celebrating **125** *Years* of Protecting New York's Forests

By Richard Totino

photos by DEC unless otherwise noted



Yesterday's forest rangers may have had different uniforms and equipment, but the commitment and dedication to New York's forests were as evident then as they are today. Above, a group of forest rangers pose with their fire control vehicles in 1926.

History is not a platform on which to rest and display our laurels; rather it is a palette of colors from the past, standing ready to help paint the future. It is from this point of view that I look upon a small and enormously dedicated group of people—those who have proudly served as forest rangers in New York State.

Before 1885, we didn't have a Forest Preserve in the Catskill and Adirondack Mountains. Today, we do.

In 1885, we didn't have four-wheel-drive trucks. Today, we do.

And in 1885, we didn't have snowmobiles or all-terrain vehicles or motorcycles. We didn't have public campsites so frequented by people that they often must be policed. Today, we do.

What we did have back then were vast areas of wilderness being logged without controls. We had rampant forest fires burning the slash created by this uncontrolled logging. We had a major city and future world financial center developing in our southern region that was increasingly dependent on the supply of water from the wilderness areas to its north.

Nine years later, in 1894, we had a constitutional convention and an electorate who, peering far into the future, recognized a need and had the strength of

character and the conviction to take the bold steps necessary to protect the lands and resources that were being abused. The results have benefited all of us to this very day in the creation of state-protected lands in the Catskill and Adirondack Mountains that we now call the Forest Preserve.

State legislators also understood the need to employ a force of men to protect this newly created Forest Preserve. First called "Fire Wardens" and then "Fire Patrolmen," today we know this proud force of men and women by their contemporary title of New York State Forest Rangers.

As a search-and-rescue volunteer, I have had the opportunity, and the honor, of working alongside many of these rangers. I can personally attest to the professionalism and dedication of every one of them with whom I've worked.

The forest rangers' mission is to protect and care for all state lands under the jurisdiction of the Department of Environmental Conservation, which today extend far beyond the initial lands set aside in 1885. From Montauk Point to the Niagara Frontier, from Lake Erie to Lake Champlain, from New York City to the St. Lawrence Valley, these rangers, dressed in their traditional green uniforms, patrol not only the six-million-acre

vastness of the Adirondacks, but also parcels as small as the two-hundred-acre, postage-stamp-sized park on Staten Island and all the many other state-owned lands in between.

Rangers can easily be confused with their equally important and dedicated parallel force of Environmental Conservation Officers (ECOs), who wear similar uniforms, but have a distinctly different mission. The difference is that ECOs are charged with the protection of our air, waters, fish and wildlife, while rangers are specifically charged with the protection of DEC-administered state lands, the people who use them, and the resources therein.

In 1885, the original force had a much narrower mission than do today's rangers. Their primary concerns were preventing and fighting forest fires, protecting the newly formed forest preserve from timber theft, and enforcing the law on the newly set-aside lands. And, hidden beneath this explicit mission was the need to protect New York City's water supply, which originated in the Catskill and Adirondack Mountains.

Creation of the ranger force is alluded to in the Conservation Commission report of 1911: "The value of the two great forest preserves is so great, not



A modern-day forest ranger participates in a controlled burn.



Forest rangers march in formation.

James Clayton

only commercially, but from the standpoint of protection to the watersheds, as a great playground, health resort, game refuge, and source of wood materials, in all of which the State is vitally interested...that the State necessarily commits itself to a policy of protecting these great resources. In order to accomplish this work properly, a permanent annual force, sufficiently large and of the most efficient men, should be provided." The report goes on to say, "The position of fire patrolman should be abolished and that of forest ranger created. The latter

should have all of the powers and duties of the present fire patrolman and have full police duties relative to protection of State lands." With that, the initial group of forest rangers was formed.

In 1885, the primary qualification for a fire patrolman was a man's ability to survive in the wilderness. Today's forest ranger must have these same skills, but is also highly educated, and may be a man or a woman. Rangers continue to be the first line of defense against forest fires, sometimes assist other states in firefighting efforts, and also manage search-and-

rescue efforts for lost or missing people. In addition, today's rangers routinely deal with a whole spectrum of problems unimaginable in 1885: DWI, domestic violence on state lands, and drug and alcohol abuse.

In 1885, the primary method of patrolling the vast back country was on foot, with the occasional aid of a horse or mule. Today's rangers must still be expert cross-country hikers, but more modern methods of transportation are also available and are employed when necessary. Trucks and SUVs are the most visible to the general public, however,



James Clayton

In the early days of New York State Forest Rangers, the primary requirement was survival skills. Today, forest rangers are trained in a wider array of skills, from rappelling down mountains, to flying in helicopters, to using GPS systems in search-and-rescue operations. Above: a 1928 Conservation Department fire control truck, and a 2008 model; rappelling in the 1970s and ice-climbing today.

boats, ATVs, snowmobiles, and state police helicopters and other aircraft are also used to support the rangers' mission.

The "old" method of finding one's way in the back country was with a compass or by "dead reckoning." Rangers still rely heavily on these basic, time-tested methods. Today's compass might appear more "high-tech," but it is still the same device used for hundreds of years. Its use must still be mastered by each new recruit, along with Global Positioning System (GPS) units, which complement but do not replace the compass. The contemporary ranger must also be skilled in the use of radio equipment for communication, direction and control.

Through my volunteer search-and-rescue work, I have spent many days with the men and women of today's ranger force. I have personally witnessed them organize, implement and direct the national Incident Command System. I have repeatedly seen them manage a public emergency, mobilize volunteers, place equipment and other resources where needed, and launch a search effort with the same precision as would be expected from a military unit.

Today's New York State Forest Rangers are highly trained natural resource professionals, wilderness first responders, public emergency managers, police officers and, oh yes, they are firefighters as well. I have seen them climb aboard a helicopter

loaded with modern gear strapped to their backs, chests and legs. And I have seen them strike off into the wilderness in search of a lost soul with nothing more than a small backpack, a couple bottles of water, a compass dangling from around their necks and a smile on their faces.

This is a professional force of men and women charged with a clear and distinct mission. They no longer trudge off into the back woods with wicker baskets strapped to their backs. Today's forest rangers are prepared to take on and complete their mission, asking only for the necessary



Though forest rangers still use transportation similar to that used in the 1920s, helicopters and other modes of transportation have been added thanks to advances in technology. Above: forest firefighters carry equipment off a float plane at High Point Mountain in October 1947; rangers depart a helicopter in 2006.

A pack basket was a common accessory for the first forest rangers, and today the equipment has expanded. Here Ranger Megan McCone gears up to help fight fires in California in 2008.

Susan L. Shafer

equipment and supplies, a chance to help, and maybe an occasional pat on the back from those they serve.

Prior to 1885, we didn't have the New York State Forest Ranger. Today, thankfully, we do.

Outdoor writer **Richard Totino** recently relocated from Saratoga Springs, NY to retire in South Carolina.

Editor's note: for further reading, see *The Forest Rangers: a history of the New York State forest ranger force* by Louis C. Curth, published in 1987 and available through a number of municipal and university library systems.

Becoming a Forest Ranger

Forest rangers are hired from a civil service list generated from a written exam. To qualify for the position, candidates must meet certain educational requirements, pass a medical examination, a physical agility test, a thorough character investigation, and must possess a valid license to operate a motor vehicle in New York State. For more information on educational requirements, visit DEC's website (www.dec.ny.gov) and search for "Forest Ranger 1."



Historical Note: 1885 or 1895; which is it?

The Forest Preserve was defined and created in statute on May 15, 1885 with the passage of Chapter 283 of the Laws of 1885 by the legislature. The definition included all state lands within specified Adirondack and Catskill region counties. The 1885 legislation also directed that the Forest Preserve be "forever kept as wild forest lands" and directed that the land couldn't be leased, sold, or taken by any public or private corporation.

Unfortunately, the commission that was charged with managing the Forest Preserve



Susan L. Shafer

Tools of the trade have changed since the top photo was taken in 1947, and duties have expanded, but backwoods skills and knowledge of the land remain just as important to today's forest rangers.

continued to allow timber to be harvested from the preserve. In addition, theft of timber from the Forest Preserve was common, and enforcement was difficult because boundaries had not been surveyed.

Between 1885 and 1895, the definition of the Forest Preserve was amended to exclude land within villages and cities, and to include additional state land in other Adirondack and Catskill area counties. During this time, the Forest Preserve continued to be abused (clear-cut forests, erosion, and rampant forest fires caused by slash left by loggers), prompting

the 1894 constitutional convention to provide the Preserve with additional protection. The new constitution was approved by voters in November, 1894, and became effective January 1, 1895.

So, 2010 is the 125th anniversary of the creation of the Forest Preserve (by the 1885 statute) and the 115th anniversary of constitutional protection of the Forest Preserve (1895 being the effective date of the new constitution).

—Kenneth Hamm, DEC Senior Counsel



The author (in background) watches and learns as DEC scientists A.J. Smith and David Newman identify aquatic macroinvertebrates and record the results.

Bioneers

DEC scientists evaluate stream health by counting critters

By John Razzano, photos by Susan Shafer unless otherwise noted

Our truck crawls over a narrow tangle of roots and rocks that might be mistaken for a trail instead of a road. We're hemmed in on both sides by a thick canopy of trees that immerse us in deep shade. On this cool, clear, late-summer morning, I'm tagging along with a stream-sampling team, looking for a remote site on a creek somewhere in New York's Southern Tier. I glance at the rearview mirror for the other half of our crew, photographer Sue Shafer and biologist David Newman. "I think we lost them," I say. "Their car doesn't have the ground clearance," replies A.J. Smith, supervisor of DEC's Stream Biomonitoring Unit (SBU) and backwoods driver.

A.J. is one of the "bioneers" (a term I coined after spending time in the field with them) of stream biomonitoring. This nearly four-decades-old field of environmental biology combines both

simple and increasingly sophisticated techniques to evaluate water quality in streams and rivers by examining their aquatic biology; specifically, their benthic macroinvertebrate communities.

Benthic macroinvertebrates are creatures that live in a stream's bottom, and are at the bottom of the food chain. They are visible to the naked eye, and include everything from worms and leeches to the larval forms of beetles and flies. To a trained biologist, these organisms speak volumes about stream water conditions. They are ideal indicators of chronic, not just occasional, water contamination problems, because, unlike fish, they can't just swim away when pollutants degrade their habitat.

Since 1972, the SBU has sent out two-person teams to sample selected creeks and rivers across New York State. Visits are rotated annually among the 17 major basins of the state to try and sample all

the collection sites at least once every five years. Today's trip is part of the study of the Delaware River basin.

"We should have seen the creek by now," A.J. says, jerking the truck to a stop. He unfolds a map, checking it against the screen of a handheld geographic positioning system (GPS) device. "I think we should have turned a few seconds ago," he says, shifting the truck into reverse.

We reunite with the others, and then pull off the road at the exact spot indicated on the GPS. Jumping from our vehicles, we clamber into hip boots—there's no graceful way to do it—and unload the sampling equipment we'll carry on the short walk to our first site on Kerr Creek in the Town of Walton, NY. Our equipment is a combination of high-tech electronics for measuring some of the stream's key physical and chemical properties, and low-tech tools like a rectangular collecting net mounted on a long pole.



crayfish

Susan Shafer



stonefly

Missouri DNR



mayfly

David Cappaert, Michigan State University, bugwood.org

Bushwhacking our way down a steep bank, we reach the creek, a beautiful mountain stream with crystal clear water dancing over a rock-strewn bottom. Trees on both banks form a lush green umbrella over us.

The first order of business is figuring out the best place to sample. The water must be shallow enough to easily wade in our hip boots, but have a long enough stretch of riffles (shallow rapids) to provide a lively current over the required sampling distance.

Surveying the scene, A.J. leads us upstream. Jumping from boulder to boulder and picking our way over slippery rocks, we reach a good site. A.J. reads off the coordinates from the GPS while David notes the precise latitude and longitude.

Digital photographs are taken for a visual record, and then David uses an electronic instrument to measure some of the stream's physical and chemical properties, including stream conductivity, dissolved oxygen levels, pH and temperature. This

...three macroinvertebrate groups...are the gold standard of clean water—larval forms of mayflies, stoneflies and caddisflies...

information is correlated with the biological data to complete the picture of the stream's condition.

David continues to take notes as A.J. dictates a series of observations about the stream: estimated current speed; channel width and depth; vegetation, slope and soil stability of each bank; and make-up of stream bottom (gravel, sand, stone).

Preliminary tasks complete, it's time to discover what benthic macroinvertebrates live here. We'll snag our quarry using a simple technique called "kick sampling." Actually, the method could as easily be called "shuffle sampling." The idea is to hold the kick net before you as you shuffle along downstream

for a prescribed time and distance, kicking up sediment, stones, plant debris and anything that lives on the bottom, and letting the current wash them into the net.

A.J. finds a good route through the stream, rinses the net to billow out its mesh, and begins shuffling his way downstream. After five minutes, he hauls out and sashes over to a flat boulder where a shallow, white-enameled steel tray partially filled with water sits waiting.

The net is emptied into the tray for a quick review of its contents. Stones and other larger pieces of detritus are discarded, but not before aquatic organisms are brushed off and saved with the rest of the sample. The tray instantly becomes a shallow aquarium, teeming with a host of bizarre but fascinating-looking creatures. I'm instantly transported back to my childhood when I use to turn over rocks in a nearby stream and wait until the water cleared to see what I uncovered.

The three macroinvertebrate groups that are the gold standard of clean water—larval



Under A.J.'s watchful eye, author John Razzano learns that sampling for benthic stream organisms in the Delaware River isn't as easy as it looks.



Cool, clear, shaded mountain streams contain plenty of dissolved oxygen—the perfect condition for a variety of insect and other invertebrate species. Carefully analyzing which species thrive in an area tells biologists a lot about a stream's chemistry and water quality.

forms of mayflies, stoneflies and caddisflies—are plentiful. Other creatures more tolerant of pollution, like aquatic worms and midge larvae, also occur, but in smaller numbers. A.J. makes a fast estimate of the relative diversity and density of various organisms, and, as expected, assesses the fauna at this site as “very good,” with a healthy and diverse macroinvertebrate community.

Field assessment complete, the sample is strained and placed in a plastic jar. Back at the truck, 190-proof ethyl alcohol is poured into the jar, instantly pickling the organisms. The jar is labeled with the site name, number and date, and kept with other collected samples until the crew returns to the office in a few days. Piling back into our vehicles, we drive to another sampling site a mile downstream. Once again, the kick sample reveals a diverse, healthy community of bottom dwellers.

Finished with Kerr Creek, we move on to a site on the West Branch of the Delaware River in the Town of Beerston, NY. Here, I get a turn to do the “riffle shuffle” and haul in some water bugs.

As expected, the West Branch is much bigger than Kerr Creek. In fact, the channel is about 75 feet across, with clear water and a fast, strong current. As we hike along the shore to the sampling site, I stare nervously at the racing torrent.



Benthic macroinvertebrates...speak volumes about stream water conditions. They are ideal indicators of chronic, not just occasional, water contamination problems...

Since this site has been sampled many times before, A.J. knows just where to go. Arriving at the spot, A.J. hands me the kick net, saying “Here you go. Walk out a few feet and start your run.” The soft sand and gravel bottom near shore quickly turns to large, slippery stones. I gingerly concentrate on every step. “This isn’t as easy as it looks!” I shout over the rushing water. “You’re doing fine!” A.J. yells, “That’s good! Start there!”

I turn downstream, steadying myself with the pole of the kick net. The force of the current instantly increases, pushing my legs from behind and pulling my arms as the net bulges with water before me. I advance slowly, digging in and turning each boot as I go. Even in thick rubber boots, this kick-twist motion is hard on my feet. After only about two minutes, much sooner than the usual five, the net is too heavy and I have to haul out.

We immediately see the problem—the net is full of large, round stones; so full in fact, that the mesh has started to tear! We all share a good laugh as I ask, “Is this going to be any good?” “Bring it over. We’ll check it out,” answers A.J.

Looking through my net full of rocks, we notice that some are capped with green toupees of aquatic plants. A.J. is concerned about this abundance of bottom vegetation, which can signify excess nutrients

like nitrogen and phosphorus in the water. Excess nutrients can come from a number of sources, including leaking septic systems, runoff from fertilized farm fields and suburban lawns, or inadequately treated water from aging sewage treatment plants. Like many states, New York is facing a looming crisis with regard to updating our aging water treatment infrastructure.

Removing the contents of the net, we discover I caught more than just rocks. Beetle larvae called water pennies are attached to some of the rocks and we notice fingerling bullhead as well. A.J. scrapes off diatoms—a form of slimy algae—from some of the rocks, and we also find rusty crayfish, an invasive species named for the red spot on its carapace.

Because my run was cut short, A.J. decides to tie a knot in the torn net and take another sample. Despite his concerns that the abundance of weeds may indicate a potential problem, he assesses the aquatic habitat as “very good” because his sample reveals a healthy balance of mayfly, caddisfly and stonefly larvae. With that, the field component of our sampling is complete.

Three months later, my photographer colleague Sue and I pull into the SBU’s offices in Troy to see what happens to the stream samples in the lab. Once again, A.J. is our tour guide.

Become a Stream Scientist

If you find stream sampling and lab work to your liking, you might be interested in a career as an environmental scientist. To be considered for this position, one must have a bachelor’s degree and pass a civil service subject exam. Titles in DEC’s Stream Biomonitoring Unit include Environmental Program Specialist, Environmental Engineer, and Research Scientist. For more information on a career with DEC, visit our website at www.dec.ny.gov, and search the term “careers.” To inquire about internship and volunteer opportunities which are sometimes available, call 518-402-9273.

You can also check out DEC’s website to learn more about stream biomonitoring and the aquatic macroinvertebrates found in New York’s streams and rivers. Enter “stream biomonitoring” in the search engine.

The lab is lined with shelves and cabinets filled with sample jars. Long countertops hold computer workstations, stereomicroscopes, and other equipment used to analyze samples. One entire wall of shelves has nothing but jars labeled with the Latin names of the macroinvertebrate species they contain. These are reference samples for use when biologists are trying to identify a particular specimen and need to compare it to a confirmed example.

A large, clear acrylic cylinder mounted on a metal control box contains several jars of fish and crayfish. It's explained that this is used for freeze-drying tissues of various organisms. The freeze-dried organisms are analyzed at another lab for contaminants that can accumulate in the tissues. This is usually only done when particular pollutants, like pesticides or toxic metals, are suspected.

A.J. introduces us to two aquatic biologists, Diana Heitzman and Brian Duffy, who count and identify macroinvertebrate species. As they analyze the faunal community in every sample, they log each species and their numbers into a computer database.

Samples are prepared for analysis by pouring off their alcohol preservative, removing larger pieces of detritus, and placing a small amount of material (a subsample) on a petri dish. This subsample is carefully examined under a stereomicroscope, and 100 organisms are counted out. Brian is sifting through a subsample with two pairs of forceps, poking and pulling macroinvertebrates into groups according to their biological family and genus. There is a digital camera attached to his microscope so he can create a permanent record of each organism. As he sorts, he counts the groups of various creatures: 23 Ephemeroptera (mayflies), 18 Plecoptera (stoneflies) and 15 Trichoptera (caddisflies), among others. These three families are called EPT for short. A sample rich in EPT species most likely came from water that is clean.

Once Brian has finished sorting and counting, he passes the sample to Diana who uses a stronger compound-lens microscope to look at very fine distinguishing details. Such close scrutiny is the only way species can be positively identified. As she works, Diana notes how many of each species she finds among the 100-organism subsample, further refining the census.



While summer days are reserved for stream sampling, winter lends itself to laboratory analysis, wherein samples are more completely indexed and biota more closely identified.

And so it goes, year after year. A.J., David, Brian, Diana and DEC's other stream "bioneers" continue to sample the state's vital network of water courses, finding satisfaction in discerning what the humble bottom dwellers they collect say about the health of the environment. For in studying these lowly creatures, they help ensure that our irreplaceable streams and rivers will continue to sustain all life on this water planet we ironically call Earth.

John Razzano is a contributing editor to *Conservationist*.

What You Can Do

Help protect our water resources:

- Don't pour or flush discarded pharmaceuticals down your sink or toilet. Visit www.dec.ny.gov/chemical/45083.html for information on proper drug disposal.
- Reduce the use of pesticides and fertilizers on your lawn—they can enter local streams and rivers via runoff.
- Never pour used motor oil down a storm drain. Instead, recycle it; most service stations in New York accept used motor oil.

The background is a dark blue night forest. Silhouettes of trees are visible against a lighter blue sky. Numerous small, glowing fireflies are scattered throughout the scene, some appearing as bright white dots and others as fainter blue dots. The overall atmosphere is serene and magical.

Fireflying

Hunting the *Photinus greeni*

By Lee Stephanie Roscoe



*Looking into my backyard one June evening,
I spotted them. Little blinking lights twinkling all around.
I love it when the fireflies come out—
they herald that summer has officially arrived.*

Watching the lights blink here and there, it occurs to me that it looks like Morse code. And in a way, it is—these little insects are communicating with each other, signaling to attract mates. What’s amazing is that despite the fact there are approximately 175 different species of fireflies in the U.S., all flashing and blinking in a beautiful, yet seemingly arbitrary display, most are able to easily connect with their own species.

That’s because what appears random to us, is actually a well-choreographed show, with each species’ flashes varying in color, length, and pattern. This evolutionary adaptation has enabled fireflies to survive throughout the years.

But fireflies may be in trouble. Over the past few decades, firefly populations have been declining. I noticed it in my neck of the woods, and wanted to learn more about these fascinating bioluminescent beetles (yes, despite their name, they are beetles, not flies). In my research, I discovered a program called “Firefly Watch” (see “Firefly Watcher” on page 27) being run by the Boston Museum of Science, and decided to contact Kristian Demary, one of the biologists involved with the project.

Agreeing to let me tag along with her in the field, Kristian met me in a local park on Midsummer’s Eve, shortly after dusk. It was misting and she was anxious to set out to study fireflies.

We covered our bare skin in bug

repellant to guard against mosquitoes, but made sure not to leave any on our hands to protect any fireflies we might handle. Kristian donned a miner’s lamp and off we went.

We were on the hunt for *Photinus greeni* (Kristian pronounced it “green eye”), a firefly that only flashes from about 8:20 p.m. to 9:45 p.m. As we walked, Kristian described how firefly species have evolved to separate themselves “spatially and temporally” to avoid confusion between species emitting similar flash patterns. She explained how the various species divide up the night as well as the summer season, each appearing for about an hour every evening over the course of a fortnight, and only in certain temperatures. The hotter and moister the night, the faster most fireflies will flash. Kristian also said that while all fireflies use moist areas, they will separate into niches. For instance, *Pyrractomena* spp. prefer stream banks, *Photuris* spp. prefer trees, and *Photinus* spp. prefer wet grassy areas.

Arriving at our destination, Kristian flashed her penlight on and off in the correct code to mimic a male *greeni* seeking out a mate: two short pulses with a pause of about one to four seconds between the set. It didn’t take long before a light went off in the grass. Kristian bent to the ground, shining the blue miner’s lamp down at the grass. She quickly located the *Photinus* female, not much bigger than a large black ant, and pointed it out to me.

Firefly, shown larger than life
Photinus, sp.—adult



As we continue up the road flashing, Kristian tells me about her background. An evolutionary biologist, she is studying fireflies in part to try and find out how mate selection and predation avoidance drives evolution, and how they are reflected in morphology and behavior. In other words, how does form affect function, and function form? How do females select

females perch on nearby vegetation. Not so with *Photuris*; females will fly and sometimes mimic the attracting flash code of a consenting *Photinus* female to lure unsuspecting *Photinus* males to their death. Consuming male *Photinus* provides nourishment for *Photuris*'s eggs, and makes the adults toxic to predators.

Though certain flashless fireflies may emerge at the end of winter, most flashing species in the northeast come out between Memorial Day and Labor Day.

mates? Do females have a post-mating choice whereby they can actually store and determine which sperm is best, and use it to produce offspring? What do the males do to make certain their sperm is chosen?

Kristian confesses to me that it was William Rice's pioneering work on sexual conflict and controlling behaviors in *Drosophila* spp. (fruit flies) which was the reason she decided to become an evolutionary biologist while still an undergraduate at Mount Holyoke. She wanted to apply Rice's findings to fireflies, to see if there were parallels.

"I just saw *Photuris* up in the trees," Kristian whispers. We are quiet.

Photuris is in many ways the real star of the firefly world; it's a bully, the predator who sets the rules. In most species of fireflies, it's largely the males that fly around flashing while the

A truck drives by and a male park ranger sticks his head out asking if we're OK. It must look pretty weird, two females by the road flashing a dainty pen light on and off in Morse code.

"We're looking for fireflies," Kristian assures him before he drives off.

Kristian then pulls out a thermometer and comments, "Good. It's above 60°F. *Greeni* won't come out below that." Then she explains that we still may not see a lot of *Photinus* flashes because if it spots *Photuris*, it stops to avoid being predated.

"Is it only *Photuris* females which are cannibals?" I ask.

"No. We had one *Photuris* male in the lab suck out *Photinus* blood."

"Oh. And why are *Photuris* males as big as the females?"

"Perhaps to avoid predation by its own female."



Scientific illustration by Arvin Provonsha, Purdue Department of Entomology)

The firefly, also known as the lightning bug, is actually neither a fly nor a bug, but a beetle. This particular firefly is called Say's firefly (*Pyrausta nictans*), one of about 175 species of fireflies in the United States.

This leads to a discussion about the habits of other local species of fireflies and I learn that *Pyrausta* comes out earlier in the spring than the two main players, perhaps avoiding predation by seasonality, as well as by tactics. *Pyrausta* will dive down suddenly if attacked, and its flash code is sporadic. Since I've seen this species during the daytime in May, I ask her about timing.

"Everything's based on rainfall and temperature, so it will vary every single year. It's not a constant," Kristian says, careful to qualify everything she tells me. "Though certain flashless fireflies may emerge at the end of winter, most flashing species in the northeast come out

Firefly Facts

- Are beetles, not flies.
- Prefer it hot and humid; will not flash under 54°F. The more intense the weather, the more they light up.
- Prefer moist areas—wet meadows, forest edges, farm fields with tall grass, and wild bog, marsh, stream and lake edges.
- Spend most of their lives (up to two years) as grubs. The nighttime lights generally occur during the last two weeks of their lives.
- All firefly larvae (called glow worms) glow, but not all adult fireflies glow or flash. Light is created by an enzyme in the firefly's tail that drives a chemical reaction.
- Approximately 175 species of fireflies occur in the U.S.
- Species' flash displays vary in color, length, and pattern of repetition from each other.





David Cappert, Michigan State University, bugwood.org



Stacy Gold

FIREFLY WATCHER

Don Salvatore wants fireflies to be around in a century. To that end, he and the Museum of Science in Boston, Massachusetts where he works, have teamed up with researchers from Tufts University and Fitchburg State College to conduct a firefly census as a means of tracking these amazing insects. Now in its second year, the census uses volunteers to observe and report on firefly activity in or near their backyards. Last year, there were 1,500 participants in more than 30 states east of the Rockies (fireflies do not shine west of them).

Firefly populations appear to be declining throughout the U.S. While no one knows for sure why, many feel that habitat change may play a key role. Fireflies are sensitive to habitat disturbance and to moisture levels in the soil. In addition, pesticides may be taking a toll on their numbers and researchers also suspect that artificial light, like streetlights, impacts a firefly's ability to find a mate.

Scientists hope the census will shed light on the geographic distribution of fireflies and their activity during the summer season.

Firefly watches occur at many environmental education centers. For more information on how to participate, visit www.mos.org/fireflywatch.

The *Photinus* female is not much bigger than a large black ant.

between Memorial Day and Labor Day. And the further north you go, the fewer species you find," she added.

Our attention is grabbed by a flash down low. *Photuris*. Kristian tells me that *Photuris* is more flexible in its habits as well as its flashes, flying both high and low through various habitats—on the prowl.

"Oops, one over there too," she whispers.

"Something's flashing high up in front of me," I say.

A small airplane growls overhead, prompting me to ask, "Do fireflies ever flash at plane lights?"

"The females will flash at anything if they're desperate enough: my head lamp, headlights..." she says in her small, articulate voice.

"Desperation born of brevity?" I ask. (With only a fortnight in which to live, love, and leave offspring behind, I'd be desperate too!)

"Probably."

As we get into the car to explore some more, she tells me that the part of the firefly's back end that lights up is called a lantern and that the chemical reaction that makes it glow is called the luciferin-luciferase reaction. Although this chemical's primary function is to attract a mate, it also serves to warn predators that fireflies' bodies contain noxious chemicals.

We part after driving around in fog too thick to see any fireflies. I promise to send her a list of my favorite areas where I have seen the three different species together. I drive home in a quiet mood, pondering how such a small light can potentially illuminate so much, and feel happy that much remains a mystery.

Pulling into my driveway, I vow to continue to do my part to keep an eye on firefly populations—not that I need an excuse to go outside on a warm June evening and watch the twinkling spectacle that is fireflies. It's summer's light show of flash-dancing diamonds in the grassy fields.

Lee Stephanie Roscoe is a playwright, writer, and longtime environmental educator. To contact Lee, visit www.capecodwalks.net



Barb Loucks

New Field Notes

Check out DEC's new electronic newsletter, *Field Notes*. Published by the Division of Fish, Wildlife and Marine Resources, the newsletter provides a variety of information regarding the state's fish and wildlife species, including recreational opportunities, regulation changes, wildlife viewing events, press releases, and other wildlife news stories. To subscribe, visit the *Field Notes* webpage at www.dec.ny.gov/about/63801.html on the DEC website.

Free Fishing

Panfish, bass, walleye, pike, salmon, trout and muskie—New York's freshwaters have it all, and you can fish for them for free during New York's Free Fishing Days. Every year, the last full weekend in June is designated as Free Fishing Weekend in New York State. This year's dates are June 26 & 27; during those days, anyone can fish the state's waters without a license. It's the perfect opportunity for first-time anglers, or those who have drifted away from the sport, to sample the incredible fishing in New York. In addition, DEC sponsors a number of events (such as

Plentiful Peregrines

Last year, DEC staff counted 73 territorial pairs of peregrine falcons in New York State, a record for this state-endangered bird. Sixty-one of those pairs bred and produced 132 offspring. This is a huge increase from the 1960s when peregrines all but disappeared from the state due to adverse effects of organochlorine pesticides, including DDT. Peregrines nest on cliffs, bridges and buildings. Today there are about 20 nesting pairs in the metro New York area, 27 in the Adirondacks, a pair at every major bridge between New York City and Albany, and about 17 pairs throughout the rest of the state. DEC consistently works with building and bridge authorities to minimize the impacts that construction work can have on nesting peregrines. For more information, visit www.dec.ny.gov/animals/7059.html.

New Camping Guide

It's summer in New York State and camping season is in full swing. If you and your family are planning a camping vacation, be sure to check out the updated state camping guide, which you can download from DEC's website at www.dec.ny.gov/outdoor/camping.html. It contains information about DEC's 51 campgrounds and those run by the Office of Parks, Recreation and Historic Preservation, as well as helpful tips, guidelines, a map and photos.



DEC has a new blog, State of Green, featuring commentary on a wide range of environmental issues and insight into the actions DEC is taking to improve New York's environment and create a more sustainable future. Check it out at: <http://decstateofgreen.blogspot.com/>



Susan Shafer

family fishing clinics) in which participants can fish for free. To find an event near you, check out DEC's website at www.dec.ny.gov/outdoor/27123.html.

BRIEFLY

Ask the Biologist

Q: I snapped this photo of a fox family in my backyard. They are living in what used to be a groundhog hole by the side of my pool. Is there something I should do, and do you know if they will move along once the kits are grown?

Eric Scheffel
Albany County

A: This is a great question that raises an important topic. More and more people encounter wildlife in their own backyard. When you spot wildlife like these gray foxes, you shouldn't approach them, but simply observe them from afar. Also, be sure to keep pets away. If left alone, these foxes shouldn't cause



any problems, and they will increasingly wander off as the summer progresses and the young disperse.

Early summer is a time when many people find young wildlife. While it may appear as though they have been abandoned because you can't spot any adult wildlife nearby, in most cases this is incorrect. Often, wild animal parents stay away from their young when people are around, waiting nearby for you to leave. When people mistakenly "rescue" young wildlife, they are removing them from the protective care of the parents.

Most rescuers quickly discover they can't provide proper care, and the young animals die. Those that do survive have missed natural experiences critical for learning how to survive in the wild.

So, if you find young wildlife, be sure to leave them alone. Remember the rule, If You Care, Leave Them There. However, if you encounter a young wild animal that is obviously injured or orphaned, contact a licensed DEC wildlife rehabilitator—they are the only people legally allowed to receive and treat distressed wildlife. Visit DEC's website www.dec.ny.gov/animals/6956.html for more information.

—Eileen Stegemann, Assistant Editor

REVIEW by Fred LeBrun

Wild Times: Your Personal Guide to 120 Hiking and Paddling Adventures in the Adirondacks

132 pages; soft cover \$14.95

Adirondack Explorer Magazine

www.adirondackexplorer.org; 518-891-9352

Hiking and paddling share a paradox. Both can be boiled down to repeating a footfall or a stroke over and over until we get to where we're going; endless repetition until we are in a rhythm or Zen-like trance. Yet, for all the sameness with each stroke or stride, we are in a new place and experience a moment we can never repeat again.

I was reminded of this while thumbing through the *Adirondack Explorer's* latest compilation of hikes and paddles gleaned from 11 years of the bimonthly magazine. It is primarily a guide to specific Adirondack hikes and paddles. Consequently there would seem to be a similarity to much of it. Yet, by getting into each slice-of-life story that accompanies the individual tromping or paddling adventures, *Wild Times* yields a rich and intriguing diversity that continues to live beyond the original experience.

This is far more than a field guide. These stories make for compelling armchair adventuring, which is frequently a precursor to the real thing.

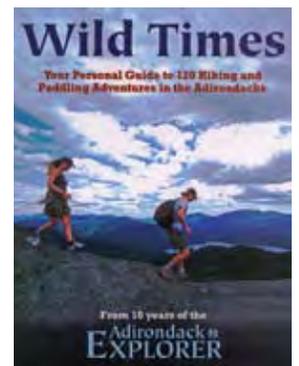
As a guide to specific mountains, trails and paddling routes, what distinguishes this collection is its many voices and variety

of offerings. These reflect appropriately the diversity of the Adirondacks themselves: from Buck and Black Mountains overlooking very civilized Lake George; to Poke-O-Moonshine peering at the once prosperous commercial shipping lanes of Lake Champlain; to the wild interiors and High Peaks. There are hikes and paddles short and long, challenging and easy, for very old and very young and anyone in between. It's all here in one large magazine-style format, the same size and stock as the magazine itself.

We learn infinitely more about these hikes and paddles than we would from one of the established Adirondack guide books because of the superb photography of Carl Heilman II, Nancie Battaglia, Susan Bibeau and Bill Ingersoll that routinely accompany each story. The line-drawn maps by Nancy Bernstein of each hike and paddle are amazing when we see the volume and variety she's created over the years.

So, whether you're a regular reader, just an occasional one, or a stranger, *Wild Times* is either an excellent introduction to the *Adirondack Explorer*, or a worthy compilation of familiar good work. In either case, it's worth appropriating.

Fred LeBrun is a staff writer for the *Albany Times Union* newspaper.





Coyote or Dog?

While out with a 4-H group in a hemlock swamp near Ithaca on March 23rd, I unexpectedly came across what I believe is a coyote den. Looking in, I was surprised to see the movement of puppies. I snapped several photos and quickly left, not wanting to disturb things any more. Are these coyotes?

David Hall
Ithaca

Your photo certainly piqued the interest of our biologists. We checked with Robin Holevinski, a PhD candidate studying coyotes at SUNY ESF, and here's what she had to say:

"The den site sounds like it corresponds to what a coyote would use, but these pups do not quite look like coyote pups. A photo that we collected last year of a coyote den shows some differences in the shape of the pups' faces, although they do look similar. I also would not expect to see the white markings on the toes (of the standing pup) in a coyote pup. The fact that the pups were about 12 inches long on March 23rd indicates breeding in early January, which is not typical, but not impossible for coyotes."

Robin provided this photo of known coyote pups, so we thought we'd let our readers decide. It would be nice to see the pups again in a few weeks to know for sure, though.

—Dave Nelson, Editor



coyote pups

Fishing Fun

My ten-year-old nephew Duncan Lindsay went fishing at the DEC boat launch on Schroon Lake and caught and released this 20-inch largemouth bass. His simple gear was a worm and a bobber. The smile on his face says it all: fishing dreams come true in New York State!

Tom Lindsay
Albany



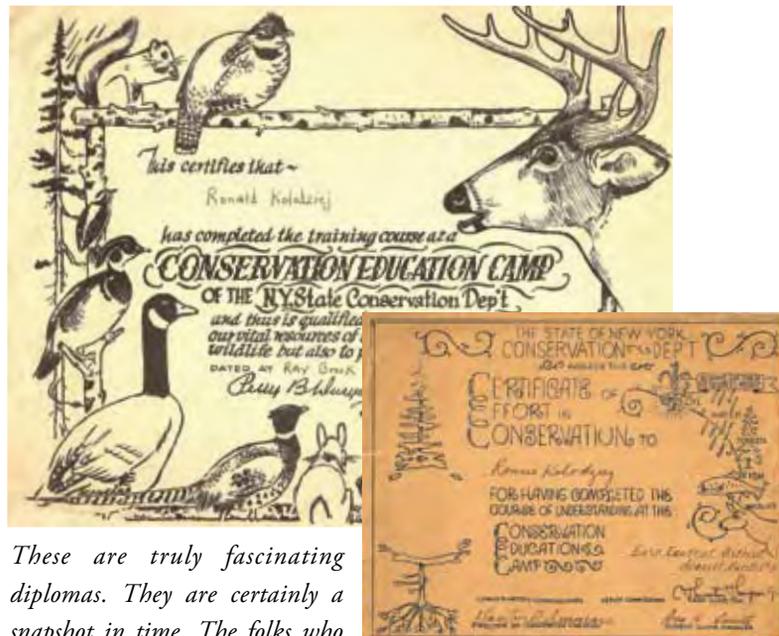
What a great photo. It's always nice to hear of a family's fishing adventures. Your nephew is quite the fisherman—that's a catch anyone would be proud of!

—Eileen Stegemann, Assistant Editor

Old School

Bill Sharick's fond memories of Camp Rushford in the 1960s (*Rushford Reflections*, February 2010 issue) generated many warm remembrances, including this one from longtime friend of the magazine, Ron Kolodziej of Fonda:

"I thought you might like to see my diplomas—circa 1951 and 1952—from two Conservation Education Camps. I know they date me, but they are prized possessions."



These are truly fascinating diplomas. They are certainly a snapshot in time. The folks who currently oversee DEC's education camps were most impressed. The fact that you retained these in such great shape for nearly 60 years is a clear demonstration of how important those weeks at camp were to a budding young conservationist!

—Dave Nelson, Editor

The Price of Litter

While on a walk with his camera recently, my husband Brian took a photo of a beautiful deer with a plastic fast-food drink lid stuck to its poor nose. I think the photo speaks volumes.

Christine Straight
Pomfret,
Chautauqua
County



This is a compelling photo, and one that clearly illustrates the consequences of littering. Based on the photo, it does not appear the garbage is preventing the deer from eating, though it certainly can't be comfortable. It is a good reminder that we all need to be mindful of our resources and the world we share with other creatures.

—Jenna Kerwin, Staff Writer

Editor's Note: This photo was taken in Shumla, quite near the boyhood home of your editor. I have fond memories of the area and can recall the mink farm there. —Dave Nelson

Marble Fawn

I thought you might be interested in this photo, taken in Turnpike State Forest in Allegany County. I stumbled across the fawn and snapped a few pictures.

Bradley Bledsoe
Almond, Allegany County



Your photo has captured a rare sight—a skewbald fawn. A fawn's coat is normally brown with white spots, but in a skewbald fawn the white is predominant. Deer with this trait are uncommon in the wild because they are easily seen and likely suffer higher mortality rates.

—Eileen Stegemann, Assistant Editor

Teenage Bug

While sitting in my backyard, I encountered this unusual-looking insect. With some research, I found an article on the appearance of cicadas. Is it normal to have seen this insect by itself, and is it true they will surface from underground every 17 years?

Dorothy Desautels
Troy



Cicadas tend to occur in 13- or 17-year "broods," which means they spend those years in the soil, clinging firmly to tree roots and feeding on sap. They then pupate and metamorphose into adults to fly away, mate, lay eggs and begin the cycle anew. They do

not emerge everywhere at the same time and each brood varies in the overall population size. The cicadas that emerge this year will likely be from eggs that were laid either in 1993 or 1997.

—Jerry Carlson, DEC Research Scientist



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Back Trails

Perspectives on People and Nature

Nature only a blue jay's call away by Reba Laks

Some kids are just naturally drawn to the outdoors. While those who grow up in rural areas have nature at their doorsteps, those of us who got our start in urban environs find nature to be a bit more elusive. Still, it can be found if one looks closely.

When I was young, my family lived in a Bronx housing project. At age six or seven, I wasn't conscious of paying any more attention to creatures and plants than anyone else. I played hopscotch and jumped Double Dutch rope along with the other kids. In the playground, I climbed the monkey bars, swung as high as I could on metal swings, and ran through sprinklers in the summer. I raced along the pavement on roller skates, and ran around with sparklers at dusk on the Fourth of July.

The project did have areas of grass and trees, but these were closed off by hedges and wooden fences and wire. One risked a handful of splinters and a palm stained red if you tried to climb over the fence, as well as being yelled at by maintenance workers. My third-floor apartment bedroom window overlooked one of these fenced-in areas and the cool green grass beckoned to me below—seen, but out of reach. Yet, directly outside my window was an oak tree, its branches dipping toward the ground. Strikingly-colored blue jays called raucously as they flew among the branches. Grey squirrels leaped about. In the courtyard between the buildings, little sparrows hopped about looking for crumbs that people might have dropped. In spring, a sweet-smelling white flower blossomed on the hedges. Maple trees



Ray Minnick

grew in the surrounding neighborhood. Like many kids, I took their seeds and stuck them on my nose.

I didn't know the names of many of these creatures and plants, but their appearance was etched firmly in my mind. Perhaps it was better that no one identified them for me; instead, I absorbed their characteristics. Years later, as I began to study natural history, it was like rediscovering old friends. "Ah," I would say to myself, "that was a pin oak outside my window, a privet hedge along the walkway and a house (or English) sparrow in the courtyard."

I remember being happy in the housing project. There were other children to play with and I always felt safe. My mother was only a yell away; I freely went up and down the building elevator by myself. I did envy the occupants of nearby houses with small backyards of their own. Inside were gardens of tomato plants and flowers. In

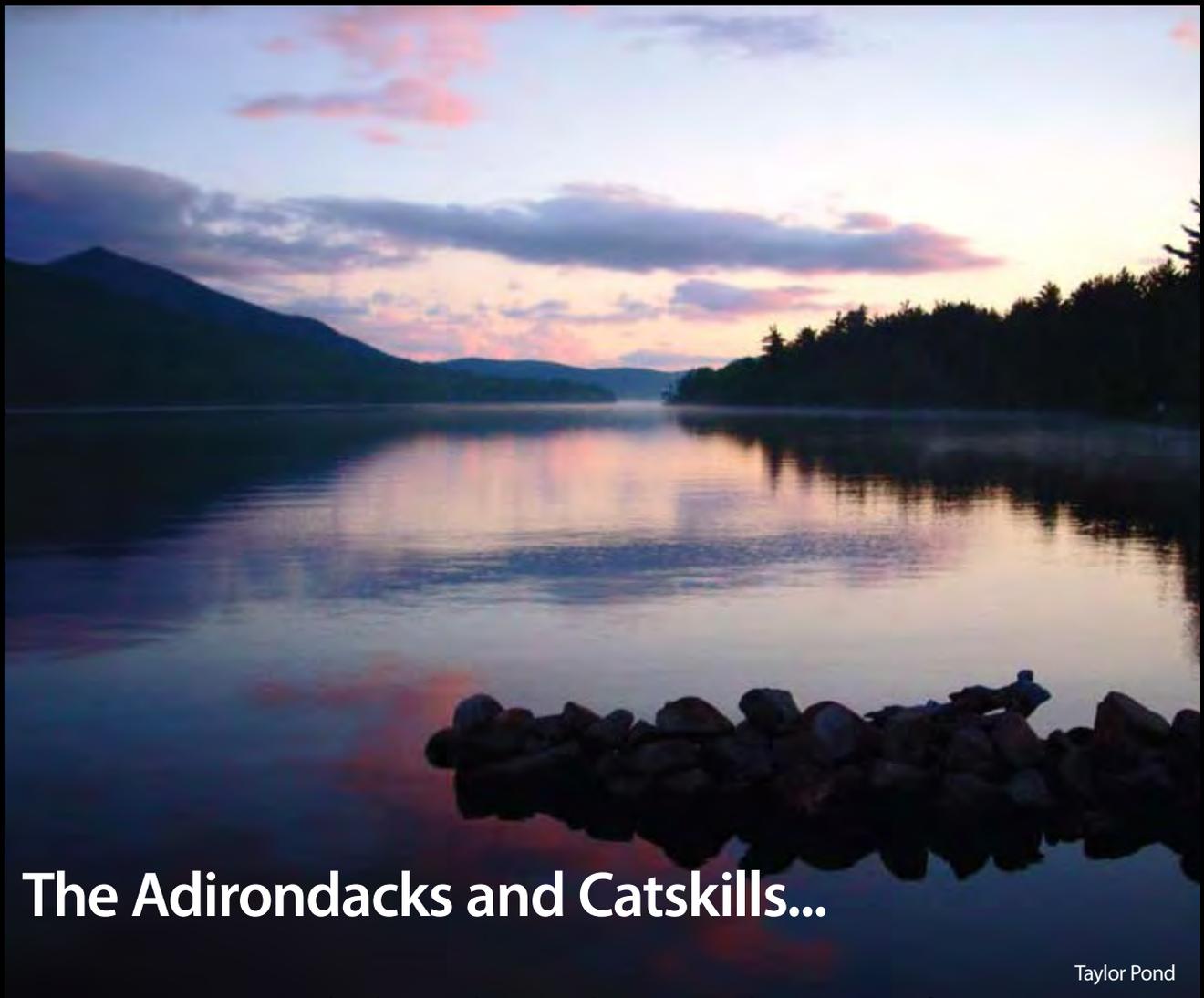
my young mind, I resolved that one day, I would have a plot of land to call my own.

My carbon footprint has certainly grown over the years. Back then, I walked with friends to the playground, with my brother to school, and with Mom to nearby stores. Our family had a car that Dad drove to work, but we also traveled by train and subway. Ours was not a pollution-free environment, considering the smog and ever-present vehicle exhaust.

When I was eight, my family left the project and moved to Staten Island in search of the American dream—owning our own home. There we did indeed have a small backyard. Though life on Staten Island was, in some ways, culture shock to me (the kids didn't play hopscotch, Double Dutch or roller skate), the fields, woods and local pond quickly lured me outdoors. Tree-climbing, exploring, sledding and skating quickly became favorite activities. While I found some aspects of adjustment into a new community difficult, nature and the outdoors became a healing retreat.

For years now, I have lived in a house in the Catskills on a couple acres of land. Deer, turkeys, opossum and occasionally even a bear wander through my backyard. Today, I couldn't imagine going back to a big-city apartment building. Still, when I think back on my urban beginnings, I remember family, friends to play with and nature only a blue jay's call away.

Reba Laks is director of DEC's Stony Kill Environmental Education Center in Poughkeepsie.



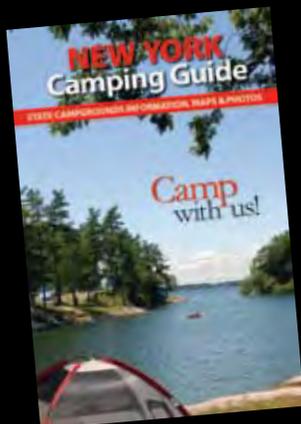
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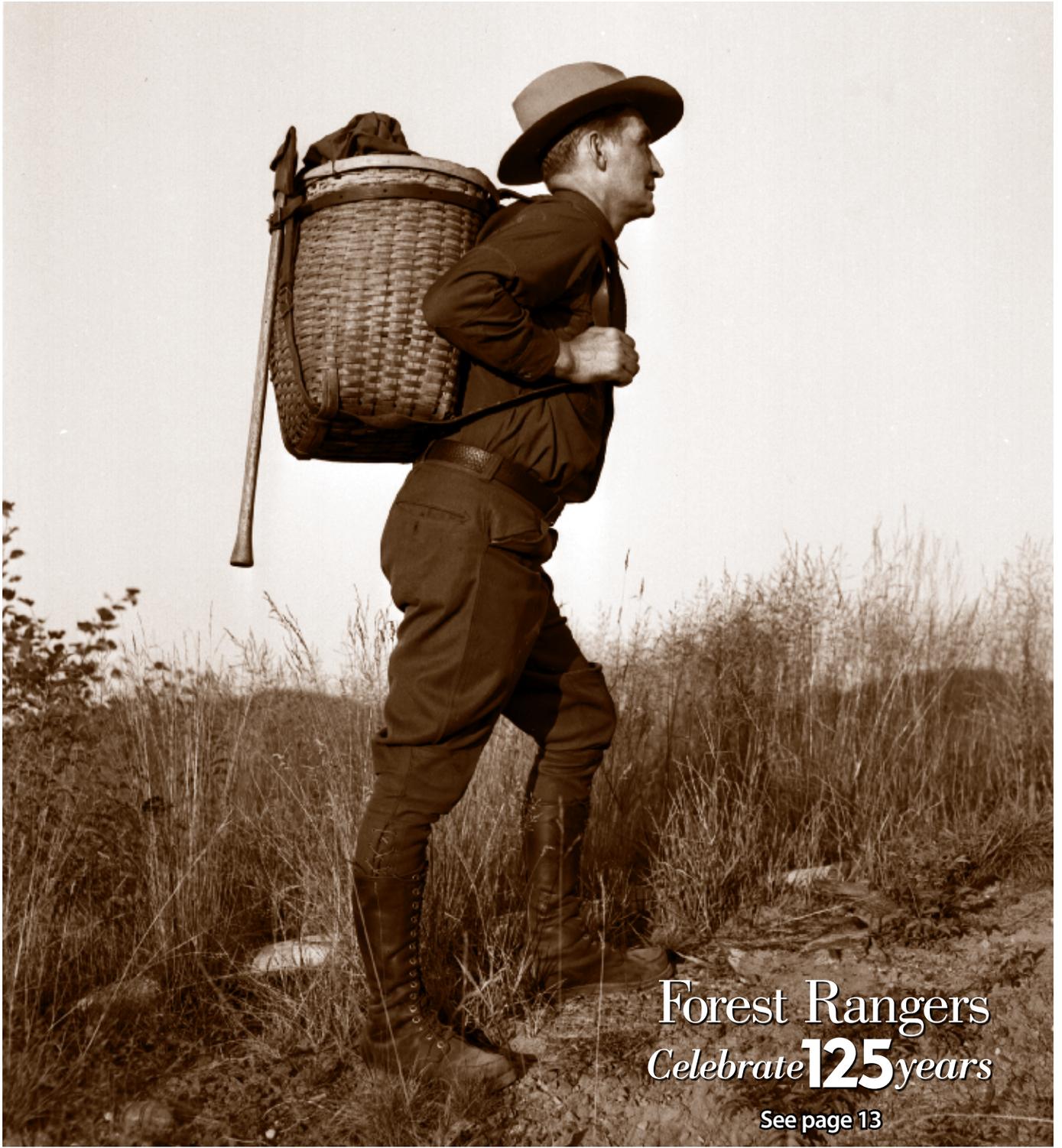
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