

Consortium Celebrates Its 20th Anniversary!

Festive is the word for the Black Rock Forest Consortium's 20th Anniversary Celebration! On May 13, a sold-out crowd of more than 250 Consortium members and friends gathered for lunch at the Union League Club, where the first William T. Golden Award for Innovative Leadership in Science and Science Education was presented to Helene L. Kaplan.

There were many reasons to celebrate. Since its founding in 1989, the Consortium has built two award-winning green buildings, the Science Center and the Forest Lodge; researchers have produced more than 400 scientific papers; and more than 11,000 students visit the Forest each year. The Consortium not only supports member research and teaching programs, but also has developed innovative science, education, and conservation projects. These include multi-year, multi-investigator research on the future of oak forests and the presence and impact of mercury in the environment; a summer Field Ecology Research Internship for high school students; annually raising and releasing native brook trout into Forest streams; and creating the Virtual Forest, a web-based teaching tool that will put Consortium scientists' data and models into the hands of students.

The Golden Award

"We created the William T. Golden award to honor Bill's creativity and persistence in [founding the Consortium](#)," said Executive Director Dr. William Schuster. Bill Golden's interest in Black Rock Forest went back to 1981, when Dan Steiner, vice-president and general counsel of Harvard University and a long-time friend, called to ask his advice about the Forest, which Harvard then owned but used infrequently. Based

Helene L. Kaplan, recipient of the first William T. Golden Award, in front of photograph of Black Rock Forest that was presented to her. (Photo: Jennifer Strader)



on his experience with other research organizations, Mr. Golden came up with the idea that a consortium of scientific and educational institutions could share both the resources and the costs of the Forest. After that 1981 conversation, Mr. Golden spent the next eight years developing the idea with New York institutions, Forest neighbors in Cornwall, and Harvard itself.

Helene L. Kaplan worked with him throughout those years to shape the structure of the Consortium and to negotiate the transfer from Harvard, and has continued ever since as an extraordinarily helpful board member. "We honor Helene for her dedication over the past 20 years to making Black Rock Forest Consor-

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Teacher Workshop

Educators Plan Trips, Curriculum

Teachers from six independent and public schools and science education students and teachers from New York University's [Steinhardt School of Culture, Education, and Human Development](#) gathered at Black Rock Forest on February 27 for a workshop on creating successful educational experiences in the Forest. About half of the 17 teachers who participated were able to stay overnight in the Lodge for a second half-day program.

The program kicked off with a tour of the Forest's [green Science Center and Forest Lodge](#), including the laboratories and the trout hatchery. After lunch, Consortium staff members Jack Caldwell and Hannah Roth reviewed [the logistics of planning a trip to Black Rock](#), including Lodge information and other topics. The teachers then split into smaller groups, led by John Brady, Matthew Munson, Chris Lee, and Bill Schuster, to discuss their previous class experiences in the Forest and develop curricula for student trips to the Forest during the winter or spring.

The smaller groups reflected the diversity of the teachers attending the workshop: elementary, middle school, and high school teachers all participated, as well as the NYU education students and teachers. Consortium schools represented included [Browning](#), [Dalton](#), [Metropolitan Montessori School](#), [Trevor Day School](#), and the [Urban Assembly for Applied Math and Science](#); a teacher from the [Elisabeth Morrow School](#) in New Jersey, under consideration for one open spot in the Consortium, also participated. Subject areas ranged from elementary math and science to high

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Black Rock Forest Consortium

Black Rock Forest News is published three times a year by the Black Rock Forest Consortium.

The Black Rock Forest Consortium is an alliance of public and private schools, colleges, universities, and scientific and cultural institutions engaged in research, education, and conservation in the 3835-acre Black Rock Forest in New York's Hudson Highlands.

The Black Rock Forest Consortium is a not-for-profit 501(c)(3) organization supported by membership dues, grants, and gifts.

Consortium Institutions

[American Museum of Natural History](#)
[Barnard College](#)
[The Browning School](#)
[The Calhoun School](#)
[Central Park Conservancy](#)
[Columbia University](#)
[Cornwall Central School District](#)
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[Newburgh Enlarged City School District](#)
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[New York – New Jersey Trail Conference](#)
[New York University](#)
[The School at Columbia University](#)
[The Spence School](#)
[Storm King School](#)
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Black Rock Forest News

Sibyl R. Golden, Editor

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Report from the Executive Director

The adage “the more things change, the more they stay the same” can sometimes provide important perspective. But some kinds of changes, in some settings, can result in impacts that are both profound and long lasting.

Black Rock Forest and much of the surrounding Highlands experienced damage from a heavy ice storm last December. Thick loads of ice built up on nearly every tree in the Forest above about 700 feet, comprising about 90% of the Forest. For more than 24 hours, the sounds of branches and trees cracking, breaking, and falling to the ground filled the air. When it was over, I counted 95 trees uprooted or broken just in the half mile between the entrance gate and the Science Center.

Not all areas, nor all species, responded in the same way. Smaller trees were more likely to bend or snap, while larger trees were more likely to experience limb breakage. Birch trees, with their relatively soft wood, were often mortally damaged, while oaks often only lost horizontal branches. Severe trunk damage occurred most often on steep slopes and uprooting was most common in wet areas with shallow soils.

So what about the longer term? Some indications may be provided by the consequences of an ice storm 10 years ago that produced damage of similar magnitude across 7 million hectares of northern New England and adjacent Canada. As much as 10% of the live above-ground forest biomass was lost due to this storm.

From a human perspective, one impact is a sense of decreased visual aesthetics. From an ecological perspective, one of the biggest impacts is increased light penetration, to the potential benefit of many opportunistic organisms. Studies have shown increased growth in those trees undamaged by the storms. But tree ring analyses have demonstrated that vigor and growth of damaged trees often remain reduced for years, and may eventually be followed by mortality from secondary factors. Some species can recover by forming new branches from previously dormant buds, but others cannot do this.

Another major impact is the huge input of woody debris to the forest

floor and to streams in affected areas. This is followed by increased wood decomposition, and can transform forests from functioning as major carbon sinks into sources of carbon to the atmosphere. Increased biomass of wood-eating insects and decomposers should eventually result in benefits to consumers and predator populations, and more energy flowing through the community trophic web. Some studies have shown initial losses of bird species adapted to closed-canopy forest interiors, but have also demonstrated increases of some open/edge bird species.

Ice storm damage can also lead to increased export of nitrate in stream waters, at least for a few years, due most likely to reduced uptake by damaged vegetation. But the combination of increased nitrogen and increased woody debris in streams can lead to enhanced in-stream nutrient retention, growth of algae and plants, and enhanced fish habitat. On a large scale, major disturbances appear to be important mechanisms for increasing both ecosystem diversity and landscape heterogeneity. But with rapidly spreading invasive species, it is not known how much of the new pulse of diversity will be exotics or other undesirable organisms.

Much will seem the same after this ice storm. We will still have a forest. But, on close view, it will not be the same. This is consistent with the current ecological view of the ubiquity of disturbance and the lack of any real “equilibrium” state or regional “climax community” in nature. Instead, initial starting points and random events determine conditions in any given place and time, all species react individually to changes in conditions, and events sometimes result in completely novel communities.

Somewhat analogously, we can reflect on the impacts of the Black Rock Forest Consortium on the occasion of its 20th anniversary. While some things have remained the same, others have changed. The “seedlings and saplings” that have been produced through increased research, education, and conservation activities may well impact the future. Only time will tell just how profound and long-lasting these changes are. ■

— Dr. William Schuster

Forest Ride Offers Varied Bicycle Trips and Activities

Full foliage, fresh local produce, and the scenic roads of the Hudson Highlands – that’s the winning combination of the Forest Ride. This year’s bicycle ride to support the Black Rock Forest Consortium has a new name and new options for shorter rides and other exciting activities, but it still promises beautiful scenery, incomparable camaraderie, and abundant support over the Columbus Day weekend, October 10-12. With summer coming, now’s the time to sign up as a rider and get in shape!

The Forest Ride offers bicyclists four options: a three-day ride of either 150 or 185 miles, and a one-day ride on Sunday of either 100 miles or 62 miles (a century or “metric century”).

Three-day riders will gather at the Forest by 8:30 on Saturday morning (the Ride organizers will help cyclists arrange transportation for themselves and their bikes). The first day’s ride will be a 25-mile warm-up, followed

by lunch, an ecologist-guided hike in the Forest, and a local, organic dinner at a special location, all before a night in the award-winning Forest Lodge.

On Sunday, the one-day riders join the group, traveling through the hills of Orange County and up through the Hudson Highlands to the Catskills and back. On Monday, the three-day cyclists will break up their 60-mile ride with visits to local farms for samples of super-fresh produce and cheeses, ending with a victory celebration at an organic vineyard.

This year’s ride is produced by Global Impact Productions which has successfully organized fundraising bicycle rides for a variety of not-for-profit groups. They will provide complete support for the riders, including “oases” with snacks, water, sports drinks, stretching advice, bike techs, medical assistance, and lots of cheering, as well as signage, sweep vehicles, and more. Volunteers are

needed; more information is available at www.forestride.org.

The Forest Ride is a fundraising ride, so participants must raise at least \$1800 from family and friends for the three-day ride or \$900 for the one-day ride. Riders will have access to fundraising assistance, training, and bike tech advice.

“That a busy working mother was able to complete the challenge and thoroughly enjoy the experience is a testament to the wonderful support and camaraderie,” says School at Columbia teacher Lisbeth Uribe, speaking about last year’s Green Ride. This year, she is a Forest Ride co-chair, along with Bill Kelly, Jim Bixler, Justine Yeung, Scott Wood, and Bill Schuster.

So visit www.forestride.org and start training for an unforgettable experience that will help support education and other activities in Black Rock Forest. ■

Renovated Hatchery Enhances Trout Conservation, Learning

Black Rock Forest’s brook trout – when they are indoors – now have a wonderful new habitat, The Hatchery, thanks to grants from the [Hudson River Improvement Fund](#) and the [New York State Department of Environmental Conservation](#), obtained with the help of State Senator Bill Larkin. Another grant, from the Sarah K. De Coizart Trust, will allow the Consortium to participate more actively in brook trout conservation and education activities. New York’s state fish, the brook trout (*Salvelinus fontinalis*) requires clean water and low water temperatures; its populations were decimated in the past primarily due to human-caused habitat deterioration.

With the grants for the Hatchery, the Consortium was able to complete some of the plans originally designed by [FXFowle](#), turning the unfinished basement of the Forest Lodge into a real aquatic laboratory that will offer hundreds of students “hands-on” scientific experiences. The grants funded installation of wood walls, a drop ceiling, light fixtures, outlets, new wooden benches and shelves, stools, a table, and window coverings, as well as painting (supplied by a Cornwall Eagle Scout project).

Soon after the Forest Lodge was finished in 2001, Forest Manager John Brady, who developed the Brookies at Black Rock program, traveled to Long Island to obtain eggs from the state’s Cold Spring Harbor Hatchery. He brought them back to two 40-gallon nursery tanks, each containing equipment to chill, aerate, circulate, and filter the water.

He then developed a curriculum that, in successive visits, enables students not only to see the progression from eggs to hatchlings to small fish ready for release in Black Rock’s streams, but also to learn about trout biology and habitat, and about stream environments and water quality (see “Brookies at Black Rock Brings Trout to Students,” [Spring](#)

[2003](#)). The creation of The Hatchery will allow hundreds of students to participate in the program each year, and the annual release of many brook trout into Forest streams.

The De Coizart grant enables the Consortium to build on this base, both for education and for conservation. It supplies funding for tree planting near streams to help improve habitat, for an aquatic biologist to work with the Consortium in assessing area streams for brook trout status and suitability, and for making the Consortium a member of the [Eastern Brook Trout Joint Venture](#), as well as offsetting costs of the Brookies at Black Rock program.

“Brook trout, and efforts for their restoration, are symbolic of our nation’s increased interest in environmental issues and dedication to improving environmental quality,” says Executive Director Dr. William Schuster. “They also serve as ideal organisms to engage students’ interest in nature, life cycles, and a host of other subjects. We are very thankful for the funds to complete this aquatic laboratory and teaching space so it may enhance this program and many more research, education and conservation activities over the coming decades.” ■



Student Research Spotlight: CO₂ in an Urban-Rural Gradient

by Diana Hsueh

Last year, for the first time in history, 50% of the world's population lived in urban centers. By 2050, this is expected to rise to 70%. As urbanization increases globally, it is important to investigate how our natural ecosystems respond to this change. Urban pollutants and acidic soils may hinder plant growth, while higher night-time temperatures, nutrient deposition, and carbon dioxide (CO₂) concentrations may stimulate plant growth.

To study these effects, Consortium scientists established an urban-to-rural transect of oak seedlings (Central Park, Lamont-Doherty Earth Observatory (LDEO), Black Rock Forest (BRF), and Catskills) in 2004 [*Ed. Note:* See "Field Season Yields Plant Growth Data," [Winter 2007](#)]. Oak seedlings in the city grew larger than those in rural sites; however, the cause is still unclear. We know CO₂ concentrations play a crucial role in plant growth, but the distribution of CO₂ concentrations at small temporal and spatial scales is still poorly understood.

For that reason, I examined both historical CO₂ concentrations from the past 100-150 years using tree cores from the four sites and current CO₂ concentrations to decipher diurnal and seasonal patterns. Historical CO₂ concentrations can be determined by measuring the radiocarbon (¹⁴C) content in tree rings. Current CO₂ concentrations are measured at a network of atmospheric monitoring stations, the Lamont Atmospheric Carbon Observation Project. Each monitoring station also measures weather indices such as rain, air temperature, solar radiation, relative humidity, wind direction, and wind speed so researchers can study CO₂ trends in relationship with variations in weather patterns. Current weather conditions and the locations of the six project sites can be found at www.ldeo.columbia.edu/outr/LACOP/. Up-to-date CO₂ measurements from an instrument installed in the Forest in 2008 will be accessible on this website soon.

The tree core data show that historic CO₂ levels in Central Park, LDEO, BRF and the Catskills were roughly 15, 7, 4 and 2 ppm above ambient "clean" levels, respectively. I am still analyzing the current data; however, the overall trend is the same, with the city exposed to higher levels of CO₂. Nevertheless, the CO₂ concentrations in the city are not as high as one might expect in such a large urban area, partly because some of city's pollution is flushed out by cleaner air blown in by northwest winds.

By examining what CO₂ concentrations past flora were exposed to, current CO₂ levels, and weather data, we can better understand the basic physics, biology (notably plant physiology), and chemistry of the environment, and thus have a better understanding of how urbanization affects air quality and ecosystems. ■

Diana Hsueh is an M.A. Conservation Biology student in the [Ecology, Evolution and Environmental Biology](#) Department at Columbia University.

Teachers (continued from page 1)

school biology, chemistry, environmental science, and global studies.

Curriculum development took up most of the afternoon. With their group, teachers created lesson plans, either completely new ones for chilly weather activities or adaptations of successful spring-time programs, including a unit comparing energy usage of Black Rock Forest facilities and their own school buildings. The teachers then shared their lesson plans with the whole group and worked through a sample activity.

The teachers who could stay overnight spent Saturday morning creating a plan for their next trip to the Forest, using the ideas developed the previous day, and wrapped up the workshop by sharing their observations of the

weekend with the other participants. All were enthusiastic about the training session and the inspiration it provided. "[This was] an excellent day to help teachers plan their trips to BRF," said Mary Leou, the director of the [Wallerstein Collaborative for Urban](#)

[Environmental Education](#) at New York University. "I hope this is the first of many where different topics can be explored."

"The Consortium's full potential is only realized when teachers are fully engaged and benefit from the

wealth of resources available to them, including curricula developed and tested by others, and the valuable skills and experience of our teaching staff," notes Executive Director Dr. William Schuster. "This workshop worked well for these 17 teachers to advance their teaching using the Forest and we will continue to provide opportunities like this for our members each year." ■

The December 2008 ice storm in the Forest. See the reports from the Executive Director and the Forest Manager.



Celebration (continued from page 1) tium a preeminent resource for students in the New York area," continued Dr. Schuster, "and for her steadfast leadership in promoting science-based policy and science education nationally." Mrs. Kaplan, who is of counsel to Skadden, Arps, Meagher and Flom, specializes in not-for-profit and fiduciary law, is the chair emerita of the boards of the Carnegie Corporation of New York and Barnard College, and chaired the Task Force on Judicial and Regulatory Decision Making for the Carnegie Commission on Science, Technology, and Government.

Ellen Futter, president of the [American Museum of Natural History](#), presented the William T. Golden Award. "We could think of nobody better than Ellen to present the award to Helene," explained Sibyl R. Golden, board chair of the Black Rock Forest Consortium and daughter of Mr. Golden. "She has the distinction of having led two founding Consortium members, as president of [Barnard College](#) and now of the Museum, and the further distinction of having known both Helene and my father since she was a student representative to the Barnard board."

President Futter gave some highlights of Mrs. Kaplan's deep involvements with New York educational and scientific institutions and then, with Ms. Golden, presented Mrs. Kaplan with a photograph by [Tom Doyle](#), framed with oak from the Forest, showing the Forest in fall foliage glory.

The Luncheon

Luncheon co-chairs (and Consortium board members) David Redden, the

Anna Quindlen with Celebration co-chairs David Redden and Kim Elliman. (Photo: Jennifer Strader)



vice-chair of [Sotheby's](#), and Christopher J. Elliman, executive director of the [Open Space Institute](#), ably led a benefit committee that included heads of Consortium member institutions, Consortium board members, and other devoted friends. "We are deeply grateful

to David, Kim, and the entire committee for making this anniversary such a spectacular success," said Ms. Golden. "Through their tireless efforts, the Celebration raised more than \$250,000 for Consortium science and education programs."

After mingling in the Library of the Union League Club, the guests sat down for lunch in Lincoln Hall. Mr. Elliman and Mr. Redden welcomed them, briefly described the Consortium and its history, and introduced Anna Quindlen, writer and board chair of Barnard College. Ms. Quindlen explained the myriad ways the Consortium has enhanced Barnard's educational efforts, noting the many professors and students who conducted research and studied in the Forest, including Dr. Philip Ammirato, the Consortium's first president.

Later, as guests were enjoying their main course, Dr. Schuster discussed the Consortium's accomplishments in scientific research, education, and ecosystem management.

"On a day like today," he said, "we can have elementary students making their first forays into a real forest, middle school students learning principles of science through hands-on experience, high school students conducting experiments, undergraduates engaged in exploration of human/ecosystem interactions, and graduate students standing on the shoulders of giants to advance our understanding of nature."



Barnard College was well represented at the Celebration, including former President Ellen Futter. (Photo: Jennifer Strader)

Consortium board president Dr. Frank Moretti then described some of the Forest's exciting future plans.

Special Thanks

Dr. Schuster thanked the Open Space Institute which took the opportunity of the Consortium's 20th anniversary to present it with 18 acres of additional land, including more than 14 acres high on Sackett Ridge, a sensitive parcel surrounded by the Forest's Canterbury Brook Ecological Reserve. "This is a wonderful donation of strategically situated property," he noted. "Preservation of these properties prevents forest fragmentation and ensures habitat connectivity to sustain populations of native species now threatened across our region, and it will also help protect local stream water quality. We are most grateful not only for this gift but also for OSI's ability to identify the most important parcels for conservation."

Dr. Schuster also noted that, thanks to a generous gift from the estate of Marian O. Naumburg, the Consortium plans to start expanding its education and technology initiatives. In particular, the Consortium plans to hire its first full-time education director to strengthen science education, internship programs, and other career-related opportunities for science-interested students, and to augment development of the Virtual Forest initiative. "We are profoundly grateful for this gift," said Dr. Schuster, "and for all the contributions that enable us to provide and foster cutting-edge research and education programs now and in the years and decades to come." ■

Current Research at the Forest

The Black Rock Forest Consortium is committed to encouraging collaboration among member institutions and also between researchers and students. To help members learn what other members are doing and explore opportunities for collaboration, we here present a list of current research projects at the Forest, along with contact information. ■

Distribution, Assemblage, and Activity of Bats in a Temperate Urban Landscape. Chanda Bennett ([American Museum of Natural History](#)). Contact: Chanda Bennett.

Oak Forest Sustainability and Response to Canopy Disturbance. William Schuster ([Black Rock Forest](#)), Shahid Naeem and Maria Uriarte ([Columbia University](#)), Kevin Griffin ([Lamont-Doherty Earth Observatory of Columbia University](#)), and Jerry Melillo ([The Ecosystems Center, Marine Biological Laboratory](#)). Contact William Schuster.

Cycling of Mercury in Terrestrial Environments. Allan Frei ([Hunter College, City University of New York](#)), Anthony Carpi ([John Jay College, City University of New York](#)), David Evers ([Biodiversity Research Institute](#)), and Roger Claybrook ([US Mercury Deposition Network](#)). Contact Anthony Carpi.

Reproductive Effects of Mercury in Red-Winged Blackbirds (*Agelaius phoeniceus*) Breeding in the New York Metropolitan Area. Christine Sheppard ([Wildlife Conservation Society](#)) and Shahid Naeem ([Columbia University](#)). Contact: Christine Sheppard.

Native Plant Performance along an Urbanization Gradient. Kevin Griffin and Natalie Boelman ([Lamont-Doherty Earth Observatory](#)), William Schuster (Black Rock Forest), Matthew Brown ([Central Park Conservancy](#)), and J. D. Lewis ([Fordham University](#)). Contact Kevin Griffin.

Ecology of Slave-Maker Ants and Their Host: The Effect of Geographic Variation in Parasite and Host Range on Co-Evolutionary Trajectories. Christine A. Johnson ([American Museum of Natural History](#)). Contact: Christine Johnson.

Functional Ecology of Complex Plastic Traits in Forest Trees: Pilot Studies of Reproductive and Root Traits. Hilary S. Callahan ([Barnard College](#)) and Louise Comas ([Pennsylvania State University](#)). Contact: Hilary S. Callahan.

The Autotrophic Contribution to Soil Respiration by *Quercus* and Its Associated Mycorrhizal Fungi in Black Rock Forest: An Assessment for the Ecosystem Consequence of Foundation Taxon Loss Project. Kevin Griffin ([Lamont-Doherty Earth Observatory](#)). Contact: Kevin Griffin.

Land-Atmosphere Coupling at Black Rock Forest: The Role of Snow, Vegetation, and Soil Thermodynamics. Gavin Gong ([Department of Earth and Environmental Engineering, Columbia University](#)), Jason Smerdon ([Lamont-Doherty Earth Observatory](#)), and Jessie Cherry ([University of Alaska](#)). Contact: Jason Smerdon.

Effects of Host Defoliation and Distribution on Spatial Patterns in Ectomycorrhizal Fungi. J. D. Lewis ([Fordham University](#)). Contact: J. D. Lewis.

The Tamarack Pond Core as a Rosetta Stone for Impact Events: Correlation to Known Ejecta Layers. Dallas Abbott ([Lamont-Doherty Earth Observatory](#)). Contact: Dallas Abbott.

Long-Term Study (77+ years) of Tree Population Dynamics and Carbon Storage. William Schuster ([Black Rock Forest](#)). Contact: William Schuster.

Small Mammal Response to Oak Removal. Jenna Lawrence and Kate McFadden ([Department of Ecology, Evolution and Environmental Biology, Columbia University](#)). Contact: Jenna Lawrence.

Insect and Arachnid Diversity of Black Rock Forest. Vladimir I. Ovtsharenko ([American Museum of Natural History](#)). Contact: Vladimir Ovtsharenko. ■

Small Grants Awarded

For the 20th year, and the eighth generously funded by the Stiefel Foundation, Black Rock Forest awarded [Small Grants](#) to Consortium scientists and educators, helping them to start new projects, fund summer student research, and produce publications and theses. This year's grants totaled just under \$25,000.

Three projects build on work begun last summer (see "Small Grants Attract Scientists, Teachers to Forest," [Spring 2008](#)). Drs. Chanda Bennett and Eleanor Sterling, from the [Center for Biodiversity and Conservation](#) at the American Museum of Natural History, along with Dr. Kate Jones from London's [Institute of Zoology](#), will continue their study of the distribution, assemblage, and activity of bats in Black Rock Forest and in other sites in and around New York City.

Dr. Christine Johnson ([American Museum of Natural History](#)) will continue her work on the ecology of slave-maker ants and the effect of geographic variation of parasites and hosts on the co-evolution of these species. And Dr. Kate McFadden, from the [Department of Ecology, Evolution, and Environmental Biology \(E3B\)](#) at Columbia University, will once again examine the impacts of oak tree loss on small mammal diversity and abundance, part of the Consortium's multi-year, multi-investigator oak forest sustainability research project (see "Oak Project Update," [Spring 2008](#)).

In a new project, Dr. Christine Sheppard ([Wildlife Conservation Society](#)), along with Dr. Shahid Naeem (Columbia E3B), will investigate the reproductive effects of mercury in red-winged blackbirds (*Agelaius phoeniceus*), adding to the breadth of the Forest's mercury research projects (see "Mercury Research Takes Off," [Spring 2007](#)).

Robert Wallace, Susan Kirch, and Mary Leou from [New York University](#) were awarded a grant for digital ecological modeling for educators and students. Allan Frei and Deborah Gardner of [Hunter College](#) received a grant to expand research and education associated with the Forest's snow research station. ■

Join Us! Become a Friend of Black Rock Forest!

New Member or Renewal

- | | |
|--|------------------|
| <input type="checkbox"/> American Chestnut | \$10,000 or more |
| <input type="checkbox"/> Red Oak | \$5000 |
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| <input type="checkbox"/> Tamarack | \$500 |
| <input type="checkbox"/> Moosewood | \$250 |
| <input type="checkbox"/> Sugar Maple | \$100 |
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Name _____

Address _____

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My company will match my gift.

Company name and address _____

Please send me information concerning:

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I would like to volunteer to help with the following:

Please make checks payable to the Black Rock Forest Consortium and mail with this coupon to: Black Rock Forest, 129 Continental Road, Cornwall NY 12518-2119. *All contributions are tax-deductible; the Consortium is a 501(c)(3) organization. Thank you!*

Forest News in Brief

Research Symposium June 22! On Monday, June 22, Black Rock Forest will hold its sixth [Research Symposium](#). Scientists conducting research in Black Rock Forest and around the Hudson Highlands will give presentations about their work. At the fifth Symposium, in 2007, some 30 scientists gave talks on long-term biological studies, biological diversity, invasive species, mapping and monitoring, chemical cycling, earth science and the carbon cycle, and watershed studies. More information will be available on the Forest web site soon.

Forest Starts Selling Excess Energy Back to Utility. Thanks to New York State's new net metering law, which allows not-for-profit institutions to receive credit on their utility bills for energy they send back to the grid, Black Rock Forest Consortium is now earning money from its solar panels. In the first month of net metering, the Consortium received a credit of nearly one-third of the total charges. Thanks go to State Senator Bill Larkin for co-sponsoring this bill.

Recognition for Executive Director. Forest Executive Director Dr. William Schuster has been elected vice-president of the [Organization of Biological Field Stations](#), whose membership includes nearly 200 field stations from around the United States and North and Central America. In addition, Dr. Schuster was asked to participate in a National Science Foundation-sponsored planning workshop guiding development of one of the country's first [NEON](#) field stations at the Ordway-Swisher Biological Station operated by the University of Florida.

Second Field Ecology Research Internship. Building on the success of last year's inaugural residential field ecology research internship program for high school students (see "Two Weeks of Forest Ecology for High School Interns," [Fall 2008](#)), this year's program, once again led by Dr. Terryanne Maenza-Gmelch and research assistant Angelica Patterson, both from [Barnard College](#), will be held from July 5 to 17. A dozen science-interested students will gain exposure to future careers in the sciences, while learning the skills needed to participate in scientific investigations.

Support the Forest Crew! Matt and Ben Brady, the sons of Forest Manager John Brady and Administrative Assistant Barbara Brady, along with Matt's dog Rogue, are attempting to hike the entire 2200-mile Appalachian Trail from Georgia to Maine (see "Forest Manager Report," [Winter 2009](#)). By early May, they had reached Virginia! As veterans of the Forest Crew, volunteers who help with bridge, trail, and other work, they are using the hike to raise money for the Crew. To help, please see www.blackrockforest.org/pdf-files/AppalachianTrailPledgeCard.pdf.

Forest and Cornwall Plant 400 Trees for 400 Years. The Consortium and other Cornwall groups have pledged to plant at least 400 trees this year, in part to help celebrate the 400th anniversary of Henry Hudson's original voyage up the Hudson River. The Consortium has already planted several dozen trees with students from the Dalton and Trevor Day schools. The trees will help to reforest areas with hemlock tree mortality and ice storm damage, and the shade will keep streams cool for species like brook trout. ■

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Join the Forest Ride!
October 10-12
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Report from the Forest Manager

My sons Matt and Ben, and Rogue the dog, are well on their way hiking the Appalachian Trail [Ed. Note: See "Report from the Forest Manager," [Winter 2009](#)]. As of mid-May, they have hiked more than 700 miles north from the starting point, Springer Mountain, Georgia. With the use of a tracking device called "Spot," coordinates of their location are transmitted to a web site. Third- and fourth-grade students in Cornwall have been following their journey online. They support the three by sending letters, cookies, and dog bones, as well as their inspiring energy. Other supporters are also following the progress of this "Corps of Discovery" and offering their wishes for success.

Back here at the Forest, the ice storm of December 12 is still being dealt with [Ed. Note: See photo, p. 4]. The ice storm brings to mind other natural events that changed the appearance of the Forest in just one day. Hurricane Floyd on September 15, 1999, and the March 16 blizzard of 1993 were also events that appeared disastrous. Most change in

the Forest is gradual, but a one-day, Forest-changing event can seem catastrophic to the human eye and mind. The Forest reacts well to disturbance. Reproduction begins almost immediately when the sunshine reunites with forest soil.

The new openings in the canopy left by falling limbs and trees result in new light penetration to the forest floor. This will start and continue the establishment of a new dimension of life and diversity. To create an "uneven-aged forest," multiple age classes must be present. The effect of December 12 will result in a new age class of trees, owed to a day of devastation. Or was it just a much needed disturbance?

I send a hearty thank you to all the volunteers who have helped the clean-up so far. We know the magnitude of your work and are grateful. The money pledged to the Forest Crew by supporters of Matt, Ben, and Rogue will have immediate use, supporting its continuing work clearing trails, roads, and fire breaks.

Also during this spring-summer, the Crew will plant white pine seed-

lings in areas of high hemlock mortality caused by the woolly adelgid. Historically, these huge hemlocks have been providing shade to the stream-sides of Canterbury and Black Rock Brooks. This shade helps maintain cool temperatures of the Forest's streams, creating habitats for brook trout as well as the many other organisms that require clean, cool, oxygenated water. Research at Black Rock Forest has shown plantings of white pine, black spruce, white cedar, and tamarack can serve as conifer replacements. Native white pine seedlings show the clearest ability to establish in sites vacated by hemlocks. Historically, Black Rock's northern ravines had more of a component of white pine mixed with hemlock and other species, including sycamore and yellow birch.

If you would like to volunteer, or know a young student who is interested in getting to know forest work, it can readily be found at 9 am on Saturday mornings at the Forest shop on Continental Road. Please contact me for more information. ■

— John Brady