



BLACK ROCK
FOREST
CONSORTIUM

65 Reservoir Road
Cornwall, NY 12518

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Report from the Forest Manager

Considering past stewardship of Black Rock Forest reveals many Cornwall influences. Names like Stillman, Babcock, Chatfield, Staples, Gould, and Faurot have visited and helped steward this mountainous forest landscape since the earliest mountain farmers. Their care for this land was passionate and included awareness of forest labors by previous generations, adapting the forest and land to changing needs and wants in a respectful manner. The Forest's visual splendor invigorates the soul and inspires thoughtfulness. It often instills valuable qualities in visitors; stewardship is the response by some.

The Forest is appreciated through many different human activities, all providing opportunity to enrich one's life with a Black Rock journey. This feeling of forest stewardship is perhaps best exemplified by three Faurot men fortunate enough to enjoy Black Rock Forest through all stages of life. Befriended by wood crews, they were consistently helpful and cheerful in the Forest. From boyhood and before, these locals always retained clear remembrances of Forest experiences. Rarely seen together, they were unified by declaring the Forest as their "church" and sanctuary.

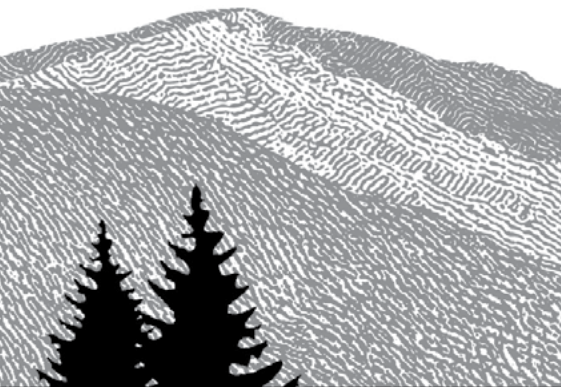
The senior friend to the forest has been Phil, acquainted with Forest directors since the first, Henry Tryon. Most Forest visits during his 85 years were spent identifying and observing winged forest creatures. Phil, a navy engineer, was meticulous

with details, often quoting the means to the proper bird identification. Phil annually obtained his Forest pass to drive to early morning birding sites, not only to identify birds but also to find sanctuary and reflect on years gone by.

Peter, of 75 years, was always a guardian of the forest he knew so well, and served as Captain of the Fish and Game Club Patrol. Pete's knowledge of the Forest affirmed respect and authority. A favorite of 1950s Forest Director Ben Stout, Pete linked the Forest's past to the present. Pete stood in defense of Forest rules and regulations, and was always personable to hikers as if the Forest was his domain.

Youngest of the three was Tory, of 54 years and son of Peter. Having a keen sense of locating animals, especially deer, turkey, and ruffed grouse, he was always helpful to Forest studies. Tory was proud to be a member of the long line of forest crewmen. He was a natural at woodsman work, "capable of inflicting bodily fatigue" as in the quote by Meriweather Lewis describing his Corps of Discovery. Thoughtful and a man of his word, any request of forest needs was quickly attended. Such actions of stewardship are the soul of Black Rock Forest.

All three Faurots had the sense of passing along a Black Rock journey. With their departure from this life, these men of the Forest leave their examples of unselfishness and prideful stewardship of Black Rock Forest. — *John Brady*



BLACK ROCK FOREST NEWS

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Work Starts on New Visitor Access Pathway

Work has started on Phase 1 of the new Visitor Access Pathway (see "New York Funds New Visitor Access Pathway," Winter 2015), the route that leads to a spectacular viewpoint and is ADA-compliant. The Consortium has hired a construction contractor, Tahawus Trails LLC, through a competitive bidding process, to start work in May, with the section to be completed by September. A Department of Environmental Conservation (DEC) Endangered Species Management Plan was adopted and enacted, and two thorough archaeological surveys have taken place. Eddie Walsh, a preeminent trail designer who has worked for the New York-New Jersey Trail Conference, prepared the plans for the trail.

Additionally, New York State, which largely funded the work for Phase 1 through the Environmental Protection

Fund of the Office of Parks, Recreation, and Historic Preservation has made another grant of \$352,939 to the Black Rock Forest Consortium for Phase II of the Pathway, which will continue the route and connect it to the Forest trail network at Mailley's Mill Bridge.

The initial grant from the state for \$216,924 called for matching contributions from the Consortium, which will include materials from the Forest, like stone and wood, and volunteer labor from Consortium members and others. In fact, Forest Manager John Brady has already coordinated local volunteers and cleared close to 90% of the Pathway corridor understory, felled and cleared about 30 trees, and gathered approximately 150 cubic yards of stone for support walls. The Storm King School, the New York-New Jersey Trail Conference,

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Consortium Creates Endowment Fund

In 2015, thanks to the wonderful generosity of several individuals and families, Black Rock Forest Consortium had an important decision to make: what to do with approximately \$2.4 million that had been left to the organization by people who had remembered the Consortium in their estate plans.

The Consortium's Board of Directors discussed a gift acceptance policy that would address this important question in its spring and fall meetings, and created an Investment Committee and an investment policy. Ultimately the Board decided on a policy for planned gifts that would preserve flexibility, but prioritize creating enhanced financial stability for the Consortium, approving the creation of a board-designated endowment fund. With the approval of board chair Sibyl R. Golden, the daughter of the Consortium's founder, William T. Golden, the endowment fund is now named in Bill Golden's memory.

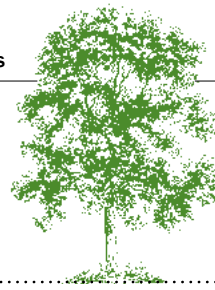
What does this mean for the Consortium? Our board and staff interpret it to mean that the organization has served constituencies, including students, scientists, hikers, and conservationists, well enough to inspire donors to take steps to help assure the Consortium's long-term existence. We are heartened and grateful to see the Consortium reach a point where supporters are helping it look decades into the future.

2015 was also the year in which the Consortium, working with its extraordinary partner, the Open Space Institute, was able to negotiate a conservation easement with New York State over 3,777 acres of Black Rock Forest. As previously reported (see "Major Conservation Milestone," Winter 2015), this is the largest conservation easement in our region, and the genesis of a new \$1.5 million fund for further conservation of

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Current view from Pathway viewpoint. (Photo: Whitney Schuster)



Report from the Executive Director

Papers in major science journals have reported increasing tree mortality in forests around the world. In some cases the mortality agents are pests or pathogens spreading into new areas. In some cases changes in climate appear to drive the mortality. But every tree dies eventually, so is this really a cause for concern?

Forest tree mortality is typically followed by successional events as dying species are replaced by others. Dead trees continue to function in ecosystems by providing structure, supporting food webs, and recycling nutrients. And high rates of annual mortality are normal in some stages of forest development. Only half of the many young trees on Black Rock's long term plots in 1930 survived the following 40 years of intense competition as the forest matured and surviving trees grew to large size.

Thus high rates of tree mortality need not always cause concern. But forests play dominant roles both locally and globally in carbon and water cycling, nutrient conservation, energy balance, and climate amelioration. We need to know if high tree mortality rates are compromising important ecological functions. Are soils and nutrients still being retained? Is atmospheric carbon still being sequestered? Is a diverse assemblage of species still being supported? Are new trees replacing the old ones?

High mortality of canopy trees of dominant species can be a matter of concern. Dominant tree species are considered "foundation" species when they regulate microclimate and ecosystem processes and support large numbers of other species. Their loss, and especially large-scale changes of forest to non-forest, can dramatically impact biodiversity and ecosystem services such as provision of clean water and forest products and the storage of large amounts of carbon. Results from the "Future of Oak Forests" experiment, where we simulated attack by an oak pathogen, have shown Black Rock Forest to be resilient to low levels of disturbance, but high

levels of tree mortality resulted in drastic changes in ecosystem processes and losses of many sensitive species.

A 2008 Black Rock Forest paper documented a large increase in canopy tree mortality between 1999 and 2005 and a 15% loss of live tree biomass. The study plots did not even include eastern hemlock stands that had experienced more than 50% mortality. This dieback benefited organisms like termites and fungi, but had negative impacts on other species that depend on living trees. However, since 2005 mortality rates on these plots have decreased again to low levels.

Nevertheless, trees dying for no clear reason in multiple locations indicate that many tree populations are stressed (see "Forest Manager's Report," Fall 2014). When dying trees of foundation species are rapidly replaced by new trees the most dramatic impacts are mitigated. But oak regeneration continues to fail in many eastern forests. Despite lowered deer populations and flushes of new tree regeneration around Black Rock Forest, very few new oaks are becoming established and few new trees of any species are establishing, thus far, on our long term plots. Recovery from decades of over-herbivory is a long-term process.

Thus we should be concerned by increasing tree mortality, both locally and globally, when it involves large losses of dominant trees, especially if not followed by regeneration. We depend on healthy forests more than we realize, a point made by Jared Diamond in his book *Collapse* that documents the downfall of many civilizations after deforesting their lands. We must monitor and share globally forest health data in a consistent format accessible by everyone as in our Calvin Stillman research archive (<http://blackrockforest.org/research/environmental-data/forest-legacy-data>). We need to study further the local and global causes and consequences of this trend and identify management actions to help trees live longer, stay healthier, and successfully regenerate.

— Dr. William Schuster

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The Black Rock Forest Consortium advances scientific understanding through research, education and conservation programs. It is a not-for-profit 501(c)(3) organization supported by membership dues, grants, and gifts.

William T. Golden (1909-2007)
Founding Chairman

Consortium Staff

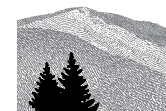
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New Visitor Access Pathway

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and the Cornwall Conservation Advisory Council have pledged to send volunteers to help with the Pathway, but other Consortium members can volunteer too. Anyone interested should contact John Brady. Volunteer labor will be most useful in May/June for final corridor clearing and in August for final tread laying and grooming.

Archaeological Results

Dr Christopher Lindner, an archaeological consultant, conducted the survey entitled “Archaeological Reconnaissance, Background Research, and Evaluation.” He consulted John Brady, who told him of a couple named Hager who lived near the trailhead a century ago, and also Cornwall municipal records. Town Historian Mary Ann O’Dell was able to find a 1902 map that showed the Hager dwelling. At the Black Rock Forest Symposium (see “Research Symposium,” Fall 2015), Dr. Lindner gave a slideshow illustrating his findings, including information on William Thompson Howell’s photographs and memoir, *The Hudson Highlands* (republished in 2010 by Bog Meadow Publishing in Cornwall), that included conversations with Philip Hager and Catherine Lancaster Howell. Howell (1873-1916) was a hiking enthusiast, photographer, and journalist. His posthumously published diary described Mr. Hager as, “[t]he best of his kind’ [who] is fast becoming the patriarch of the old-time natives in the Cornwall region, of which he knows every root and branch. He is a Cyclopaedia of Highland Knowledge, if you know how to get it out of him, a man of personality, a good friend and an unconscious poet.”

By digging trenches in the middle section of the Pathway, Dr. Lindner discovered rocks that may have been modified or collected by ancient Native Americans. The Pathway will be shifted to avoid this possible site, which might later be excavated, providing an opportunity for visitors to witness the process and students to share their discoveries with the public.

Interpretive signs are part of the plan for the Pathway. Dr. Lindner envisions one at the trailhead mentioning the Hagers and one at the end mentioning Mailley and his mill. “Thompson has great things to say about Phillip Hager, and an interesting perspective on Mailley,” he notes.



Eddie Walsh and Whitney Schuster obtaining side-slope measurements and identifying trees for removal. (Photo: Kate Terlizzi)



Possible ancient Native American artifacts were excavated in the central section of the Pathway from two half-square-meter trenches 10 meters apart. Left to right, top to bottom: quartz crystal pebble, half white, half clear; flint chip with three sharp edges, one bearing a row of flake scars as if worn by scraping wood; mica sheet, approximately 1 centimeter on a side; magnetite nugget, the kind of stone which may have prompted the name of Black Rock Forest.

Future Plans

Even with the generous grants from New York State, there are gaps in the funding for both phases of the project. For Phase I, the Consortium is hopeful of getting another grant to close the gap. For Phase II, there is a larger gap, because this section crosses the most challenging terrain. The Consortium hasn’t yet decided how best to address this, but is evaluating various options.

When complete, the Pathway will not only provide a route from the parking lot at the entrance that will enable visitors to the Forest to avoid the main entrance road with its vehicular traffic, but will also link at its end to the entire trail network of the Forest. As noted, the first part of the Pathway will be completely ADA-compliant, opening up the beauties of the Forest to wheelchair users, families with strollers, and the elderly. ♿

STUDENT RESEARCH SPOTLIGHT

Species Differences in Tree Physiology by Adefunke Sonaïke**Species Differences in Leaf Pigments, Nutrients, and Physiology of Deciduous Trees throughout the Growing Season**

I conducted my research for my senior thesis at Columbia University at Black Rock Forest. My research focuses on physiological differences among species of deciduous trees throughout the growing season. During periods of growth and senescence, different species vary in the timing and the intensity of nutrient investment. They also differ in the efficiency of their photosystems, and most visibly their leaf color during the autumn.

Because there is an abundance of chlorophyll in leaves throughout the summer, leaves are able to use sunlight for photosynthesis. But this level of photosynthesis cannot be supported during the winter because leaves would be damaged by the cold conditions. In order to conserve energy, trees resorb the nutrients from their leaves before they shed them in a process called senescence. Many deciduous trees also change the pigment expressed in their leaves to de-

crease the risk of photoinhibition (oxidative damage from overexposure to sunlight). These autumn pigments protect leaves from damage while nutrients that are normally used for photosynthetic processes are resorbed.

From May to November, I studied properties of leaves growing on five species of trees in Black Rock Forest. With the help of the Black Rock Forest staff, I sampled five naturally abundant species: *Acer rebrum* (red maple), *Acer saccharum* (sugar maple), *Robinia pseudoacacia* (black locust), *Quercus rubra* (red oak), and *Nyssa sylvatica* (black tupelo). Unlike the other four species, *Robinia pseudoacacia* is a nitrogen fixer (obtains nitrogen from a symbiotic relationship with nitrogen-fixing bacteria). Because this species has such a constant source of nitrogen, it most likely does not have to resorb as much nitrogen during the autumn, resulting in nitrogen deposits to the soil from leaf litter. These deposits can alter the nutrient composition in the soil and provide nutrients for other plants. This nutrient cycle component may be very

important for forests that are abundant with particular species that deposit large amounts of nitrogen.

Thus far I have analyzed the differences among the efficiency of photosystem II (which represents photosynthetic efficiency) in the different species. All species start the season with very low efficiency, which increases during the summer months. During the autumn most species return to very low efficiency, with values comparable to that of the beginning of the season. *Quercus rubra*, the dominant tree in Black Rock Forest, was the only species to end the growing season with significantly higher photosynthetic efficiency than at the beginning. The leaves of this species were the last to drop and did not exhibit any color change. The *Quercus rubra* trees started turning from green to brown in October, but kept the brown leaves attached for a few weeks. 🌲

—Adefunke Sonaïke is a senior at Columbia University majoring in environmental biology and political science.

Member Profile Cornwall Central School District

As the Forest is located in Cornwall, it is hardly surprising that the Cornwall Central School District is a Consortium member and makes extensive use of the Forest. Gail Duffy, the district's assistant superintendent for instruction, says that the Forest provides an outdoor classroom for the schools, where teachers can expand upon concepts they teach in the indoor classrooms.

All ages of students participate in activities in the Forest. At the elementary level, the students make seasonal observations. They record air and water temperatures and the plants and animals they see, write about the weather, and draw the ponds. They also measure oak trees, determine the viability of acorns, hang trail cameras to capture images of animals that visit piles of acorns, and collect the cameras to view the pictures in the spring. At the middle school level, the students do map and compass hikes and also science-related hikes to measure the pH of bodies of water. They also engage in cross-curricular activities,



combining scientific measurements with writing activities. At the high school level, both science and art classes have used the Forest. Dr. William Schuster, the Consortium's executive director, notes that "The Cornwall Schools have a really broad and impressive number of ways that they benefit from Consortium membership. Nearly every student in the District learns about science and nature in the Forest that is a part of their backyard. Cornwall parents

are also directly involved in some of the programs, resulting in a lot of fun family learning."

"Students are given a real life application of their learning by engaging in various activities in the Forest," says Gail Duffy. "They are exposed to research through nature, and this can help them make connections with their other learning." 🌲

Endowment Fund

(continued from page 1)

adjoining lands critical for the long term survival of wildlife. We know now that Black Rock Forest will be here forever — and Black Rock Forest Consortium's prospects for longevity are significantly enhanced.

Our hope is that the board-designated William T. Golden Endowment Fund, carefully invested, will produce income that will increase the predictability of operating revenues, providing a portion of the organization's operating income in future years. We will need to pursue our annual fundraising plans with the

same vigor, but the organization now has added financial security to continue providing research, education, conservation — and 23 trail-miles of recreation — well into the future.

To honor and thank past, present, and future planned giving donors, we have created the Black Rock Mountain Society, named after a beloved, readily accessible, and permanent feature of the Forest landscape, Black Rock Mountain. Should you like to learn more about this new program, please contact Emily Cunningham in the Black Rock Forest Consortium Development office at 845-534-4517. 🐾

Black Rock Mountain Society

Created in 2016

Anonymous (4)
Stephen & Smokey Duggan*
Ralph E. Hansmann*
Marion O. Naumburg*

* Deceased



Black Rock Mountain

Ralph E. Hansmann Profile of a Black Rock Mountain Society Member

Black Rock Forest Consortium recently received a generous \$10,000 bequest from the estate of Ralph Emil Hansmann. Mr. Hansmann was a steadfast supporter of the Consortium since its founding in 1989.

As a lieutenant in the U.S. Navy during World War II, Ralph Hansmann met and became friends with William T. Golden, the founder of Black Rock Forest Consortium. After the war, Mr. Hansmann joined a private investment management firm that Mr. Golden had created with his business associate Harold Linder. The business connection and friendship would last a lifetime.

After Black Rock Forest Consortium was established as a charitable organization, Mr. Hansmann began donating annually. "He liked that it was so close to Bill's heart," his son Bob Hansmann recalled. "He wasn't a woodsman, by any stretch," said Bob Hansmann. Instead, Ralph Hansmann attended the Consor-

tium's benefit luncheons in Manhattan, filling his table with friends and family to introduce them to the organization.

Ralph Hansmann was chair of the Investment Committee as a trustee of Hamilton College, his alma mater, where he oversaw a fivefold increase of the college's endowment. As trustee and treasurer of the Institute for Advanced Study at Princeton, Mr. Hansmann oversaw the IAS endowment's growth from \$30 million to \$175 million. He oversaw similar results as treasurer of the board of trustees for the New York Public Library.

Mr. Hansmann's service to organizations he cared about "was a lesson he learned from Harold Linder and Bill Golden," Bob Hansmann believes. Mr. Golden and Mr. Linder formed a private office "with the idea that they would devote their lives to public service," Bob Hansmann said. Ralph Hansmann did just that. In the case of Black Rock Forest Consortium, he is one of first donors to



have provided for the Consortium in his estate plans. We are honored to remember him as a member of the Black Rock Mountain Society. 🐾

RESEARCH STUDIES IN BLACK ROCK FOREST 2016

The Black Rock Forest Consortium is committed to encouraging collaboration among member institutions and also between researchers and students.

Nitrogen fixation and nutrient cycling experiments in Black Rock Forest.

Duncan Menge (Columbia University). *Contact: dm2972@columbia.edu*

Are garlic mustard effects on soil processes and microbial communities

reversible? Kristina Stinson (Harvard Forest) and Serita Frey (University of New Hampshire). *Contact: kstinson@harvard.edu*

Mercury concentrations and exposure levels in terrestrial foodwebs: Pathways for mercury bioaccumulation in insectivorous, songbird communities in New York State.

David Evers (Biodiversity Research Institute). *Contact: devers@bri.com*

Analysis of avian diversity in relation human activity in Black Rock Forest.

Terryanne Maenza-Gmelch and Marissa Wasmuth (Barnard College). *Contact: Terryanne Maenza-Gmelch (tm263@columbia.edu)*

Scaling of variability in populations, individuals, and ecosystems: Taylor's law and beyond.

Joel E. Cohen and Meng Xu (Rockefeller University), and William Schuster (Black Rock Forest Consortium). *Contact: Joel Cohen (cohen@rockefeller.edu)*

Physiological response to temperature across nine tree species in a northeastern temperate forest.

Angelica Patterson and Kevin Griffin (Lamont-Doherty Earth Observatory of Columbia University). *Contact: Kevin Griffin (griff@ldeo.columbia.edu)*

The future of oak forests.

William Schuster (Black Rock Forest Consortium), Kevin Griffin (Lamont-Doherty Earth Observatory of Columbia University), Shahid Naeem (Columbia University), Kathleen Weathers and Amanda Elliott Lindsey (Cary Institute for Ecosystem Studies) and Jerry Melillo (The Ecosystems Center, Marine Biological Laboratory). *Contact: William Schuster (wschuster@blackrockforest.org)*

Native plant performance along an urbanization gradient.

Kevin Griffin (Lamont-Doherty Earth Observatory of Columbia University), William Schuster (Black Rock Forest Consortium). *Contact: Kevin Griffin (griff@ldeo.columbia.edu)*

Loss of foundation tree species: Consequences for small mammal assemblages in forest ecosystems.

Katie Keck (USGS), Katie Terlizzi and William Schuster (Black Rock Forest Consortium). *Contact: Katie Keck (krh1985@gmail.com)*

Ecophysiological functions of urban and rural forest trees: Testing the "urban ecosystem convergence" hypothesis.

Nancy Falxa Sonti (US Forest Service). *Contact: nsonti.fs@gmail.com*

Historical and archeological studies on Whitehorse Mountain in Black Rock Forest.

Christopher Lindner (Bard College). *Contact: lindnerarch@gmail.com*

Improving estimates of biomass in Black Rock Forest trees and the impact of changing species composition.

Peter Bower and Emma Bartnick (Barnard College). *Contact: Peter Bower (pb119@columbia.edu)*

Species richness of cutaneous bacteria varies with urbanization: Implications of habitat conditions on defense mechanisms of *Plethodon cinereus*.

Soon il Higashino (Ossining High School) and J.D. Lewis (Fordham University). *Contact: Soon il Higashino (soonil.higashino@gmail.com)*

Learning from Nature at Benefit Luncheon

Learning from nature and the creative use of technology are the themes of this year's Black Rock Forest Consortium benefit luncheon, to be held on May 12 from 12 to 2 PM at the Metropolitan Club in New York City. A panel discussion moderated by Dr. Kevin Griffin, the Consortium's president and a professor of Earth and Environmental Science at Columbia University, will be the highlight.

The panelists are Sam Keany, Dr. John H. Long, Jr., Commissioner Liam Kavanaugh, and Peter Terezakis. Mr. Keany is Science Chair at The Browning School. He teaches a course entitled "Engineering from Nature" at the Consortium's Summer Science Camp and is fascinated by biomimicry. Dr. Long teaches at Vassar College; he is a vertebrate physiologist with expertise in biorobotics, and the author of *Darwin's Devices: What Evolving Robots Can Teach Us About the History of Life and the Future of Technology*. Mr. Kavanaugh is First Deputy Commissioner of the New York City Department of Parks and Recreation, which has created a Tree Stewardship app that lets users map and record their tree management activities for individual trees. Mr. Terezakis is the Artist in Residence at New York University's Tisch School of the Arts. He develops participatory environments that use technology to facilitate interaction and communal responses; they feature visual and performance artists and their audiences.

The luncheon is chaired by Samantha Kappagoda and Dr. David K. A. Mordecai; Catherine Morrison Golden is vice chair. A committee is in formation.

Tables and tickets are named after natural phenomena that inspire technology or the technology itself. Guests can purchase a Tadpole table for \$25,000, a Green Angel table for \$10,000, a Lotka-Volterra table for \$5000, a Participatory Environment ticket for \$1000, a UAV ticket for \$500, or a Wingwarper ticket for \$250.

"Our luncheon always provides a great opportunity to learn about important scientific issues, hear about new Consortium programs, and see old friends and new faces," notes Dr. William Schuster, the Forest's executive director. 🌲

Join Us! Become a Friend of Black Rock Forest.

☐ New Member ☐ Renewal

- | | |
|--|----------|
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Please make checks payable to the Black Rock Forest Consortium. Your contribution is tax-deductible; the Consortium is a 501(c)(3) organization. Thank you!

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Please visit us at www.blackrockforest.org and make a gift today. To make a gift of \$5000 or more, please contact the Development Office at 845-534-4517 ext.26

Forest News in Brief

New Treasurer: Bill Glaser. After serving as Treasurer for the Black Rock Forest Consortium for four and a half years, Geoffrey Dann has stepped down, with enthusiastic thanks from the board at its October meeting. William Glaser, a former Leadership Council member, agreed to take the Treasurer position and join the Consortium board. Bill retired from Credit Suisse as Director in the Interest Rate Products group after 25 years. After work at the Yale School of Forestry and Environmental Studies, he is exploring opportunities in the valuation and monetization of ecosystem services. He and his wife are currently restoring an historic property adjacent to the Forest. Bill received his BA from Yale University.

New Board Member: Dominic Cordisco. Dominic Cordisco has joined the Consortium board. He is a partner with the law firm of Drake Loeb PLLC, where he works with municipalities and private clients on projects involving land use, development, environmental law, and municipal law issues. He began his legal career as the Regional Attorney for Region Three

of the New York State Department of Environmental Conservation. Dominic is Chairman of the Board of Directors for the Orange County Partnership, a member and former Co-Chair of the Alliance for Balanced Growth, and Co-Chair of the New York State Bar Association - Environmental Law Section's Committee on Wetland Regulation. Dominic lives in Cornwall-on-Hudson with his wife and son; he serves as secretary to the Cornwall-on-Hudson Elementary School PTO.

Summer Science Camp Returns. The Summer Science Camp middle school session will run from July 11 to 15 and the high school session will run from July 18 to 22. Both sessions will be from 8:30 AM to 5:30 PM. The camp will operate as a day camp, but Consortium staff can provide information on local lodging options. Classes for this summer are Art of Scientific Observation, Biodiversity Blitz, Cold-Blooded Creatures, Engineering from Nature, Flying High Ornithology, Living Light Nature Photography, Making Nature: DIY Electronics, Nature Writing, and World of Insects. Instructors are

professionals working in their disciplines and range from graduate students to university professors. They come from Consortium institutions, including Barnard College, Columbia University, and the American Museum of Natural History, as well as partner institutions, including SUNY New Paltz, City University of New York, Storm King Art Center, and the Hudson Valley Writing Project. Registration is open at blackrockforest.org.

Popular Birding Workshop Returns!

The Consortium will once again sponsor Birding by Ear workshop on Saturday June 4. Dr. Terryanne Maenza-Gmelch, a Barnard professor, will lead participants on a two-hour, easy-to-moderate walk in the Forest through many different habitats to observe which birds occur in multiple locations in the Forest and which are habitat-specific. The Consortium will provide binoculars. The walk starts at 8:30 AM from the upper parking lot and is limited to 15 adults and students 12 and older. The cost is \$10 per participant. RSVP to Emily Cunningham in the Forest office. 🐦

Forest News in Brief
