



THE LAND STEWARD

Newsletter of the Finger Lakes Land Trust

Vol. 19, No. 1

working to protect the natural integrity of the Finger Lakes Region

Winter 2006-07



BETSY DARLINGTON

Emerald Necklace Campaign Launched with Key Acquisitions

With the completion of two land protection projects at year-end, and progress on several conservation easements in the works, the Land Trust's campaign to create an Emerald Necklace around Ithaca got off to a fast start.

Just south of Ithaca, the Land Trust purchased two properties totaling 130 acres. Both parcels border existing protected open space and had long been identified as priorities for conservation. Land purchased from the Babcock family features more than a mile of frontage on the Cayuga Inlet and also hosts a segment of the Finger Lakes Trail. A wooded parcel purchased from David Galat completes the northeastern boundary of the Lindsay-Parsons Biodiversity Preserve.

The Babcock property borders both Robert Treman State Park and a Cornell Plantations Natural Area. It is also located just south of the Land Trust's Sweedler Preserve at Lick Brook and is adjacent to private land under conservation easement. Its steeply sloping hillsides feature diverse hardwood forests and are visible from State Route 13 and Treman State Park.

"The Babcock property features an impressive array of natural resources and is also part of a contiguous block of 2,000 acres of protected open space," says Land Trust Executive Director Andy Zepp. "We're grateful for the Babcock family's generations of careful stewardship of this property as well as their willingness to sell the property for

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The Babcock property features more than a mile of frontage on the Cayuga Inlet

Wesley Hill Preserve Grows!

The Land Trust recently purchased 32 acres of handsome woodland in the town of Richmond in Ontario County, a key acquisition that not only expanded its Wesley Hill Nature Preserve, but also extended protection of Briggs Gully — one of the Finger Lakes region's largest gorges.

The parcel of land has been a Land Trust conservation priority for some time, both because it borders the Land Trust's existing Wesley Hill Preserve on two sides and because the gully runs through it. The purchase from Canadice resident Don Schenkel also completes protection of the gully's largest tributary.

The expanded 390-acre Wesley Hill Preserve is part of a growing network of protected open space in the western Bristol Hills. Located on Gulick Road in South Bristol, the preserve remains popular among hikers and wildlife watchers. Several miles of well-maintained trails run

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BILL DAVIS

The latest addition to the Wesley Hill Nature Preserve includes a portion of Briggs Gully, one of the largest gorges in the Finger Lakes region

PERSPECTIVES



A black bear sow and its triplet cubs recently observed ambling through the Land Trust's Sweedler Preserve at Lick Brook

were likely taking advantage of one of several forested wildlife corridors in the Ithaca area.

In this issue Eben McLane explains how recent studies have documented the value of ecological corridors. The issue also highlights three land acquisitions recently completed by the Land Trust. Each of these projects extends protection of wildlife corridors within our region.

Our two most recent acquisitions in Tompkins County were probably traversed by the same sow and cubs seen at Lick Brook. The Babcock and Galat properties, though five miles apart, are both located on the same forested ridge-line that extends southward from Ithaca for many miles. Wildlife such as the

black bear are known to use these linear forests as travel corridors.

In Ontario County, our latest addition to the Wesley Hill Nature Preserve also harbors the occasional black bear. The Schenkel property is part of a growing network of protected lands within the Bristol Hills, an area encompassing some of the most wild and rugged terrain in the Finger Lakes.

While each of these projects will clearly benefit our wildlife, a key question for us at the Land Trust is what about the value of corridor protection to us humans? How do we value the opportunity to hike through miles of forest close by, without having to travel to some remote wilderness area? How do we put a price tag on an otter suddenly encountered during a stroll at dusk on a summer evening near home?

Here in the Finger Lakes, we have a unique opportunity to create a network

of corridors that will benefit hundreds of plant and animal species — as well as ourselves. The task is daunting, however, involving outreach to hundreds and hundreds of landowners, negotiations to acquire key parcels and place conservation easements on buffer areas, as well as subsequent stewardship of these lands.

Daunting, of course, but uplifting, too. While there is clearly much work to be done, with your support we can and will make headway. As clear evidence of progress, look at the recent extension of protected forestland in Ontario and Tompkins Counties. By continuing and expanding these efforts, we can ensure that our region retains landscapes of wildness and natural beauty accessible to all.

 —Andy Zepp

Wesley Hill Preserve Grows!

continued from cover

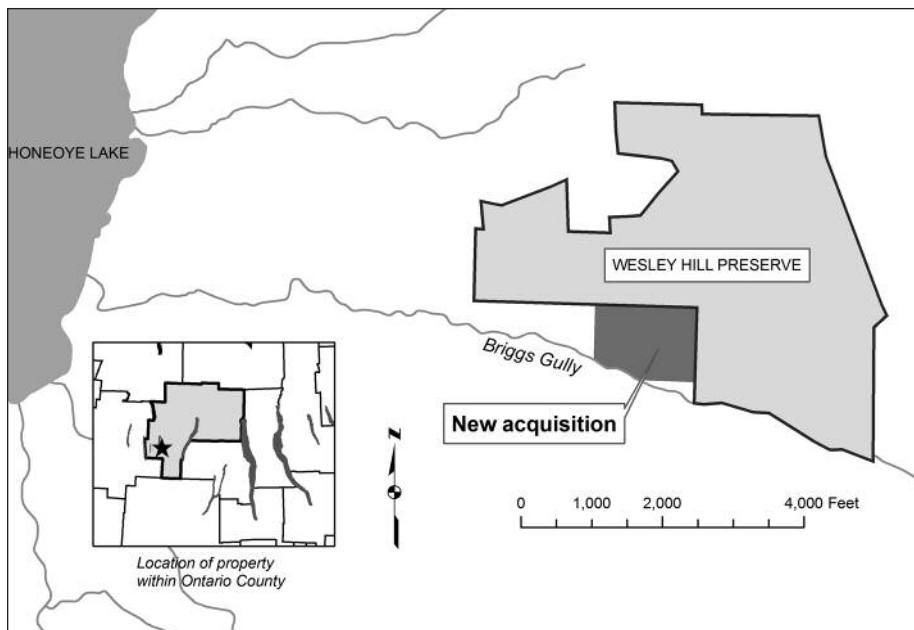
through mixed oak forest and some of the region's most mature stands of pine and hemlock.

Briggs Gully, the preserve's most noteworthy feature, extends along the preserve's southern boundary and beyond for about 2.5 miles. A geological marvel, featuring a series of falls over which stream waters cascade on their way down to Honeoye Lake, the gully has also played a role in Seneca tribal history. The preserve's Rim Trail provides vistas overlooking the gully and the forest of Harriet Hollister Spencer State Recreation Area beyond.

The purchase was made possible through a special gift from members Peter and Peggy Kane and money from the Land Trust's Nature's Gift fundraising campaign. Completed in 2003, this successful campaign raised nearly \$300,000 for conservation projects in the Western Finger Lakes. The campaign has funded a number of projects, including the establishment of Carolabar Park in South Bristol and the protection of the Green Farm in western Ontario County.

The Land Trust gratefully acknowledges Attorney Kim Rothman and the law firm of Miller Mayer, LLP for providing *pro bono* legal services in the acquisition of the Schenkel property.

Directions to the preserve can be found at www.fllt.org



Land Trust Receives First Easement on Seneca Lake

Jim Eyer has owned land along the western shore of Seneca Lake for over 45 years. In that time, this retired professor of Optical Science has watched the world change before his eyes. He has seen the fields on his property gradually revert back to forest. He has witnessed species like the wild turkey come back from obscurity. And, not least, he has kept a wary eye on the slow creep of development as it has made its way across the Seneca Lake landscape. Inspired to keep his property free from such development in the future, Jim recently donated a conservation easement on most of his 40 acres. This parcel marks the first easement for the Land Trust on the western shore of Seneca Lake.

The Eyer property is a classic example of the physical change that has been underway for decades along the shores of the Finger Lakes. Located on Rt. 14 north of Glenora, the parcel is an old farm site that features exceptional views of Seneca Lake. With over 1100 feet of road frontage, the property would be a prime location for future development.

Now protected, the overgrown fields and mixed hardwood and pine forest will continue to provide a variety of habitats for the wildlife found on the property. The easement will also protect the small stream and its beautiful waterfalls running directly into Seneca Lake along the property's southern border.

In talking with Jim, one easily gets a sense of the commitment he has for his land through the small but meaningful observations he has made over the last few decades. When talking about the small acre of gnarled grape vines still hanging on the trellises near the old barn, he is quick to point out that it isn't the deer that made the home-grown wine operation a losing battle, but the increase in turkeys that now wander his land — turkeys, he points out, that weren't around 25 years ago.

He made the same point about the development pressures he sees spreading across the shoreline. "There are houses going up in places where there was only wildlife just a few years ago," he said. "Seems only right to protect some of what makes this place special in the first place."



Easement donor Jim Eyer (left) and Land Trust staff member Rocci Aguirre (right) on Mr. Eyer's Seneca Lake property

While love of the land may have inspired him to protect it, Jim also wanted to use the act of placing a conservation easement on his property to honor his long time friend and mentor, Robert Hopkins and his wife, Barbara. "Robert was my dissertation advisor at the University of Rochester and gave me my first job at the Institute of Optics. Over the years he and Barbara were dear friends, and I would like to use this as a way to say thank you in a meaningful and permanent way."

—Rocci Aguirre

Emerald Necklace Campaign Launched with Key Acquisitions

continued from cover

less than its appraised value."

"Our family is very privileged to have been part of the Land Trust's commendable efforts to protect this land," adds John Babcock.

The Galat property features mature forest located along the steep ridge that looms above West Danby. A vernal pond and a small tributary to the Cayuga Inlet add to the diversity of the site. As with the Babcock property, the location of this tract is part of what makes it a priority for conservation. The parcel borders the Land Trust's existing preserve as well as private land under conservation easement and Danby State Forest.

The Galat acquisition was funded through support from the Partridge Foundation, Cornell University, and several individual donors. The Land Trust

was able to proceed with the Babcock acquisition through the commitment of a \$75,000 lead grant from Cornell and an internal loan from its land acquisition fund.

Commenting on the commitment of Cornell funds, Cornell Plantations Director and Land Trust board member Don Rakow says, "by working together, we can preserve remaining natural areas for research, education, and future generations."

The Land Trust has set a \$200,000 fundraising goal for the Babcock property to cover acquisition costs as well as long-term stewardship expenses. Please contact the Ithaca office if you would like to contribute toward this project.

While two acquisitions kicked off the Emerald Necklace campaign, it is actually

expected that conservation easements will be more frequently used in this area. The first in what is expected to be a series of easements should be recorded in the early part of the new year.

During the coming months, the Land Trust will continue to work on other priority projects within the Emerald Necklace, while also working with partners on the development of a comprehensive conservation plan for this vast area.

The Land Trust gratefully acknowledges Attorney Dick Ruswick for providing *pro bono* legal services in the acquisition of the Babcock property and Attorney Mary Schubert and the law firm of True & Walsh, LLP for providing *pro bono* legal services in the acquisition of the Galat property.

PRESERVE PROFILE

The Recovered Beauty of Steege Hill

On a sparkling morning in late fall, the first clear day in an otherwise soggy, overcast and cold season, I almost literally leapt out of the house and into the woods — well, first into the car. Computer turned off, for a few hours at least, I drove down to the Land Trust's Steege Hill Nature Preserve in the Southern Tier town of Big Flats, where the Chemung River snakes between Corning and Elmira.

On the south bank of the Chemung, Steege Hill rises to almost 1800 feet above a deep bend in the river — the river had to get out of the way, it seems. The 794-acre preserve (acquired in 2001 through the generous support of an anonymous donor) is centered around the top of the hill, and I had gorgeous, sunlit views of the river valley below from clearings along the trails. The hiking is mostly gentle, but I was also eager to follow some steeper trails down into intriguing evergreen gullies that roared with run-off from recent rains.

In those ravines I could easily imagine the songs of many woodland birds in spring and summer, but this was a wet wet fall. For the most part, birds were generally silent about their business as I walked. I studied a brown creeper foraging for insects in its distinctive way: climbing the tree bark, probing for snacks, then swooping down to the base of a nearby tree to begin its upward creep again. A lone, silent blue jay harvested acorns high above, dropping most (for later gathering, perhaps) and cracking a few open for a quick meal. Chickadees and nuthatches flitted through the undergrowth, chatting quietly.

Migrant birds I met just by soft sounds, thin "tsips" of warblers feeding in the upper boughs of white and pitch pines, too high to identify. It was in some ways a typical late autumn Central New York forest scene, but without the cold: plenty of sunlight and still plenty of food.

Walking along the network of trails through the lovely Steege Hill woods, I guessed at the preserve's land-use history, finally focusing on farming. Some trails follow old farm tracks flanked by the rubble of ancient stone walls to clear pastures now choked with young maples and cherries, and there are two large foundations just off one trail. When I reached a broad, grassy clearing at the very top of the hill, I could almost see sheep and cattle grazing there.

It turns out I was both right and wrong about the land-use question. Although there was at least one 19th-century farm on the hill, most of the rutted tracks and forest clearings are much more recent. I had somehow missed the bigger picture.

In the 1970s Steege Hill was nearly ruined by heavy logging. The town of Big Flats, in fact, grew so alarmed by the land degradation that it shut down the operation and passed a law regulat-

ing future logging within town limits. It was the first town in the state to do so.

Now the original forest is obviously making an impressive recovery and will continue to do so under careful Land Trust stewardship.

Preserve steward Bob Corneau, who grew up nearby and still lives on land adjacent to the preserve, maintains a color-coded network of trails, most of them over old logging roads, that lead visitors to just about every corner of the preserve. In addition, he maintains several clearings in the forest as well as a couple of attractive ponds. (Picnicking, I thought, would be ideal on a warm summer day.)

Corneau has taken an interest in the timber rattlesnake population at the Steege Hill preserve. Rare in our area, these endangered reptiles have attracted much attention over the years, including a recent visit by Sir David Attenborough and a film crew from BBC's "Life on Earth" to shoot footage of rattlesnakes in the preserve. [see Autumn 2006 issue of The Land Steward]

Cornell herpetologist Rulon Clark has been studying the foraging behavior of the snakes, using electronic tracking devices to chart their movements. Although not a scientist himself, Corneau has been assisting the research.

I saw no sign of rattlesnakes on my walk, as they were safely below ground for the long winter, but I noted the postings at the preserve entrance cautioning hikers against careless wandering from late April to late September.

Steege Hill Nature Preserve also contains the distinctive nests of Allegheny mound ants. Although I am familiar with these ants from living in coastal Maine, I hadn't seen any in the Finger Lakes region. An informative sign

next to one nest mound explains, among other things, that the ants will destroy shade plants growing too near, so that the nest is assured of adequate sunlight for warmth. They'd done pretty well for themselves, it seemed to me.

I left the preserve that day marveling at the swift recovery in a forest nearly wiped out just decades ago and full of gratitude to the Land Trust for stepping in and allowing this recovery to take its natural course.

— Eben McLane



On the south bank of the Chemung River, Steege Hill rises to almost 1,800 feet, towering above the river valley below

CHARLES HELL ©

DIRECTIONS TO THE PRESERVE: From Route 17 in Big Flats, take exit 49. Turn south from the exit ramp and go to Olcott Road. At the "T" intersection, turn right on Route 64 (unmarked), and right again on Route 352. Turn left on South Corning Road, cross the river, and turn left on Steege Hill Road. Go about 1 mile up the hill and pull into the parking lot on the left, just before the pipeline cut. (Or park off the pavement on the shoulder of the road.)

REFLECTIONS ON CONSERVATION

Habitat Corridors and Biodiversity

Habitat fragmentation is familiar in one way or another to all Finger Lakes residents. For more than a hundred years, clearing for development has made a checkerboard of the land. Once a vast, intact forest and wetland ecosystem, the landscape has been increasingly fragmented into patches of habitat isolated by roads, field expansion, housing and commercial development.

An increase in habitat fragmentation puts heavy stress on many native animals and plants. Local populations of plants and animals are at risk from a loss of genetic diversity if they are trapped in isolated patches removed from the larger population. The disappearance of a food source, of protective covering or even of a small but reliable water source, can spell disaster for local populations of some small mammals, songbirds, insects and plants. The river otter, brought nearly to extinction in central New York by the destruction of its native wetland habitat, recently had to be more or less reintroduced to the creeks and rivers of central New York.

For decades, ecological protection programs from Austria to Zimbabwe have promoted what are variously called landscape, or habitat or conservation “corridors” in hopes of reversing the detrimental effects of habitat fragmentation on native species and increasing overall biodiversity. These corridors are strips of land connecting isolated patches of similar habitat, and are widely believed to encourage the spread of native species and ensure their continued survival.

The Land Trust’s Emerald Necklace forest project is a case in point. Through a combination of conservation easement and acquisition, the Necklace will eventually protect pieces of land linking together larger tracts of publically-owned forest in the hills around the southern end of Cayuga Lake.

This conservation strategy has common sense value, and a great many land preservation projects have taken it on faith that the idea works. Research on the effectiveness of corridors is still in its early stages, but now the data are beginning to trickle in, and conservationists should be pleased.

Studies over the last decade from around the globe suggest that corridors do encourage animal movement between habitat patches, boosting population sizes and increasing geneflow (one key measure of biodiversity). Not all studies show the same pic-

ture, however, and corridor conservation has its skeptics. We now have a healthy scientific discussion.

A 2003 study followed 10 diverse species of small animals, birds and insects and found that landscape corridors emphatically do increase movement and dispersal of species between fragmented pieces of habitat. The study looked at a broad range of habitat “community functions,” including insect pollination and seed predation by birds and small mammals, concluding that “corridors have the potential to be valuable tools for landscape conservation of diverse [organisms] and the biological processes that they direct.”

One question for land conservationists: how wide a corridor for best effect? The answer: what do you want to protect? Mice and voles and some edge-dwelling birds travel comfortably along

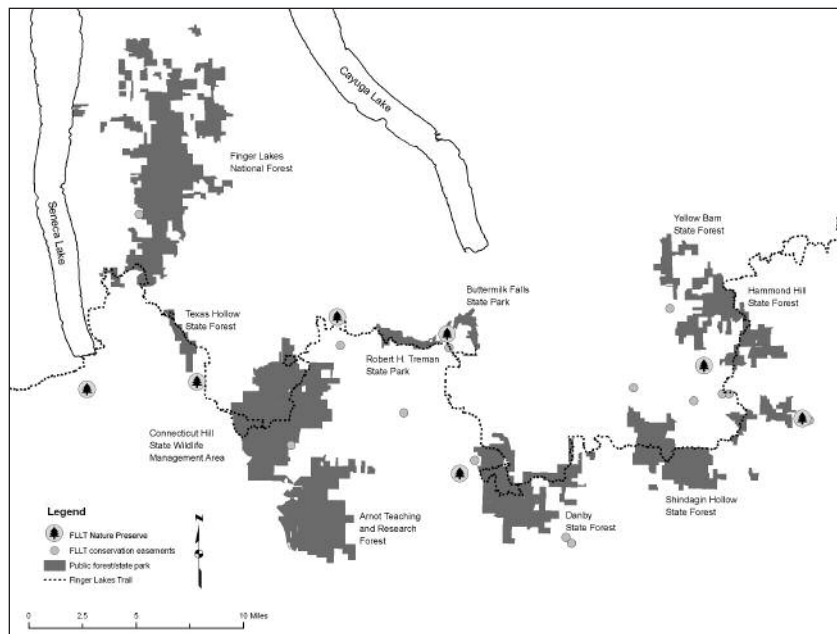
corridors a few meters wide — think of the use hedgerows get. As a general rule, you might say the larger the bird or animal, the wider the corridor. In the Rocky Mountains, for example, some habitat corridor proposals are on a scale of 20 or more miles wide, for bear, moose, elk and wolves.

Corridors have been shown to increase movement between patches of forest for some species of birds, such as the eastern bluebird. Increased edge habitat along corridors allows bluebirds greater freedom of movement between patches of formerly isolated habitat. However, for some other bird species — those that

do not specialize in edge habitat — corridors have little or no effect on their movement between forest patches.

Critics of corridors as a conservation strategy argue that creating more edge habitat sets an “ecological trap,” in effect putting some bird and animal species at greater risk of predation. In the case of indigo buntings, for example, a 2005 study showed an increase in nest raiding by habitat edge specialists (snakes, crows, possums, etc.) where habitat corridors had been established. One way of resolving the problem, the authors say in their conclusion, is to design corridors with graduated edge habitat and enough width to provide safer interior nesting for birds.

Most of the studies to date have focussed on small mammals, birds and insects, less on plants. Even research on seed dispersal by birds looks mostly at the way the birds behaved within corridor-connected patches of habitat and not so much at the success of



The Land Trust’s Emerald Necklace Project is an example of creating a “conservation corridor” to reverse the detrimental effects of habitat fragmentation on native species

Scenes

from Around
Our Region...

BETSY DARLINGTON



“Our tools are better than we are... They suffice to crack the atom, to command the tides. But they do not suffice for the oldest task in human history: to live on a piece of land without spoiling it.”

– Aldo Leopold (1887-1948)

Volunteer Tom Reimers (left) and conservation easement donor Jim McConkey (right), admiring a chestnut stump fence on the easement property, which protects 168 acres of prime farmland and mature forest

JIM KERSTING



Volunteer Sara Kersting leading hikers during last summer's 2006 Talks and Treks Canadice Lake Pond Exploration and Bike Trip

PAUL BAXTER



Hikers enjoying the annual late fall nature walk at the Steege Hill Nature Preserve (profiled in this issue on page 4)



BETSY DARLINGTON

Now part of the Emerald Necklace, the Babcock property features diverse hardwood forests that are visible from both Route 13 and Treman State Park (see article on page 1)



MARK WHITMORE

The Land Trust's latest conservation easement, on the Eyer property, includes the protection of this beautiful waterfall which runs along the property's southern border, directly into Seneca Lake (see story on page 3)



BETSY LANDRE

Volunteer stewards in the western lakes region attending a workshop led by Land Trust Stewardship Coordinator and GIS Specialist Karen Edelstein (lower right)



BETSY LANDRE

Finger Lakes Community College Educator Rob Wink introducing a local resident during "Bugs of The Wesley Hill Preserve," part of last summer's Talks and Treks series

DONOR PROFILE

Thomas Eisner and the Art of Nature

Thomas Eisner, J. G. Schurman Professor of Chemical Ecology at Cornell, believes strongly that organizations like the Land Trust are in the best position to save our remaining natural areas from human destruction.

“Everybody ... should give as much as they can [toward land conservation], even if it’s just a nickel a week,” Eisner says. “Even children can learn not to buy a candy bar and use the money to buy lunch for an insect.”

Eisner is known worldwide for his groundbreaking research in entomology, evolutionary biology and chemical ecology. He is also an outspoken advocate for environmental conservation, president of the Xerces Society for Invertebrate Conservation, a co-founder of the Lindsay-Parsons Biodiversity Preserve and a member of the Finger Lakes Land Trust Advisory Council.

Along with being a world-renowned scientist with a zeal for invertebrates, Eisner is also an author, photographer, musician and conductor. He seems to have inherited both a passion and a talent for the arts. His mother was an artist, his father a chemist “who should have been a pianist.”

Eisner, who learned to play the piano at a very young age, has a special fondness for Bach, a composer whose music is a model of order and symmetry. He has also been the conductor of the Cornell orchestral group BRAHMS (Biweekly Rehearsal Association of Honorary Musical Scientists). He points out that, in fact, there is a great overlap between science and music: after all, both scientists and musicians must be creative within clearly delineated constraints. According to his reckonings, mathematicians are most often musically inclined, followed by chemists, physicians and biologists. Eisner has more than once managed to combine his passions for music and science. For example, he and his wife Maria have hosted several piano concerts to raise funds for the Land Trust. Furthermore, he once agreed to deliver a paper at a conference only if he were also allowed to conduct the university orchestra — he was.

Although he claims that the only things he can draw are insects under a microscope, Eisner is, in his own words, “blessed with the talent of seeing beauty in nature” and has been inspired by his mother’s Kandinsky-influenced paintings. He has con-

tributed to the making of many film documentaries, including the multiple-award-winning *Secret Weapons*, a fascinating look at the chemical defenses of insects. He is also the author of several books, most recently *For Love of Insects*, which is lavishly illustrated with his own photographs. With Maria’s help, he has used everything from a digital camera to a scanning electron microscope to document the natural world. The images he produces are

beautiful and often strange: insects frozen in the midst of their insect business, the delicate colors of autumn leaves, the filaments of a spiderweb. “Waiting for a film to develop,” he says with a smile, “is sweet anxiety.”

Since Parkinson’s disease has put many of his previous artistic endeavors off-limits, Eisner has developed a new artistic technique that uses a color copy machine. He first became aware of the artistic potential of copiers while studying the feeding patterns of caterpillars on leaves protected by noxious chemicals. The usual practice in such studies is to trace the leaf on paper both before and after the caterpillar feeds in order to see how much, and which parts, of the leaf the insect consumes. However, Eisner took an

unorthodox approach and used a copier to document the leaves instead. Intrigued by how clear and three-dimensional the resulting images were, he began to experiment with the machine. He discovered that he could arrange natural objects on the copier stage, cover them with black velvet, and scan them, in essence photographing them from beneath. Some of his images are whimsical animals made out of shells; others are arrangements of flowers and leaves, as symmetrical and beautiful as a Bach cantata.

Dr. Eisner has made it a little easier to “buy lunch for an insect” by generously donating a set of ten images (made by both a scanning electron microscope and a color copier) to the Land Trust. These images, which have been made into postcards, are for sale through the Land Trust office in Ithaca, with all proceeds going to the Emerald Necklace conservation project. *See Fanciful Designs on page 10.*

—Jacqueline Stuhmiller



Tom and Maria Eisner outside their home in Ithaca

Board Developments

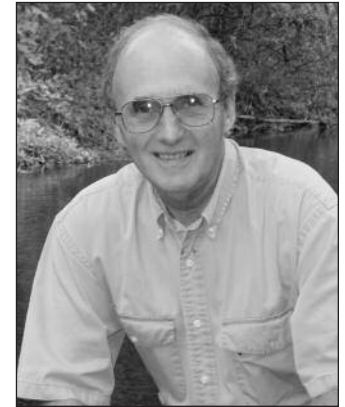
A hearty welcome to new board members Chris Proulx and Bob Werner.

Chris Proulx is Chief Executive Officer of eCornell, a Cornell-owned company dedicated to serving the executive and professional development needs of individuals and organizations through on-line education programs developed by Cornell faculty. A resident of Ithaca, Chris is active in both community and environmental issues and, when not developing e-learning applications, prefers to be outside hiking, biking, or gardening.

Bob Werner is Professor Emeritus of Environmental and Forest Biology at the SUNY College of Environmental Science and Forestry in Syracuse. He serves on the board of both the Tri-County Skaneateles Lake Association and the Upstate Freshwater Institute and is Chair of the Skaneateles Lake Monitoring Committee and Co-Chair of the Town's Aquatic Invasive Species Committee. Bob and his wife Jo live in Skaneateles.

"Bob and Chris bring to the board a variety of professional skills and experiences that will further enhance the breadth and scope of the organization's leadership," remarked Board Vice-President and Board Development Chair Brad Edmondson.

Please join us in giving them a warm welcome!



New Board Members Chris Proulx and Bob Werner

Habitat Corridors and Biodiversity

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plant dispersal along corridors the birds used.

In a recent issue of *Science*, ecologists revealed the fruits of a 5-year study, indicating for the first time the vital importance of corridors in retaining native plant biodiversity. The study showed that native plant species occurred in greater diversity in corridor-linked habitats than in isolated habitats. In fact, the rate of biodiversification outpaced the expecta-

The recent *Science* study, however, showed no significant corridor effect on the spread of invasives, which is to say that invasives spread no more between patches connected by corridors than between unconnected patches. One reason for this finding may be that invasives are by nature aggressive seed dispersers and not reliant on contiguous wild lands, as so many native species are.

As habitat corridor studies, and the debates accompanying them, move forward, a conservation strategy once based on little more than intuition can increasingly depend on demonstrated management techniques to succeed in its goal of promoting biodiversity and protecting at-risk species.

Knowing which species will — and which won't — benefit from conservation corridors is crucial to this success, as is finding ways to off-set any negative effects of corridor function. Finally, moving away from single-species studies and focusing more on broad, community-wide effects of corridors will help us understand the larger picture of what we might accomplish with future conservation efforts.

—Eben McLane

In a recent issue of Science, ecologists revealed the fruits of a 5-year study, indicating for the first time the vital importance of corridors in retaining native plant biodiversity.

tions of the researchers. Their speculation is that as animals and birds took advantage of the landscape corridors between formerly isolated fragments, they unwittingly carried plant seeds with them — on their coats, in their digestive tracts. Also, plant pollinators, such as bees and butterflies, are known to follow the corridor pathways.

Corridor critics have expressed concern that invasive plant species would seize the same opportunities open to native plants in this conservation scheme.

We are deeply grateful for donations in memory of:

Lynne Abel
FROM

Dick and Betsy Darlington
Katy Gottschalk
David Gross and
Judith Bernstock
John and Ida Wolff

Lucy Andrews
FROM

Carol D. Fudge

Charlie Brown
FROM

Barbara Hamlin

Lucy Foote Drysdale
FROM

Bill and Janet Allyn

Dave Hamlin
FROM

Bonnie Hamlin

Prof. Don Hayes
FROM

Patty and Tom Davis

Charles and Ann Jankey
FROM

Walter and Sarah Medlin

Robert N. Thompson
FROM

Genevieve S. Thompson

Dr. Donald Raines
FROM

Greg and Ruth Morris



FANCIFUL DESIGNS

MUSEUM QUALITY
 FULL COLOR POSTCARDS
 ARTWORK BY TOM EISNER

Can be purchased at the Finger Lakes Land Trust office in downtown Ithaca or by calling 607-275-9487.

Postcards come in sets of 20 (two each of ten designs)

Suggested donation: \$14.00 per set of 20 or \$25.00 for two sets of 20

Proceeds to benefit the Emerald Necklace Conservation Project

Looking for Signs of Spring?

Join us for **The First Annual Finger Lakes Land Trust Spring Bird Quest**. Over Memorial Day weekend (May 26-28), participants will count bird species on Land Trust preserves, enjoying the dazzling diversity of local avifauna while raising pledge money for the Land Trust.

Birders of all skill levels are welcome. Mark your calendars now and look for more details in the next issue.



Our sincere thanks for gifts in honor of:

Victor & Elaine Mansfield
 FROM

Steve Smolen

Buzz & Gretchen Roberts
 FROM

Gwen Guernsey

Mrs. David Sheppard
 FROM

Mary Lee Kokosa

Mrs. G. William Gregory
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Mary Lee Kokosa

Jim and Mick Ely
 FROM

Kristin and Bill Ely

Peter & Betty Stahlbrodt
 FROM

Barbara Hamlin
Mike Stahlbrodt

David S. & Linda M. Marsh

Alex & Michele Thurber
 FROM

Alice Thurber

Dick & Betsy Darlington
 FROM

Lois Darlington & Alfredo Rossi
Jean Darlington & Eduardo Marchena

*Our sincere thanks
 for a gift in honor of
 the wedding of:*

Marty Schlabach
 and
Mary Jean Welser
 FROM

Janet McCue and Robert Kibbee

*Our deepest appreciation
 for a gift from:*

Linda and Larry Orkin
of Orkin Dental Laboratories
 in honor of their
 client dentists.

Mushroom Secrets

During a recent Talks and Treks at Ellis Hollow Nature Preserve in Dryden, Tompkins County, I led a group of noisy hunters through the woods. There was no point in being quiet: we were looking for mushrooms. The summer of 2006 had been one of the best mushroom seasons I can remember, and all manner of fungi were sprouting everywhere. We didn't have to go far to find what we were looking for.

Mushrooms are mysterious, seemingly sprouting up overnight and disappearing almost as quickly. Few know about their secret lives in the forest.

For most of its life, a mushroom exists underground. Its body is composed of branching, gossamer threads not much thicker than a spider's web. Although they are too small to see, these threads — the mycelium — are the second most abundant organisms in soil, right after plant roots. A mycelium can inhabit a single acorn, or it can course through many acres of forest soil. We even know of a few mycelia whose biomass exceeds that of a blue whale.

When it is time to reproduce, the mycelium produces fruiting bodies like the stately mushroom in the photo. The mushroom sheds spores that travel on the wind to start new mycelia. Next time you see a mushroom, think of it as merely the apple of a gigantic underground apple tree.

Many common autumn mushrooms form symbiotic relationships with trees. Underground, their mycelia partner with tree roots, where a little-known exchange takes place. The tree brings sugars to the feast; it creates them high up in the canopy through photosynthesis. The fungus partner brings hard-to-find micronutrients like phosphorus and nitrogen. This is a permanent banquet.

Examination of the fine roots of trees reveals clubby root structures called mycorrhizae (pronounced "mike-o-RYE-zee"). Within the mycorrhizae, fungus and plant tissues are found in organized layers made for food exchange. Without their mycorrhizae, the trees would be stunted or dead. Mycorrhizae also protect trees from some root diseases and buffer the effects of drought.

A single fungus mycelium in the forest may be hooked up to many different trees, and a single tree may be hooked up to many fungi. The result is an astonishingly interconnected fungal network that underlies the forest. Through this network, mature trees can shuttle nutrients to seedlings, supporting their growth until they break through into a patch of sunlight.

Many mushrooms, including some of the most delicious types like truffles, porcinis and chanterelles, are mycorrhizal with

forest hardwoods and conifers. Despite many efforts, these mushrooms have never been cultivated without their tree hosts. They're so expensive because they must be hand collected from a healthy forest.

The deadliest mushrooms are also mycorrhizal, like the destroying angel, a single cap of which might kill. The genus *Amanita* is an awfully good mushroom to learn first. These stately mushrooms have white gills, a white spore print, a basal bulb (or volva), and usually have a "skirt" or annulus around the stem.

Although some *Amanita* species are edible, only very experienced mushroom hunters should eat them, because of the risk of confusing them with toxic species. The most toxic *Amanita* species, *A. bisporigera* and *A. phalloides*, kill about 60 percent of people who eat them, despite medical attention. While *Amanita bisporigera* is common in our area, *A. phalloides* is an introduced European species found here only in isolated populations in California and Rochester, New York.

Not all trees form mycorrhizae with mushrooms. Maples and most herbaceous plants, for example, have mycorrhizal partners that belong to an even more secretive and tinier group of fungi, the *Glomeromycota*. It's thought that these ancient fungi were critical in allowing the first plants to evolve on land.

Mycorrhizal fungi are key players in ecosystem function — a forest's secret strength. They can be vulnerable, too. A handful of non-photosynthetic plants like Indian pipe, squawroot, and beechdrops are parasites of mycorrhizal fungi. They entice fungi to form a partnership, but greedily decline to give anything back.

Recent evidence suggests that some plants compete with each other by affecting the community of mycorrhizal fungi around them. Invasive garlic mustard attacks mycorrhizal communities by excreting soil toxins that suppress fungi needed for native tree and plant growth.

There you go: the secrets of the mushrooms revealed. Well ... some of them. Fungi have many more surprises up their sleeves, but that's a story for another day.

—Kathie T. Hodge, Asst. Professor of Mycology,
Cornell University



KATHIE T. HODGE

The destroying angel (Amanita bisporigera) was abundant in the Ellis Hollow Preserve this summer. This all-white mycorrhizal mushroom is handsome but deadly.

VISIT KATHIE'S MUSHROOM BLOG:

http://hosts.cce.cornell.edu/Mushroom_Blog/

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WINTER 2006-07 CALENDAR

SATURDAY, MARCH 10, 10:00 am – noon

Wesley Hill Late Winter Ramble

Join Land Trust President Jim Kersting for a hike at the Wesley Hill Nature Preserve over moderate terrain (ski, snowshoe, or walk, depending on conditions). A more challenging side hike will be an option for those interested. Meet at the Wesley Road parking lot (not the Gulick Road parking lot).

See our web site for maps and photos of the preserves.

WALKS GO RAIN, SUN OR SNOW. PLEASE BRING SNACKS AND WATER, AND WEAR STURDY SHOES. CALL THE LAND TRUST AT 607-275-9487 FOR DETAILS.

Wish List... Quality lopping shears