

Fall 2008

The Black Rock Forest Consortium

Volume XVIII, No. 3

# Two Weeks of Forest Ecology for **High School Interns**

Field Ecology Research Internship brought together eleven high ship funding from the Bay and Paul school students, one Barnard professor, one Barnard research assistant, and Forest staff and researchers for two weeks, staying in the Forest Lodge, of research, exploration, and fun. "I am so happy I got the chance to do this internship," said Ben Fasano, a <u>Cornwall High School</u> student. "I loved all the aspects of the from Barnard's Department of Enviprogram."

Six of the students were boys and five were girls. Some came from the area around the Forest: three, including Ben, from Cornwall High School and two from the Newburgh Free Academy. The others came from New York City: two from the High School for Environmental Studies, two from the Urban Assembly for Applied Math and Science (in the Bronx), one from Manhattan/Hunter Science High School, and one from the Trinity School. One of the students also participates in the Central

July, Black Rock Forest's first Park Conservancy's Scholars program. Thanks to generous scholar-Foundations, the Dyson Foundation, the Community Foundation of Orange and Sullivan - Christopher and Ellen Byrne Charitable Trust Fund, and the Herbert H. Lehman College Fund, Inc., all the students selected for the program were able to attend.

> Dr. Terryanne Maenza-Gmelch, ronmental Science, designed and led the course. "My overall goal was to immerse the students in forest ecology - geology, soils, plants, insects, birds, reptiles, amphibians, forest history - in the first week of the program so they could participate in research projects in the second," she explained. "Students learned to identify the trees they were working with, the birds they were hearing while they worked in the field, and anything else that came by, like snakes, newts, and salamanders. They were (continued on page 5)

The summer interns atop Black Rock Mountain (photo Angelica Patterson).



## **Golden Ridge Dedication Honors** Consortium Founder

May 17, some 80 people  ${f n}$  gathered at the Forest to dedicate Golden Ridge in honor of William T. Golden, founder of the Black Rock Forest Consortium, who died October 7, 2007. Located in the western part of the Forest, Golden Ridge is about one mile long and lies 150 feet above Sutherland and Sphagnum Ponds. The Stillman Trail, named after Forest founder E. G. Stillman, runs along much of its length, and the ridge offers a dramatic view over Sutherland Pond to the skyline of New York City, visible in the distance on clear days.

At the dedication ceremony, Consortium Executive Director Dr. William Schuster unveiled a large boulder that had been moved, by Forest Manger John Brady, to a site just below the Ridge. The boulder is inscribed "Golden Ridge. In honor of William T. Golden, visionary founder of the Black Rock Forest Consortium. 2008." Dr. Schuster was joined by Sibyl R. Golden, Chairman of the Consortium and Mr. Golden's daughter, and Catherine Morrison Golden, his widow. Following the unveiling of the boulder, many guests hiked up to the top of Golden Ridge.

Dr. Philip V. Ammirato, a Barnard professor and the first president of the Consortium, described how Mr. Golden began to develop the idea for the Consortium in 1981, eight years before its founding in 1989. "The energy and commitment he showed for Black Rock Forest belied his many other activities," Dr. Ammirato said. "But the Black Rock Forest Consortium he envisioned and worked so hard to establish continues to grow and develop and reach for that vision (continued on page 4)

## **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 3835acre 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 Brooklyn Botanic Garden Browning School The Calhoun School Central Park Conservancy Columbia University Cornwall Central School District The Dalton School Hunter College Marine Biological Laboratory at Woods Hole—The Ecosystems Center Metropolitan Montessori School Newburgh Enlarged City School District New York City Public School 311 New York - New Jersey Trail Conference New York University The School at Columbia University The Spence School Storm King School Trevor Day School

#### **Consortium Staff**

William Schuster, Ph.D., Executive Director John Brady, Forest Manager Jack Caldwell, Operations Manager Emily Cunningham, Development Director Barbara Brady, Administrative Assistant Matthew Munson, Data/Network Manager Hannah Roth, Research Associate/ Environmental Educator

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Black Rock Forest News Sibvl R. Golden, Editor Terry Murray, Photo Editor © 2008 Black Rock Forest Consortium

# **Report from the Executive Director**

many. People also ask: what are the most important actions we should be taking? The answer is more uncertain because often the scientific understanding needed is still quite lacking.

in forested areas has been increasing, ending a long forest regrowth period. Development of forest land increases fragmentation of remaining forests, increases the ratio of forest edge to interior, and reduces habitat critical for the survival of some species. Reduced native diversity, declining water quality. and increased runoff and flooding risk may result.

Forest soil and ecosystem acidification, resulting from excess acid deposition, causes nutrients such as calcium and magnesium to bind more tightly to soil particles, reducing growth and productivity. In highly acid soil, aluminum availability can rise to toxic levels and may be released to fresh waters. Some nutrients can be leached from soils, and soil biota can be altered. Acidification increases forest susceptibility to other biotic and abiotic stresses.

Aggressive, non-native species continue to spread around the region. Many of them colonize and flourish under highly disturbed conditions, outcompeting native species and dramatically altering ecosystem function. They may spread from disturbed areas: even the flora of relatively undisturbed Black Rock Forest includes over 20% non-native plants.

Outbreaks of pests and pathogens, native or non-native, can have major impacts on forest composition and ecosystem processes such as productivity and nutrient cycling. Outbreaks that threaten "foundation response rate of many species. taxa" (such as oak, maple, or conifers) that regulate climate, hydrology, fire, carbon storage, and nutrient cycling can dramatically impact ecosystem function. Many forest taxa that were resilient to past perturbations now face significant biotic challenges.

Extirpation of top predators has altered regional trophic structure for more than a century, "decapitating" food webs and releasing populations of many herbivores, especially deer,

Deople often ask: what is the most from "top-down" regulation. Excesimportant challenge to forest sive deer populations compete with health and sustainability in our re- other animals for food resources, gion? My answer is that there are serve as vectors for Lyme disease and, by browsing on seedlings, severely impact oak regeneration and community dynamics, threatening the future of many Highlands forests.

Many of these factors are interre-The regional rate of development lated or interact to produce particularly important threats. In much of the Highlands region roughly south of Interstate 80, soil and growing conditions are good and trees may be unstressed. But this area faces high development pressure, heavy habitat loss, and fragmentation. Here trophic imbalance/regeneration failure may interact with pressure from aggressive, non-native species to accelerate further forest change. To the north, in many northern New Jersey and New York uplands, the rate of forest loss is slower, but trees growing under stressful, acidic conditions have experienced increased mortality due to cumulative impacts. Combined with widespread regeneration failure, this portends a future massive turnover. In both cases, rates of ecosystem change will likely be accelerated by major pest or pathogen outbreaks.

And then there is climate change, a challenge that will interact with many of these other factors. Air temperatures have been increasing, due primarily to warmer winters and summer nights, spring has been arriving earlier, and winter snowpacks have been reduced. There may be an increased incidence of weather extremes, heavy precipitation events with potential for flooding, and/or droughts that may be accompanied by increased fire incidence. Forest composition has already been changing and the current rate of climate change may be more rapid than the

Just as these factors do not occur in isolation, so the best conservation and management strategies need to take into account these multiple, interacting issues. Further basic and applied research will be needed to help guide our actions. We hope that some of the studies and scientists described in this newsletter will help guide our forests toward a healthier and more sustainable future. ■

— Dr. William Schuster

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## Consortium Day: Stillman Award to Dr. Gene Likens

onsortium Day was held on June 8, 2008, and, despite humid weather and a sudden downpour, a good time was had by all.

Executive Director Dr. William Schuster presented this year's Stillman Award to Dr. Gene Likens, founder of the Cary Institute for Ecosystem Studies, cofounder of the Hubbard Brook Ecosystem Study, codiscoverer of acid rain, and recipient of the 2001 National Medal of Science and the 2003 Blue Planet Award. In his remarks, Dr. Schuster detailed Dr. Likens's many scientific accomplishments and hailed him as one of his "personal heroes." Named after Forest founder E. G. Stillman, the Award is given annually for environmental leadership and support of the Black Rock Forest and the Hudson Highlands region.

special award for Dr. H. James Simpson, a recently retired Columbia professor and Lamont-Doherty Earth Observatory researcher. Dr. Simpson served on the Consortium Board for 17 years, as well as on the Consortium's Executive Committee and Science and Education Committee, studied the biogeochemistry of the Forest and trained his students there, helped familiarize his colleagues with Black Rock, and "was a constant source of well-considered advice and a good friend all along the way." Since Dr. Simpson has moved to Virginia, Consortium President Frank Moretti accepted the award for him.

During the program, Dr. Schuster invited Cornwall-on-Hudson Mayor Joe Gross to speak. Mayor Gross described a possible micro-hydro col-

Dr. Schuster also presented a laboration between the Forest and Cornwall that could potentially provide energy to the Forest as well as power to operate part of Cornwall's water system in the Forest (see "Forest Demonstrates Renewable Energy Options," Winter 2008).

> Consortium Day guests could hear scientists discuss animal diversity on an urban-rural gradient, the ecology of composting toilets, spider diversity and response to disturbance, canopy tree mortality and forest health, and forest soil respiration studies. They could participate in brook trout study and release, look at native amphibians and reptiles, go orienteering, view displays of school projects, learn from nine research posters hung in the Science Center, and bid in a silent auction of art created by students in the Walkill River School of Art.

## A Busy Summer in Black Rock Forest!

**C** cientists, students of varying ages,  $\mathcal{O}$  and interns flocked to the Forest this summer, taking advantage of the break in the academic year to conduct field research and participate in multiday programs.

Research included long-term projects on the sustainability of oak forests (see "Oak Research Update," p. 6) and on differences in plant growth and environmental variables along an urban-rural gradient (see "Field Season Yields Plant Growth Data," Winter 2007). Other researchers included some of this year's Small Grants awardees. Dr. Hilary Callahan of Barnard College, with Dr. Louise Comas of Penn State University and a team of five undergraduates, worked on an NSF-funded study of tree roots; Dr. Chanda Bennett, from the American Museum of Natural History (AMNH), used acoustic technology to track bats; and Dr. Christine Johnson, also from AMNH, studied evolutionary relationships of slave-making ants (see "Small Grants," Spring 2008).

Dr. Jason Mushi-South, from Baruch College (part of the City University of New York), used the Forest as one of ten urban, suburban, and rural sites for an NSF-funded study of small mammal populations and their genetics in urban areas; as a guest researcher, he pays a facilities use fee.

of the summer was the Consortium's two-week Field Ecology Research Internship program for high school students (see p. 1). Other programs for students and teachers included a week-long NSF-funded meeting on improving geoscience education, led by Dr. Kim Kastens of Lamont-Doherty Earth Observatory; the three-week Summer Ecosystem Experiences for Undergraduates (SEE-U), run by Columbia University and the Center for Environmental Research and Conservation (CERC) and led by Dr. Matt Palmer; CERC's threeday high school program and teacher

#### Dr. Christine Johnson studying ants.



One of the educational highlights training institute; three-day visits by Central Park Conservancy (CPC) high-school-level summer interns and trips by students in other CPC programs; overnight visits by students in American Museum of Natural History summer programs; a two-day forest orientation/teacher training program for Cornwall Schools teachers led by Caryn Mante; and a retreat for the Spence School.

> Summer interns Laura Diefenbach (Barnard College), Arianna Koudounas (NYU's Environmental Studies program), and Alyssa Trombitas (Harvey School in Westchester) helped scientists working on the oak forest study and other projects. Jack Caldwell, the Consortium's operations manager, and Research Associate/ Educator Hannah Roth spoke about research in the Forest to Newburgh students participating in a program for high-achieving students entering eighth grade, run in collaboration with Mount Saint Mary College.

> The Forest also hosted non-Consortium visits: the Moodna Watershed Summit attracted 75 attendees, and the Earthwatch program brought more than a dozen participants, led by Dr. Catherine Burns of WildMetro, to the Forest for five week-long studies of animal populations on an urban-rural transect.

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arge-scale alteration of forest ecosystems due to disease could result in dramatic changes in community and ecosystem structure and composition. Black Rock's oak loss project [Ed. Note: See "Oak Research Update," p. 6] provides a unique opportunity to observe the effects of this type of ecosystem change on the small mammal community.

Many small mammal species depend on oak trees as an important source of food and habitat, and thus oaks can be important factors for fitness and survival. Relationships between oaks and small mammals can even affect the risk of Lyme disease transmission since its prevalence is determined by interactions among amines the interactions between a acorns, white-footed mice, gypsy moths, deer, and ticks.

For my master's thesis, I am studying the effects of oak loss on the small mammal community, specifically whether loss of oaks or other trees will cause a change in the relative abundances of species and/or

**Golden Ridge** (continued from page 1) Bill Golden saw 27 years ago." He also noted that the Ridge itself is predominantly gneiss, a metamorphic derivative of granite. "Granite implies endurance and steadfastness, and is often used for buildings and monuments. Its derivative gneiss adds a wonderful sheen and glow. This is indeed a suitable ridge to serve as a memorial to William T. Golden."

Back at the Forest Lodge, Dr. Joel E. Cohen, a professor at both Rocke- purpose, of spontaneity and disci-

oak project study plots, I am trapping small mammals, collecting insects, analyzing fecal matter to determine mammal diets, and using data from vegetation surveys to explore the relationship between oaks and small mammal communities.

I collect general morphological data on the animals I trap and then tag them so I can make abundance estimates and discover whether any travel from plot to plot. I will compare my small mammal data to data obtained before the study plots were treated and also look at differences between the control and altered plots.

This study is unique in that it exdominant tree species in a forest ecosystem and small mammals. If the population of one species is altered, this could result in changes in other species. For example, a loss of oaks will deplete the white-footed mouse's food source (acorns) and could thereby lower the density of mice in that area.

changes in species' diets. Using the The change in vegetative composition will also change insect composition, thus also potentially affecting the diet of some small mammals.

> I am still early in my research, but I have so far captured whitefooted mice, Eastern chipmunks, redbacked voles, woodland voles, shorttailed shrews, masked shrews, Northern flying squirrels, Southern flying squirrels, and long-tailed weasels. I predict that the relative abundances of species will be different in the treated plots than in the control and pretreatment plots. Small mammal species composition will change in altered oak habitat as some species supplement their diets with other forage while other species move elsewhere. The data from this study will contribute to a better understanding of the complex interactions between plant and animal species in eastern forest ecosystems.

> Stephanie Seto is in her second year of Columbia University's Conservation Biology MA program.

feller University and Columbia University and a member of the Consortium board, described Mr. Golden's "infinite creativity in search of a favorable deal, his inexhaustible tenacity, and his enormous patience. Bill loved the Black Rock Forest and chaired the Consortium from its founding to the year of his death." He also spoke of his personal connections. "Bill Golden was a man of humor and seriousness, of warmth and

pline. How lucky we have been, those of us who knew Bill Golden, the public and private man."

"It was wonderful to enjoy the presence of so many friends of Bill and of the Forest," said Dr. Schuster. "Many people who were not able to attend sent notes and were here in spirit. We have applied to the Domestic Geographic Names division of the US Geological Survey so this mountain will officially bear the name of Golden Ridge in perpetuity."

Dr. Philip Ammirato, Sibyl R. Golden, John Brady, Catherine Morrison Golden, and Dr. William Schuster, with boulder inscribed to William T. Golden (left) and the view from Golden Ridge (right) (photo by Chris Gonzalez).





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**Ecology Interns** (continued from page 1) able to place any insect that flew or crawled by in the correct order." She was ably assisted by Angelica Patterson, a program manager in Barnard's Environmental Science department, a research assistant in Barnard's Biological Sciences department, and a master's student at Columbia.

#### The Program

The internship kicked off with an orientation session familiarizing students with the field equipment they would be using, including binoculars, and with key forest safety points, including avoiding bees, ticks, and poison ivy. During the first week, the students not only learned to identify and classify plants and animals, but also explored different habitats within the Forest and studied key ecological concepts such as population and community ecology, biomes and climate, biodiversity and forest ecosystem services, and anthropogenic and biotic impacts on forests. They learned about the scientific method and field techniques, including gathering data along transects, orienteering, and keeping field journals. Daily quizzes kept them on their toes.

In the second week, the students had the opportunity to work with scientists conducting research at the Forest, including Executive Director Dr. William Schuster, Dr. Kevin Griffin from Lamont-Doherty Earth Observatory, and Jen Levy, a doctoral student in Columbia's <u>Department of</u> <u>Earth and Environmental Sciences</u>. They also participated in the Forest's ongoing soil respiration research by preparing material in the lab, collecting data in the field, and analyzing the data in the classroom.

In the evenings, the interns stud- tid ied, read, wrote in their journals, saw so Shrub identification *(photo Angelica Patterson)*.



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ecological movies - and had fun. Angelica Patterson organized a plethora of activities: ping pong, ultimate frisbee, guitar playing and singing, baking blueberry muffins with blueberries the students had picked, and traditional camp crafts. Over the weekend, they climbed the fire tower, helped clear Continental Road, and had a barbeque at the Stone House, as well as doing their homework (plotting trantheir reports).



sect data and writing At Aleck Meadow Pond with turtle nets (photo Angelica their reports). Patterson).

Doctoral student Jen Levy demonstrating equipment for measuring soil respiration *(photo Angelica Paterson).* 



### Highlights

Dr. Maenza-Gmelch identified several highlights of the program. In addition to contributing to the Forest's soil respiration studies, the students

> added to the Forest's ongoing turtle population assessment by trapping turtles humanely in Aleck Meadow Pond, using digital scanners to identify previously captured turtles, recording data for each turtle caught (species, weight, size, sex), and releasing them (see "Analyzing Turtle Census Data," Winter 2005). Dr. Maenza-Gmelch added that they also had the opportunity to experience the scientific method themselves "by posing a question in the classroom they choose."

(what is the most common tree growing near stream habitats?), choosing a method to address the question (point-centered quarter method), going into the field, applying the method, collecting the data, and returning to the classroom to enter the numbers into spreadsheets, calculate the results, and discuss them."

### Reactions

"My favorite activities were hiking, learning the history of the Forest, swimming, owling, conducting experiments, and searching for blueberries," said Cornwall student Ben Fasano. "I enjoyed the field work, doing hands-on testing and getting information for the researchers, and I was as much part of the woods as I had hoped."

"The students said the internship was both harder and better than what they had expected," concluded Dr. Maenza-Gmelch. "They found that research is no longer a mystery to them. They really liked it and they could see themselves doing more of it in the future."

"It has been one of our goals to provide this intensive training and authentic research experience to outstanding high school students," Dr. Schuster said. "Funding from the Bay and Paul Foundations and others made it possible to offer this outstanding program on a need-blind basis. The students really immersed themselves in the experience, day and night, and did a great job. This internship program will help them be more prepared for college and eventually establish careers in science if they choose."

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# **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).

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

**Cycling of Mercury in Terrestrial Environments.** Allan Frei (<u>Hunter College</u>, City University of New York), Anthony Carpi (John Jay College, City University of New York), David Evers (<u>Biodiversity Research Institute</u>), and Roger Claybrook (<u>US Mercury Deposition Network</u>).

**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).

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

Functional Ecology of Complex Plastic Traits in Forest Trees: Pilot Studies of Reproductive and Root Traits. Hilary S. Callahan (<u>Barnard College</u>) and Louise Comas (<u>Pennsylvania State University</u>).

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).

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).

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

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

Long-Term Study (77+ years) of Tree Population Dynamics and Carbon Storage. William Schuster (<u>Black Rock Forest</u>).

**Small Mammal Response to Oak Removal.** Jenna Lawrence and Kate McFadden (<u>Department of Ecology</u>, Evolution and Environmental Biology, Columbia University).

Moss-Microarthropod Community Response and Recovery from Environmental Disturbances at Black Rock Forest. Shahid Naeem and Claire Jouseau (Department of Ecology, Evolution, and Environmental Biology, Columbia University).

**Insect and Arachnid Diversity of Black Rock Forest.** Vladimir I. Ovtsharenko (American Museum of Natural History). ■

### Oak Research Update

Summer was a busy season for Black Rock Forest's multiyear oak forest sustainability study, designed to predict, in advance, some of the cascades of impacts that will result from the loss of oaks, a key species group, on northeastern forests. The study involves mimicking the effects of pathogens, such as sudden oak death, in experimental plots with and without deer exclosure fencing (see "What Will Happen to Our Forests If the Oaks Die?," Spring 2006).

Forest Manager John Brady and his crew girdled trees in the experimental plots and installed deer exclosures, so all treated plots are now available for study. Matt Munson, the Consortium's Data/Network Manager, installed sensors in the plots, with data-loggers, to collect continuous information on soil moisture, soil temperature, air temperature, and light.

Researchers, their students, and summer interns have completed their collection of most pre-treatment data, including tree diameter measurements, leaf litter composition, mycorrhizal fungi sampling, surveys of small mammals, spiders and ticks, measurements of soil nitrification and respiration, and surveys of understory vegetation and seedlings.

Early results, from a study on pilot plots run by Dr. Jerry Melillo and colleagues from the <u>Ecosystems</u> <u>Center of the Marine Biological Laboratory</u> demonstrated substantially increased nitrification and nitrogen availability in the absence of oaks.

In addition to Dr. Melillo, researchers include Forest Executive Director Dr. William Schuster, Dr. Kevin Griffin (Lamont-Doherty Earth Observatory), Dr. Shahid Naeem, Dr. Maria Uriarte, and Dr. Kate McFadden (Department of Ecology, Evolution, and Environmental Biology at Columbia), Dr. Vladimir Ovtsharenko (American Museum of Natural History), Dr. Kathleen Weathers (Institute of Ecosystem Studies), Dr. Aaron Ellison (Harvard), and Drs. J. D. Lewis and Amy Tuininga (Fordham).

Generous funding from the Ralph E. Ogden Foundation, the Howard Phipps Foundation, the Arthur Ross Foundation, and the Golden Family Foundation supported this summer's oak forest research. ■

$\Box$ New Member or $\Box$ Renewal			
□ American Chestnut □ Red Oak □ White Oak □ Tamarack	\$10,000 or more \$5000 \$1000 \$500	Name Address	
☐ Moosewood ] Sugar Maple ] Individual ] Student/Over 65	\$250 \$100 \$20 \$15	Phone E-Mail D My company will match my gift. Company name and address	
□ Family \$25 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) organi- zation. Thank you!		<ul> <li>Please send me information concerning:</li> <li>Gifts of land/real estate</li> <li>I would like to volunteer to help with the following:</li> </ul>	

## Forest News in Brief

the intrepid bicyclists who will ride 230 miles - from New Senator Bill Larkin who represents the Forest's area in York City to the Catskills and back - over the Columbus Albany, not-for-profit organizations like the Consortium Day weekend to support research and education programs in Black Rock Forest. Riders spend two nights in the Black Rock Forest Lodge. Last year's inaugural ride raised almost \$50,000 (see "The Green Ride Raises \$48,000 for Forest Education Programs," Winter 2008). Visit www.thegreenride.org and click on the link at the Black Rock Forest Consortium awarded a Small Grant to top of the page to support the Black Rock Forest team.

Consortium Turns 20 in 2009! Next year, 2009, is the Consortium's 20th anniversary. Among the celebratory events being planned is a luncheon in New York City on May 13, 2009. You'll be hearing more about this anniversary in future issues of the newsletter.

Forest Manager John Brady Receives Award. The New York team of the Global Sports Alliance (GSA), an official partner of the United Nations Environment Programme, presented its inaugural Environmental Stewardship profiles, with maps, of 17 homestead and other sites Award to John Brady on July 17. GSA team captain Kevin Trotta said, "As the first recipient of this award, John has set the bar very high. . . He studies and defends 20, as part of an International Coastal Cleanup, the Cornnature and points the way to a future where humankind lives, and plays, in balance with the natural world."

Credit for Solar Energy Production. Black Rock Forest's solar panels have been producing energy for the Science Center since January 2006; they produce so much vancy. If you are interested in volunteering for the Cornon long sunny days from May to July that the Forest can wall cleanup, please contact Kevin Trotta [phone number send energy back to the grid. Now, thanks to New York and e-mail deleted from online version]. ■

Support the Green Ride! There's still time to support State's new Net Metering Law, cosponsored by State can receive credit from their electric utility for the solar energy they return to the grid. Previously, only individual homeowners were entitled to credits that offset their electric bills. Thank you, Bill Larkin!

> Forest Land Use History Now Online. In 1994, the Dr. Neil M. Maher, now of the New Jersey Institute of Technology and Rutgers University, to write an environmental history of the Forest before its establishment as a research forest by Ernest Stillman in 1928. His report, Black Rock's Hidden Past: A History of Land Use Practices Prior to the Creation of Black Rock Forest, is now available on the Forest's web site (www.blackrockforest.org/docs/ about-the-forest/the-forest/misc/NeilMaherLandUse History.html). Visitors can view the entire report and read within the Forest.

> Forest Supports Hudson River Cleanup. On September wall Conservation Advisory Council is sponsoring a Hudson River cleanup. This is part of the International Coastal Cleanup, coordinated in New York by the American Littoral Society with support from the Ocean Conser-

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# Report from the Forest Manager

 ${f N}$  ative trees – Native Americans: Golden Ridges. As the stream pro- Below 400 feet, joined by Black both linked directly to the land, ceeds, it is joined by Black Rock Rock Brook, the stream's banks supboth a result of continual evolution, Brook and then continues through port American sycamore, also called new generations built on the past. Cornwall to the Hudson River. The alligator wood due to its two-toned This slow change has been acceler- native richness of the Brook's upper peeling bark. It is a favorite of wood ated over the past five centuries by watershed is the forest management ducks, which will nest in the lofty the migration of foreign cultures ac- legacy of Henry Tryon, with slopes cavities left by broken limbs. Its pocompanied by their plants and ani- dominated by multiple oak and maple rous wood is very difficult to split and mals, diseases, and pests. Changes species, and a lesser presence of hick- was sought after for butcher blocks. caused by this "luggage" greatly influ- ory and birch. enced the evolution of both Native American societies and native forests.

forest, a product of land clearing, dense growth formerly benefited prevalent. This fast-growing, largechestnut blight, and tree harvesting, ruffed grouse, a 20th century symbol girthed, softwood tree was good for 80 years ago, forest recovery was not of forest richness. Laurel wood is carving dug-out canoes to navigate greatly influenced by deer herds, and tough and nicely grained, good for the Hudson. It is susceptible to the the introduction of European and Asian plants was in its infancy. The forest returned to native woods. Now, the natural succession of native forests is affected by high deer densities, hemlock trees, a majestic sight in valuable growing space. and global disease, pests, and plants.

much of its native forest integrity, thereby supplying sufficient oxygen to and has supported the development One of its native strongholds is the brook trout in stream-fed pools. The of many forests and human cultures. Canterbury Brook watershed. Its up- arrival of the woolly adelgid, an Asian The continued health of this enchantper crest line peaks between Split insect, in the 1990s brought abrupt ing watershed will determine the fu-Rock (1400 feet) and Eagle Cliff (1443 change to this species, quickly and ture life it will be able to support. ■ feet), contained by Sackett and fatally defoliating scores of trees.

dense growth of mountain laurel, a of the poplar family that takes advan-When Henry Tryon managed this beautifully flowering shrub whose tage of wet, sandy soils, becomes smoking pipes and novelties that leaf-eating, non-native gypsy moth, must resist high temperature.

1000 to 400 feet, it is bordered by non-native Norway maple, limiting their prime. Year-round shade from Black Rock Forest still maintains hemlocks kept the brook water cool, drained numerous glaciers over time

As the streambed approaches the The stream banks support a Hudson River, cottonwood, a member but of even greater concern is the de-As the stream descends from velopment and competition of the

The Canterbury Brook has