

# SHAWANGUNK WATCH

Spring/Summer 2012 Preserving Open Space in the Shawangunks Volume 17 #1

Friends of the Shawangunks & The Shawangunk Conservancy

## Where do the Northern Shawangunks End?

by Dany Davis

I recently moved to a lovely spot just south of Rosendale, adjacent to the Wallkill Valley Rail Trail at the northern margins of the Northern Shawangunk Mountains (NSM). While I was sad to leave the Accord-Kerhonkson section of the NSM after 20 plus years of exploration, I am very pleased to discover that I moved to a part of the ridge that is full of geological wonder. This is where the northeast trending NSM are abruptly truncated by Rondout Creek as it flows through the village of Rosendale.

On the south side of the creek, the folded and faulted Late Silurian Shawangunk Formation seemingly “dives” beneath the creek bed and appears to end there as the ridge on the north side is distinctly different in composition. Joppenburgh Mountain is composed of layers of Silurian and Devonian shale, sandstone, limestone and dolostone. The rocks that form these ridges are a few hundred feet apart yet separated by a few million years. (See the text box at the end of this article for a brief description of the layered sequence of geologic formations in this region and how they fit into the regional geology.)

Several months ago, Annie O’Neill asked me to write a follow up on my previous column on the geology of the NSM, this time focusing on where the NSM ends. I said yes, and promptly did nothing. Still, on my walks into Rosendale along the rail trail and exploring the new areas of the Rosendale water works section of Mohonk Preserve lands, I wondered why this part of the ridge seemed so different than the more gently folded and faulted terrain of my former home. I knew I was in a geographic boundary zone for the ridge but wasn’t sure where to say the NSM ended. Are the northern boundaries defined by geomorphic (landscape) criteria or by geologic content and structure? In early April I hiked up Joppenburgh and looked across Rondout Creek toward my Shawangunk Ridge home and decided it was time to write this article.

A very good definition of the boundaries of the NSM can be found in many publications, but I like the one provided in a report titled “Hydrogeology of the Northern Shawangunk Mountains” written in 1990 by four geologists: Jonathan Caine, Don Coates, Nicolas Timofeef, and a recent geology graduate at the time, Danny Davis. The bulk of the work and writing were completed by Jonathan Caine. I am going to repeat the description as closely as I can:

“The study area chosen for this hydrogeological analysis has natural boundaries that are defined by the local geology and geomorphology. This area of 62.5 sq mi. is a geological island with Ordovician shales and sandstones to the east and south, and Siluro-Devonian carbonate (limestone) and clastic rocks (sandstone and shale) to the west and north. To the south, the Shawangunk Formation continues into New Jersey in the Kittatinny Mountains and then as far south as Georgia as a ridge of resistant quartzite conglomerate and sandstone. This island effect not only makes the Northern Shawangunk Mountains a unique ecological environment, it also forms an excellent hydrogeologic boundary. These conditions provide a distinctive geological, hydrological, and ecological entity unparalleled in the region. The northern boundary of the study area is the northern terminus of the Shawangunk Formation as it makes its final plunge below the surface of the earth. The northeastern boundary is formed by a cliff line that trends in northeasterly direction throughout most of the study area. The southern boundary is formed by another distinct cliff line that extends in a semicircle to the northwest and forms the northeastern side of the Verkeerder Kill Valley. The northwestern boundary parallels the

Rondout Creek, which flows along the geological contact of the Shawangunk Formation and the Siluro-Devonian rocks to the northwest. The bounding loop of the study area is then completed in the north where the Rondout Creek intersects the terminus of the Shawangunk Formation.”

This is close to how I would have described it had I sat right down and written that article when Annie requested it. I could end the article there and add Dr. Caine as an author. Yet, I walked the area, looked at a topographic map of the region and felt that the idea merited a bit more research. So, I checked in with some geologists who could weigh in on this discussion. I reached out to my friends Dr. Chuck Ver Straeten of the New York State Museum/Geological Survey and an expert in Devonian geology; Jonathan Caine, Research Geologist with the USGS

in Denver, Colorado; and Dr. Fred Vollmer, chair of the Geology Department at SUNY New Paltz. Chuck sent the request-for-opinion on to Dr. Kurt Burmeister, who did detailed geologic mapping through the Rosendale area back earlier in the 2000s, and currently, teaches at the University of the Pacific in California. I had assembled an e-panel of Shawangunk geology experts to help address this question: where do the northern Shawangunks end?

For the last decade I’ve work as a geomorphologist, specializing in streams. Geomorphology is the study of the Earth’s landscape forms and the processes that produce those forms. As a geomorphologist, I examine the landscape in the field, through maps, and with 3-D terrain models. Looking at the northeastern trend of the NSM through a geomorphologist’s eye it appears to extend beyond the Rondout Creek



Dany Davis examining an outcrop of Shawangunk Conglomerate in Rosendale where the rock seems to disappear into Rondout Creek. Photo courtesy, Stefan Lisowski.

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## There IS Life after Death!

by John Thompson

Forests today are greatly influenced by events that happened centuries ago. Much of the forests in the northern Shawangunks were cut over multiple times in the mid-to-late nineteenth century to produce lumber, tanbark, charcoal, and hoop poles. As this forest has grown and matured we are seeing more trees die due to a variety of reasons. Over time, trees succumb to disease, insect infestations, or drought. Trees are damaged and killed by extreme weather events such as lightning, damaging winds, or winter snow and ice. Paul Huth observed that thousands of Chestnut Oak trees died after nearly 100% Gypsy Moth defoliation around the Mohonk Preserve during the dry growing seasons of 1987 and 1988. Many standing dead oak trees and downed oak logs remain in our forests as memorials to this event. Below Undercliff Road the windthrown trees remain from the November 16, 2002 ice storm. Hurricane Irene blew down and snapped off many of the trees on the shaly east-facing shoulder of the Shawangunks including at the Mohonk Preserve's Visitors Center. When you visit the Visitors Center, you can see the biological legacy of this natural event of August 28, 2011 as the tangle of oak trunks and branches with upturned root balls and pits where hundreds of trees were damaged. Though these forest disturbances look devastating to humans, some forest changes increase diversity of forest structure and the plants and animals that can live there.

Generally, people understand that live trees have value to wildlife. You may remember Joyce Kilmer's poem, "Trees" ("I think that I shall never see/A poem lovely as a tree"), illustrating the beauty of trees and how the "hair" (crown) of the tree provides nesting habitats for robins. Even in our backyards we see a whole variety of birds in our trees, singing, feeding on insects and nesting. Some people may look at our forests as being "messy," with the live trees interspersed by dead snags and downed woody debris, but wildlife sees these so-called "messy" forests as the best habitat. When a tree dies, it is only partly finished in offering benefits to the forest. In fact most of the dead tree's contributions to wildlife may lie ahead, as it gradually deteriorates.

A dead tree may remain upright for years, offering opportunities for insect eaters and cavity nesters. Northern Flicker, Yellow-bellied Sapsucker, and both Pileated and Hairy Woodpeckers are keystone species that excavate cavities for their own nesting and roosting. Many animals nest in these chambers outright or reshape them to their own liking and use. Northern Saw-whet Owls, Black-capped Chickadees, Great Crested Flycatchers, Red-breasted Nuthatches, and Eastern Bluebirds will use a woodpecker hole to nest in and raise their young. Southern Flying Squirrels, Red Squirrels and mice will raise their young in the protection of tree cavities. Tree cavities are critical to about 25 bird and mammal species (cavity-dependent species) that need them to fulfill their habitat requirements. Besides the inside of the snag, the outside also provides protection. The diminutive Brown Creeper makes its nest between the loose bark and trunk of a large dead tree. Bats need to roost under loose bark of large snags (or large Shagbark Hickories). Predatory birds such as Peregrine Falcons and Broad-winged Hawks will hunt from snags. Flycatchers sally out from snags to hawk insects.

When a tree is blown over, or uprooted from being crushed down from ice and snow, the resulting forest canopy gap allows light to reach the forest floor, and the uprooted exposed root ball offers an opportunity for other plants to grow, adding to the diversity of structure and life in

the forest. Early successional plants, such as Red-berried Elder or wildflowers, will colonize the exposed mineral soil on top of these mounds, out of the reach of ravenous deer. Eventually these masses of roots and soil are eroded into mounds and the depressions will partially fill in, but remain. This is often called "pit and mound" topography. An uneven forest floor with moss- and lichen-covered logs and diverse wildflowers and plants on the forest floor are a few of the features that you find in an old growth forest—features that many of our native species prefer.

When you have large blowdown events (e.g., from Hurricane Irene) the resulting mass of logs, roots, and soil are sought out by a great variety of species to raise their young. Winter Wren and Louisiana Water-thrush need these exposed roots and fallen logs to build their nests in. A female Black Bear will den under downed logs to hibernate and give birth to her cubs.



photo by Ethan Pierce

Downed logs return nutrients to enrich the soil and foster new growth. Oak forests store large amounts of carbon because their trunks are rot-resistant and break down very slowly. Eventually insects, fungi, and plants will invade forest logs. Large logs are a unique and a critical component to many forests. An uneven forest floor with many downed logs covered by mosses and lichens offers great habitat. Under large logs you will find everything from earthworms and slugs to salamanders, snakes, and chipmunks. Rodents use logs as runways. Shrewd predators, such as snakes, have figured this out, lying motionless next to a log waiting for lunch to come running along.

To a large degree, forests are adapted to patchy disturbances. And these disturbances add to the health of the forest overall. Diseases and pests that effect large areas of forests, such as the Hemlock Woolly Adelgid, do provide some benefits to other species, but may prove detrimental to the overall biological diversity of the Shawangunks in the long-term. Throughout ravines of the Shawangunks you can observe the legacy of the Hemlock Woolly Adelgid infestation that began in 1991. Many Eastern Hemlock trees have died and now stand as red phantoms. The trunks appear red because Hemlock Borers attacked the dying trees. To get to the borers, woodpeckers chipped away the outer bark, leaving the red inner bark of the tree exposed. If Hemlocks disappear from our region, some of the species that depend on this habitat may follow suit.

The extreme weather of 2011, specifically tropical storms and early autumn snowfall, damaged many trees throughout the region. Many landowners are "cleaning out" the downed logs from their woodlots to remove the dead wood that's "going to waste." Forests have value far beyond aesthetics. They are important for moisture retention, nutrient cycling and wildlife habitat. Lack of ecological understanding in extensive deadwood removal from forests will impact wildlife habitat now and for decades into the future, because in death trees continue to foster life.

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*John Thompson is the Mohonk Preserve's new Director of Conservation Science at the Daniel Smiley Research Center of the Mohonk Preserve.*

## CONGRATULATIONS TO OSI

# OSI ACQUISITION PROTECTS SCENIC WATERFALL AND TRAILS ON WESTERN SIDE OF THE SHAWANGUNKS

## 75-foot Waterfall is part of 233-acre property that will be added to Minnewaska State Park Preserve

On April 10, 2012, Open Space Institute announced the acquisition of a stunning 233-acre parcel that protects one of the last major water-

falls in private ownership in the Shawangunks, known locally as Little Stony Kill Falls or Nonkanawha Falls.

This property also provides land for new trailheads that will service thousands of acres at the Minnewaska State Park Preserve.

The parcel was acquired by the Open Space Conservancy, OSI's land acquisition affiliate, from the Ukrainian National Association (UNA), a Ukrainian fraternal organization which since 1953 has operated a center known as Soyuzivka Heritage Center on approximately 130 acres of land it is retaining in the

town of Kerhonkson, Ulster County.

The center caters to the rich ethnic traditions and unique customs of the Ukrainian people. For almost 60 years guests have enjoyed the scenic lands just acquired by OSI, which include a rushing mountain stream known as the Little Stony Kill, the 75-foot-tall Nonkanawha Falls, hiking trails and extensive views of the Catskills and Shawangunk Mountains.

"The transfer of these scenic lands to the Open Space Institute neatly fulfills the common goals of two very diverse organizations," said Stefan Kaczaraj, president of UNA. "From Open Space's point of view, this environmentally sensitive tract will be preserved in perpetuity for the benefit of the general public and passive recreational opportunities will be expanded.

"At the same time, Soyuzivka will continue its 60-year legacy of preserving Ukrainian heritage and customs on its remaining

130-plus acres and our guests will continue to enjoy the hiking trails and these stunning lands as they did in the past."

Over the past quarter-century OSI has acquired and protected over 27,000 acres of land on and around the Shawangunk Ridge, stretching from the town of Rosendale, in Ulster County, south to Port Jervis and the New Jersey border.

The lands acquired from UNA will be conveyed to the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) as an addition to the Minnewaska State Park Preserve. OSI and its



Hiking trails at UNA were blazed with this logo

partners have added over 12,000 acres to Minnewaska over the past two decades, making it—at more than 22,000 acres of forested lands and lakes—the largest park preserve in New York State.

"The Open Space Institute has been a wonderful partner for years," said OPRHP Commissioner Rose Harvey. "The lands that OSI has added to Minnewaska over the years have greatly enhanced visitors' experience. The acquisition of the spectacular UNA property adds another chapter to the partnership."

The newly acquired lands protect some of the most scenic and remote portions of the Shawangunk Ridge. OSI has accumulated thousands of acres of wilderness lands on the western side of the ridge, including lands in the remote Witch's Hole and Mine Hole Hollow.

The lands also include the Little Stony Kill stream, which meanders through miles of bedrock and pitch pines.

"Today's acquisition protects a significant swath of the western escarpment of the Shawangunk Ridge," said Kim Elliman, OSI's president and CEO. "It furthers OSI's long-term commitment to the preservation of the Shawangunk Ridge and the trails, carriage roads, streams, lakes and stunning vistas that make this one of New York's most cherished places."

Lands previously acquired by OSI in the vicinity of the UNA lands include a 1,366-acre tract acquired from another Ukrainian national association, the Shevchenko Scientific Society, and other lands owned by local landowners. (From an OSI press release)

## BOARD OF DIRECTOR CHANGES

Steve MacDonald has resigned from the board after serving for nine years, eight of those as treasurer—the board position with the heaviest workload. As treasurer he not only did the usual things (maintain the books, process the contributions, pay the bills, and produce the financial statements), but also maintained the members database, a big job in itself. Steve has graciously offered to continue processing contributions and maintaining the database as a volunteer (as long as he doesn't have to attend any meetings!)—he finds he has enough meetings with his position as trustee for the Stone Ridge Library.

Joining the board is long-time Friends member Jean Lerner, who recently retired from NASA's Goddard Institute for Space Studies where she was programming a global climate model used in the study of global warming. Jean has been a member since back in the days of the battle over the proposed development of Minnewaska. She now has become a full-time resident of the area and is looking forward to helping Friends in its work in the Shawangunks.

## NORTHERN PRESERVE EXPANDED

The Mohonk Preserve has added another 142.5 acres in the Shawangunks to the northern Preserve. This land was purchased from Open Space Institute in late December.

These lands were originally purchased by OSI in three separate transactions. OSI acquired the first parcel in May 2010; the second in December 2010; and the third in September 2011. All three parcels were sold to Mohonk Preserve for \$348,371. The sale price was about half of what OSI paid for the lands.

The acquisition extends permanent protection to the northernmost section of the Shawangunks, and links the northern Preserve to the Wallkill Valley Rail Trail and prime bouldering sites.

The properties are historically and ecologically significant. The area known locally as the "Giant's Ledges" has low cliffs and extensive boulders. The property called the "Waterworks" is named for its proximity to Rosendale's reservoir. Some of these lands once played an essential role in Rosendale's cement industry.

The entire northern Preserve includes about 2,000 acres in the towns of Rosendale, Marbletown and New Paltz. Mohonk Preserve is currently developing a management plan for this property.

boundary. The lower elevation ridges that form the eastern boundary of the Binnewater Lakes trend northeasterly much like the NSM. Just looking at the terrain, it appears that the NSM ends north of Rondout Creek as a series of small ridges. There is a clear distinction in landform on either side of the creek but enough similarity to connect them.

The NSM is not just determined by the terrain. The unique Shawangunk Formation, with its distinctive quartz conglomerate and sandstone layers forms the resistant rock that dominates the NSM landscape. The last obvious presence of the Shawangunk rock is along the Rondout Creek boundary in Rosendale. The ridges that crenulate the landscape north of the creek are composed of sandstone, shale, and carbonate rocks, which were mined for their use in the production of cement. However, the cement mines observable along the rail trail south of the creek reveals the presence of these Silurian carbonate rocks in the area recognized as part of the NSM. Does the same hold for the north side of the creek—can we find the Shawangunk Formation rocks hiding among the northern carbonate rocks?

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***“The oldest rocks in the sequence of rock layers exposed near Rosendale are Ordovician sandstone and shale of the Martinsburg Formation. Several Late Silurian units, including the Shawangunk Conglomerate, High Falls Shale, and Binnewater Sandstone, overlie these Ordovician strata. These Silurian strata are overlain by several units of Silurian to Devonian limestone and dolostone, including the Rondout Formation made famous for mining activities associated with natural cement production. This entire sequence of strata was later folded and cut by faults during a sequence of collisions between North America and other landmasses that ultimately pushed up the Appalachian Mountains.” Kurt Burmeister***

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This is where the rock doctors who have examined this area in academic detail come in and most certainly complicate my answers to these questions. Chuck Ver Straeten has made a career deciphering the big picture history of this part of the planet during the Devonian. Chuck informed me of how the NSM fit into a much larger regional and continental sequence and distribution of rocks that set a geographic context for the Shawangunks. He implies that the Upper Silurian and Lower Devonian rocks that are part of the folded and thrust faulted Binnewater ridges could be an extension of the similarly deformed Shawangunk rocks to the south. Fred Vollmer reminded me of two key contributions to answering this question. The late Dr. Russell Waines identified what are probably the two northernmost exposures of the Shawangunk Formation rock at the Rosendale Landfill and along Route 32 near Eddyville. (I went to one when I was one of his students in 1989.) Fred’s graduate student, Todd Leeds, in his 1989 M.A. thesis “Structural Geology of the Northern Termination of the Shawangunk Mountains, Ulster County, New York,” placed the northern termination of his study area at the Rondout Creek based on geomorphology and the northernmost end of well-exposed Shawangunk conglomerate (“From a high point at Bonticou Craig the ridge descends in elevation to its end at Rondout Creek.”). Kurt

Burmeister, who seems to know Rosendale geology quite intimately after mapping and interpreting the geology as part of his doctoral dissertation, provides more detail on the missing link that can extend the NSM north into the Binnewater region. Bearing in mind that Kurt has an entire dissertation and publications on this, I offer the brief synopsis of his contribution to the question at hand. (A copy of his dissertation with geologic map is available at the Rosendale library.)

According to Kurt, the northernmost extent of the Shawangunk Formation probably follows a line drawn between the Rosendale landfill/transfer station and Eddyville. One of the northernmost exposures of what he would call a true bed of Shawangunk Conglomerate is a 20-30 cm. thick layer in the north wall of the landfill. Kurt also observes that the dramatic thinning of the Shawangunk Conglomerate from south to north (greater than 100 m. thick south of Rosendale, thinning to 6-10 m. at Rosendale, and disappearing north of the thin exposure at the landfill) is associated with a rapid decrease in the wavelengths of folds and spacing between thrust faults where one package of rock is pushed over another. The net result of the thinning and eventual disappearance of the Shawangunk Formation is a northern narrowing of the deformed zone of rocks that define the NSM. Kurt suggests that this narrowing is due in significant part to the presence of the mechanically-rigid Shawangunk Formation; as this rock thins, the regional rock becomes more deformed in a narrower band.

The connected geologic composition and structural conditions on either side of Rondout Creek allow me to consider the following supposition: it is not unreasonable to extend the NSM into the Binnewater region. This bold statement is challenged by many well-informed counter opinions. As I wrote this article I was surprised by my willingness to consider this hypothesis. I started with a firm opinion that the Gunks ended at Rondout Creek in Rosendale. Clearly, the lines of ridge-like mountains on either side of the creek are distinctly different in many respects, largely in composition; yet there is enough in the geologic and geomorphic evidence to offer this interpretation. So, Joppenburgh Mountain, this geologist might welcome you to the Gunks. There is however, more to consider in putting out the welcome mat. Since I engaged a significant group of well-informed geologists I was provided a great discussion on what could define a mountain range.

Fred Vollmer, whose classes I also took 23 years ago, offered a response to this idea that nicely frames a sound answer to the question. He declares “geologists define mountains as orogenic, or deformational, features, not by lithology, and not as topographic features... From this geologic perspective, the northernmost extent of the Shawangunk conglomerate as a thin unit of quartz pebbles is less significant than where it loses its mechanical strength. The fold and thrust belt, of which the Shawangunk Mountains are a part, continues northward to Kingston, Catskill and farther. What distinguishes the Shawangunk Mountains from segments to the north is that the deformation is controlled by the thick, strong quartz pebble conglomerate layer that determines fold wavelengths and thrust fault characteristics”.

“To the north, while it may be true that the conglomerate is structurally significant at depth, I have walked from Joppenburgh Mountain north to the Fifth Lake area (where I have taught field mapping for decades), and see no evidence that conglomerate retains a controlling influence on the deformation.”

That is a very well-informed opinion that brings me back to the validity of the first description I offered, lifted right from the “Hydrogeology of the Northern Shawangunk Mountains,” recognizing Rondout Creek as a definitive boundary for the termination of the Northern Shawangunk Mountains. So, maybe a welcome to Joppenburgh Mountain and neighboring ridges to the north into the realm of the Northern Shawangunk Mountains is not merited as much as the recognition that these ridges are linked by the diminishing presence of the Shawangunk Formation. Rondout Creek is a sculptor of the NSM at the northern fringe of the strong rock’s influence in the beautiful creation of this landscape. 🏞️

Dany Davis is a geologist currently specializing in Catskill stream geology for NYCDEP. He is fortunate enough to live and have raised a family on the ridge and work in the mountains to the north. He wrote this article with extensive contributions and helpful edits from Kurt Burmeister, Jonathan Caine, Chuck Ver Straeten, Fred Vollmer, and Amie Worley. All inadequacies in content, factual correctness, outrageous hypotheses and writing belong to Dany.

**Additional Contributors:**

Dr. Frederick W. Vollmer is Associate Professor and Chair of Geology at SUNY New Paltz, where he has taught geology since 1984. He specializes in structural geology. He has a B.S. in geology from University of California, Davis, a M.S. from SUNY Albany and a Ph.D in Geology from the University of Minnesota. He is honored to have been erstwhile professor to Dany, Jonathan and Chuck and a sometime collaborator with Kurt.

Dr. Chuck Ver Straeten is a geologist and Curator of Sedimentary Geology at the New York State Museum/Geological Survey in Albany, NY. Much of his research focuses on various topics in the Devonian rocks of New York, and their relationships to regional to global Devonian history; and on ancient volcanic ash deposits. He is also involved in geologic bedrock mapping, formal and informal Earth Science education, and exhibits at the State Museum.

Dr. Kurtis Burmeister is a structural geologist with broad interests in convergent tectonics and has ongoing research programs in the northern Appalachian fold-thrust belt, the Nankai Trough of southeastern Japan, and the Mount Tallac region of the Sierra Nevada. Kurt is an Associate Professor at the University of the Pacific, an Adjunct Associate Professor at the University of Illinois, and the Co-Director of the Wasatch-Uinta Summer Field Program. Kurt earned a Ph.D. in Structural Geology at the University of Illinois (2005). He earned a MA in Geology and Vertebrate Paleontology (2000) and a BA in Biological Sciences (1996) from the University of California at Santa Barbara.

Jonathan Saul Caine is a research geologist with the U.S. Geological Survey. His work is focused on characterizations of fault zones, fracture networks, and fluid flow in the Earth's upper crust. He received his B.A. and M.A. in geology from SUNY New Paltz and his Ph.D. in geology from the University of Utah with a concentration in structural geology and hydrogeology. His research has been in the northeastern Appalachians, the Basin and Range, east Greenland, the southern Rocky Mountains and the Rio Grande rift.

Amie Worley has worked for over a decade as a wildlife biologist and environmental educator in many areas of the Hudson Valley. She has a background in monitoring many creatures that wriggle through the sediments and waters around us, comparing their survival to the water and soil quality they inhabit.



photo by David Johnson

# Cliff Notes

Peregrine falcon (pefa) activity has been monitored since March by Mohonk Preserve volunteers, led by Tom Sarro, at three sites. While the establishment of eyries at Millbrook and Bonticou remains to be confirmed, pefa activity at the Trapps strongly suggests that breeding has taken place, and the observation of chicks is expected by late May.

On Monday, May 7, Joe Bridges (wildlife biologist, longtime climber, and environmental planner) and Barbara Hart did a survey of the cliffs from the three pefa monitoring sites. The sky was overcast; a light intermittent breeze was blowing; the air temperature was 64 degrees. Joe posted the following observations to the peregrine falcon listserve:

**TRAPPS: 1245 - 1330 HRS**

At 1308 hrs, the male pefa flew south past the eyrie. At 1317 hrs, he was perched 15 ft down and right @ 4 o'clock from the rectangular block at the top of the MG buttress. He was still in this location when we left at 1330 hrs. We saw no pefa activity at the eyrie.

**MILLBROOK: 1351 - 1430 HRS**

At 1357 hrs, a male pefa was seen on the curved pine for a few minutes. At 1402 hrs, he was perched on the tip of the pine above the 2010 eyrie. At 1415 hrs, he flew south, harassed a raven, then flew onto the 2010 eyrie ledge and stood for about 45 seconds near the rectangular "exit hole" at the right side of the block behind which the 2010 eyrie was located. He appeared to look briefly into the rectangular hole before flying to the curved pine at 1417 hrs. He was still perched in the curved pine when we left at 1430 hrs. We did not see the female pefa during the period of observation, but suspect she may have been behind the block of the 2010 eyrie.

**BONTICOU - EAST: 1457 - 1600 HRS**

At 1457 hrs, the male pefa was perched on the dead white pine "long branch" located about 50 feet directly above the "shrubby ledge" (the shrub-covered ledge with a white pine at its right end, located about 50 feet down and right @ 5 o'clock from the pinnacle summit). At 1515 hrs, he flew northeast out over the valley. At 1519 hrs, the male and female pefa were flying about 75 feet above and out from the shrubby ledge and executed a prey exchange. At 1520 hrs, both pefas were perched on the long branch, where the female plucked and fed on a medium-sized grayish bird with white-marked tail feathers (rock dove?). At 1530 hrs, he flew to the northeast, she continued feeding until about 1540 hrs, then flew off to the northeast. At 1545 hrs, both pefas returned to the long branch. Within one minute, she flew down onto the shrubby ledge, moved a short distance back from the edge, and appeared to nearly disappear (only her head was visible). Shortly after she left the long branch, he flew out over the valley, briefly harassed a black vulture in two dives, then flew back to the long branch at 1556 hrs. He was still perched on the long branch when we left at 1600 hrs.

Behavior of the Millbrook and the Bonticou pefa pair continue to puzzle. Both pairs have been observed copulating but appear to be making later than anticipated efforts at eyrie selection and egg laying.

## FOS GIVES \$2,500

FRIENDS HAS CONTRIBUTED \$2,500 to the Pew Charitable Trust as part of an effort to raise \$500,000 to restore the Hamilton Point carriage road in Minnewaska State Park Preserve. The contribution was in response to an appeal for an additional \$80,000 to trigger a grant by the Trust to New York's Office of Parks, Recreation and Historical Preservation for the restoration.



# Who Needs Winter?

by Shanán Smiley



The weather and species data kept at the Mohonk Preserve's Daniel Smiley Research Center is unique to North America. Very few long-term data sets exist where the breadth and depth of weather and the species data of the same area are kept in a cohesive collection. This collection of data allows us to look back to see what has changed over time at Mohonk. We have previously looked primarily at summer temperatures and annual precipitation. We've also reported on how the vegetation and bird arrivals have changed over time.

This year we have focused on the changes in winter and spring. The duration of snow on the ground, and the average depth of snow were analyzed for any trends. The duration of ice on Mohonk Lake was also analyzed. To investigate how species may be responding to these weather and climate changes, poikilothermic (cold-blooded) animals like amphibians and insect data were analyzed. Phenology (timing of seasonal events) were statistically analyzed to see if these species may be emerging earlier. Here's what we found:

## SNOW

- ◆ 13 of the last 23 years (57%) recorded below average snow depths
- ◆ There were four years void of snow until January, which all occurred in the last 25 years.
- ◆ 61% of the last 23 years experienced below average duration of snow on the ground.

Monitoring is needed to accurately assess the resulting local ecological effects due to decreased depth and duration of snow on the ground. However, recent research conducted by Dr. Peter Groffman (Cary Institute for Ecosystem Studies) in forests of the northeast has shown that without the insulating layer of snow, soil freezes, which can therefore cause root and microbial mortality, as well as cause accelerated nutrient loss and soil acidification. More specifically, soil freezing:

- ◆ Doubles overwinter root mortality.
- ◆ Increases nitrate leaching which causes a loss of nutrients (especially seen in maples), and decreases water quality.
- ◆ Increases phosphorus leaching (a huge problem for lakes).
- ◆ Increases N<sub>2</sub>O flux, decreases air quality.
- ◆ Decreases CH<sub>4</sub> (methane) uptake, further increasing air quality problems.

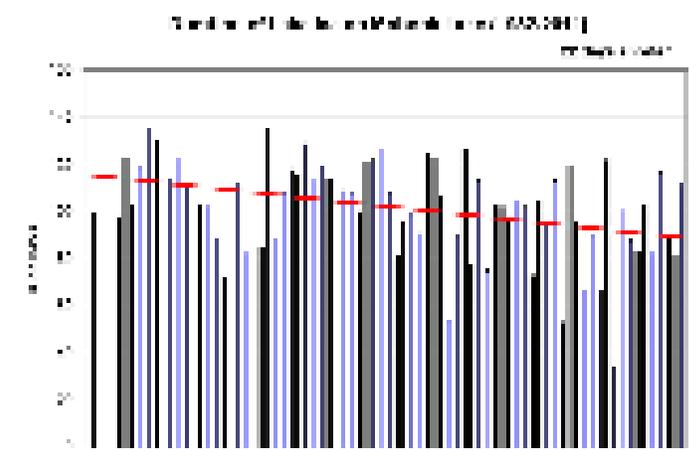
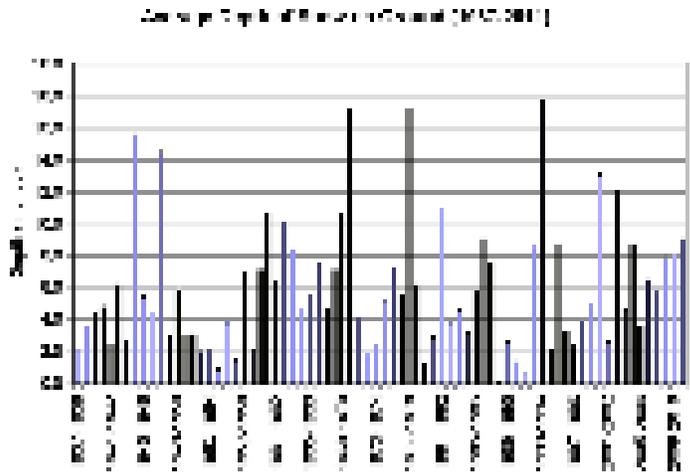
## ICE

- ◆ Duration of lake ice is 22 days shorter on Mohonk Lake.
- ◆ Date of lake freezing (ice over) is 16 days later.
- ◆ Sixty percent of the years with below average lake ice duration have occurred since 1979.

## PHENOLOGY

- ◆ The earliest emerging amphibians are responding the most dramatically, with Jefferson salamanders emerging 25 days earlier, and wood frogs emerging 14 days earlier.
- ◆ Black flies are emerging 11 days earlier.
- ◆ Gypsy moth adult males are emerging 17 days earlier, while the emergence of larvae (caterpillars) has not changed. This suggests males may be pupating (metamorphosis from caterpillars to adults) at an accelerated rate.

*Shanan Smiley is conservation biologist/collections manager at the Daniel Smiley Research Center of the Mohonk Preserve. She is getting her masters in environmental studies with a concentration in conservation biology from Green Mountain College.*



## Shawangunk Lodge in the Southern Shawangunks

There used to be a four-story hotel on a 350-acre site on top of the Shawangunk Ridge just north of where it is crossed by Route 17. Shawangunk Lodge eventually closed, the buildings were abandoned, and in time became such a hazard that the Bloomingburg Fire Company burned them down in 1989.

Now there is a proposal to construct on this site a gigantic structure with a basement level, a conference level of 410,000 square feet (two conference rooms, food and beverage and retail), a mezzanine level (two banquet halls, administration, and entertainment), a spa/pool level, and above that a hotel. In addition, there is an eight-level parking facility to hold 3,600 vehicles, as well as surface parking for an additional 500 cars.

In February, this venture's representative, determined to gauge municipal support, informally introduced a cursory proposition before Mamakating's town and planning boards. Both boards seemed receptive to the latest scheme.

The parcel's owner intends to obtain all necessary permits so that the site is "shovel ready" when the economy improves and if legalized gambling is approved.

This enterprise mimics one promoted in 2003, which encompassed a 300,000 square foot sports/entertainment complex, an adjoining 250-room hotel, parking for almost 5,000 vehicles, some in an elevated structure, and maximum daily water consumption of 600,000 gallons. That undertaking halted after the Department of Environmental Conservation (DEC) was named lead agency for the requisite environmental review.

In the early 1970s the first proposal for the site called for the construction of 650 condominiums. The DEC was the lead agency that time too. It conducted countless hearings, ultimately rejecting the proposal due to limited ground water. As you may recall, it was the lack of water that eventually killed the 1970s proposal by Marriott for a hotel/condominium development at Minnewaska.

Now, as in 2003 and the 1970s, environmental organizations are gathering to battle this major development on this sensitive ridge, whose outstanding biodiversity and need for protection are underscored in State and County open space plans and Mamakating's Master Plan. Furthermore, this privately-owned, ridge-top acreage is critical to forming a continuous, publicly accessible, ridge-top corridor from Route 17 to Route 52 (Cragmoor), which was New York State's vision when expending millions to create Wurtsboro Ridge State Forest at Shawangunk Lodge's northern border, along with Roosa Gap and Shawangunk State Forests.

It is expected that the Basha Kill Area Association, the most local environmental group, will lead the fight. And, as it has in the past, Friends will most likely provide financial support.

It is understandable why there has been so much interest in developing something at this site: it is on top of the ridge and adjacent to a major road that will one day become Interstate 86. One would think, however, that the topography of this location would preclude any such action. At present Exit 114 on Route 17 is exit-only going westbound. While it may be possible to construct a westbound entrance as well, the south side of the road is a large rock outcropping that would make any eastbound exit/entrance very expensive to create and is thus not in the plans for Interstate 86. 🚧

## Driveway to the Millbrook Cliff?

Friends has retained the services of an engineer and a lawyer to assist us in challenging a proposal from a landowner to construct a driveway from North Mountain Road to an area just below Millbrook. The environmental impacts are of great concern to us, as is the visual impact that has been described as "horrendous and a travesty" by people who have looked at the plan. There are many sections wider than Main Street, New Paltz.

The engineer will be examining the plans for a 2,800-foot driveway (that includes the construction of a 30-foot bridge) to ensure that they are compatible with the Town of Gardiner zoning regulations. The property owners have secured variances from the Zoning Board of Appeals because the length exceeds the 1,200-foot limit in the code, and because it will have to be built on terrain steeper than the code allows.

The lawyer will work with us to be sure the Planning Board properly reviews the plans pursuant to the owners' request for a Special Use Permit. The property is in the SP3 zone, a special zone created by the town several years ago to protect the Shawangunk Ridge. In this zone property owners must prepare a rigorous Conservation Analysis and present plans for storm water management and erosion and sediment control. The steepness of the terrain to be crossed by the driveway presents special problems for controlling water runoff and the accompanying erosion.

This case will test the willingness of the Planning Board to provide the environmental protection intended by the establishment of the SP3 zone.

## What's in the Future for Joppenbergh Mountain?

The Wallkill Valley Land Trust (WVLT), managers of the Joppenbergh Mountain property, has formed a citizen's advisory group to begin the process of developing a management plan for Joppenbergh. Composition of the group reflects a broad range of interests: local businesses, various user groups, community groups and Rosendale Fire and Police Departments. Friends, though its sister organization, The Shawangunk Conservancy, has made a major commitment to provide funding for Joppenbergh, so it is very concerned about how the property will be used and is participating in this planning process.

It has been determined that a plan for the property must provide for protection of the conservation values of the property, support a variety of uses but prohibit motorized vehicles, provide for its maintenance and be financially feasible.

A first step has been to identify possible uses, and here the list was thrown open to just about anything. Even at this stage it is recognized that some of the uses suggested clearly are not going to make the final cut: rock climbing (the rock is too unstable) and campfires, among others.

The property is full of potential hazards so there initially was concern about liability, but it appears that WVLT's liability may be limited under New York State law because it will not be charging a fee for use of the property. In addition to the unstable cliff faces and crevices, there are a multitude of man-made hazards: old buildings and mines, an antenna structure on the top of the mountain, and a lot of debris dumped on the property. The debris can be carted away, but what is to be done with these structures? Some buildings may be useful for storage or torn down, but what about the ski jump and the structure used to store explosives, both of some historical interest?

# Save the Lakes Update: The Williams Lake Project

by Nancy Schniedewind and Chris Beall

On March 21, Save the Lakes presented a public forum, co-sponsored by the Mid-Hudson Group Sierra Club, entitled “Williams Lake: A Public Forum on Hype vs. Realities.” The purpose was to examine how realistic some of the claimed benefits of Hudson River Valley Resorts’ (HRVR) development actually are. These concerns are particularly relevant because they provide a critical lens with which to examine the draft Final Environmental Impact Statement (FEIS) which was submitted to the DEC unexpectedly earlier that day.

Representatives of AFFIRM (New Paltz) and Save the Ridge (Gardiner) discussed how they analyzed developers’ promises and used the SEQRA process to protect the interests of their towns. David Porter summarized the decisive mid-90s experience of the New Paltz SEQRA review of the Walmart-anchored megamall proposal. The activist public’s persistent insistence on fair statements and analysis of actual or likely major negative impacts in fiscal, economic, traffic and water-related realms, a stance supported by community members across the political spectrum, resulted in the planning board’s rejection of that project on SEQRA grounds alone. Patty Parmalee explained that “whatever position a person took” on the Rosendale project, SEQRA was a process that could bring people together and serve the community as a whole.

Save the Lakes consultants and members then briefly highlighted some of the promises of the HRVR developers with a critical lens.

## JOBS

Chris Beall noted that the developer states that over 1,300 full-time-equivalent construction jobs will be created, but that’s an average of only 136 such jobs over the 10-year construction period, only half of which are likely to be local. HRVR states that 300 permanent, full-time post-development jobs will be created, but their job chart shows only 22% of promised jobs will definitely be full-time, with the rest either part-time (15%) or a mix of full-time and part-time, to be determined later. The latter could potentially be paid (if a half-time position) only \$11,000 a year.

## FISCAL IMPACT

David Porter explored HRVR’s failure to acknowledge the lower fiscal gain for local governments if the IDA tax abatement program was used. As other negative fiscal impacts for town and county governments, he also cited HRVR’s failure to acknowledge likely major road repair costs (from heavy truck damage during the construction phase) and likely significant new social services and affordable housing costs because of low wages for many in the new substantial project workforce.

## TRAFFIC

Tim Trompeter noted that HRVR’s DEIS claims the project’s impact on traffic volumes and road conditions will be insignificant, not only during years of heavy construction and building, but during operations as well. No mitigation is offered for road damage caused by heavy transport traffic on local roads, and no compensation is provided for the improvements to local roads and intersections that will be needed to alleviate predicted congestion during resort operations—hidden costs that will erode the promised tax benefit to the town and the county.

## WATER

Paul Rubin argued that HRVR lacks empirical data that supports the water supply they need for the project size they desire. HRVR has yet to conduct the hydrogeologic testing required in the scoping document to demonstrate groundwater flow paths and down gradient receptors, including vulnerable bat hibernacula and a State wetland.

## PUBLIC ACCESS

Sheila Dvorak noted that the hype is that the community will gain greater access to the property through the Wallkill Valley Rail Trail, and swimming off the trail at Fourth Lake, but the reality is these promises are verbal and vague, and no binding contracts have been signed. Before moving forward, the town and DEC should require detailed written information on public access, including day-pass prices, as this will benefit everyone in our community.

## COMPLIANCE WITH THE COMPREHENSIVE PLAN

Marie Caruso and Mourka Meyendorff pointed out that the Comprehensive Plan’s priorities include the protection of Rosendale’s water resources and significant natural areas, small-scale development centered along the Routes 32 and 213 corridors, and housing which is affordable for all Rosendale residents. The Binnewater Lakes were especially cited for protection because their diverse habitats provide shelter for many rare species as well as their importance to tourism and outdoor recreation. To build a large-scale, exclusive resort and luxury home development in an area cited for preservation is clearly not consistent with that plan.

## ALTERNATIVES

Nancy Schniedewind showed that HRVR has yet to provide adequate data to support its argument that “other alternatives for the property are simply not viable.” A publicly-accessible park, stand-alone resort, conservation resort or private-public partnership have not been adequately examined. Other alternatives, rather than serve HRVR’s 1% clientele, would better serve the 99%.

## FORUM DISRUPTION

Prior to the forum, representatives of HRVR gave handouts containing suggested questions to their supporters. None of the questions were related to information about the project that had been publicly released. Most were directed at activities of Save the Lakes, and framed in an argumentative way.

When it came time for the Q&A, assembled project supporters were aggressive and disruptive, not engaging in dialogue. Many saw fit to speak out of turn, giving speeches rather than asking questions and preventing others from doing so.

Save the Lakes and the Sierra Club are disappointed that their plan to engage the public in looking at underlying realities beneath the developer’s claims was disrupted by an aggressive group that had made up their minds and was not interested in further information. We believe HRVR must accept significant responsibility for what happened.

## MOVING FORWARD

The FEIS is required to address all substantive comments presented during the earlier DEIS public hearing/public comment period. All of these comments can be found through a link on the STL website, savethelakes.us.

It could take several weeks or months for the DEC to require modification of HRVR’s draft FEIS, if it believes it necessary, before official distribution for the REQUIRED period of public comments (SEQRA Regulations 617.11[a]). In the meantime, STL has requested under FOIL a copy of the unofficial FEIS in order to prepare its own critiques for a timely intervention at least at that required stage, if not also before. STL also urged the DEC to significantly expand the official comment period beyond the required minimum 10 days because of the size and complexity of the FEIS.

## FINAL ENVIRONMENTAL IMPACT STATEMENT SUBMITTED

Hudson River Valley Resorts submitted their FEIS to the DEC on March 21st. The FEIS responds to comments collected on the Draft EIS last spring and summer. In response to many of the comments, HRVR has somewhat reduced the overall size of the project, including the following site plan changes:

- ◆The number of residential units has been reduced from 160 to 154 (4%).
- ◆12 of the 154 residential units (8%), scattered throughout the site, have been designated as subsidized workforce housing. Half of these will be within planned townhouse units, with the other half in separate residences constructed as duplexes. This leaves 142 market-rate homes as part of the project.
- ◆4 houses have been moved. In combination with the reduction above and the creation of 3 duplexes, this has allowed the removal of residences from areas that were deemed sensitive as a result of habitat (mainly for bats) and karst geology.
- ◆For the same reasons, the teahouse, yoga / meditation studio, and amphitheater have been removed, along with a boathouse initially proposed near the south shore of Williams Lake, within range of a sensitive wetland. Houses and an access road in this area were also moved slightly to avoid the wetland. Hotel valet parking was moved westward to avoid sensitive areas.
- ◆The wastewater treatment plant has been moved further from a property line shared with Women's Studio Workshop.
- ◆Total parking has been increased from 328 to 420 spaces (28%).
- ◆The south (current) entrance has been reconfigured from a triangle into a 'T' intersection, with two alternatives proposed.

These small steps are disappointing in that HRVR fails to seriously consider the Conservation Resort Alternative, which the DEC asked them to do on August 11. We will be reviewing the entire 500-page report and its several Appendices to determine whether the applicant has responded adequately to each of the many comments that were made on the DEIS. Over the next several weeks we will follow up with a series of emails with our analyses of specific areas of the FEIS. Once the DEC accepts the FEIS (following their own review and possible changes), there will be only a 10 day period for public consideration of the document. In the meantime, you can see the FEIS, as submitted, at the Rosendale Library. Send questions to [SaveTheLakes@gmail.com](mailto:SaveTheLakes@gmail.com).

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## MINNEWASKA—SHAWANGUNK CAMPGROUND DEVELOPMENT

This project will develop a section of the Minnewaska State Park Preserve along Route 299. There will be approximately 60 campsites, a manager's quarters/office, a pavilion/bathhouse and comfort station developed on this site. Plans are being developed for regulatory review and construction. Plans were submitted to Department of Health last October. After receiving their comments the corrected plans were returned to them. DEC Permission to Construct Applications will be submitted when the plans are ready to go to bid. Submittals to DOT for highway work permits will be made in a couple of months. Once regulatory approval is received as well as full-project funding, the bidding process will commence. A Clivus Multrum composting restroom will be constructed in the main campground (in lieu of a conventional full service restroom) to reduce the size of the septic system required, thus enabling it to be constructed within the constraints presented by the terrain and soils at the site. The construction cost estimate is \$1,500,000, of which Parks currently has \$700,000 allocated to this project. An additional \$750,000 will be received from the Environmental Protection Fund.

## Our Tracking Heritage

by Michael Ridolfo

February 22nd. 7:45 a.m. ~30 degrees. Mostly clear skies. Wind SSE 0-1 (Beaufort). Spotty snow cover at ~1400 ft. En route to Sky Top summit at Lake Mohonk, I come upon the trail of a pair of coyotes, ascending the ridge from the east, single file. The stride length on one was a bit longer than the other and I assumed this to be a mated pair, but due to the nature of the terrain and limited time I couldn't be sure. They reached a carriage road and paused. Makes sense. Most humans don't like coyotes, or put more bluntly, fear the things we don't understand. They briefly assessed the moment, turned south and found the fresh trail of the deer whose scent they must have caught on the breeze. I laughed out loud as the scene unfolded—the happy couple circling around the deer tracks arguing about which way to go and who was gonna go first and whose bright idea was this anyway? They peeled off as the leader followed the trail into the Mountain Laurel while the other one flanked deftly along the road. The first one returned to the carriage road to resume their one-predator-body-mind as they bounded off together into a world of deep forest loam—a substrate that I longed to be able to track upon, and within whose mysteries I could barely fathom.

Historically we all come from great tracking families. We can safely assume this because we are here, now. Our ancestors, yours and mine, found food, avoided predators, skirted innumerable hazards, moved in harmony with the cycles of the seasons, adhered to complex social structures, chose suitable mates, and adapted to changing conditions as necessity dictated. To fail at any one of these elemental survival skills could mean that your multi-million-year-old chain of DNA might well be broken.

Today tracking is not an obsolete or even esoteric skill. Hunters and naturalists track. Geologists and meteorologists track. While some of these may seem far removed from classic tracking, the same simple and profound art of questioning applies to all of them—'What is this telling me?' 'What patterns am I seeing?' 'What happened here?' And the mother of all tracking questions: "Why?" However, the distinction between our ancestors and 21<sup>st</sup> century humans is that they were taught complex tracking and awareness skills at a very young age, while the brain was in a state of exponential growth and development, like a sculptor molding clay. Today most (not all) of our children are watching television, playing with manufactured toys and being bombarded—assaulted—with advertising. Because they began so young, our ancestors' tracking ability and that of a modern hunter bear little to no resemblance. Anecdotally, there are still pockets of primitive people living in the recesses of vast (but dwindling) wilderness areas that illustrate this.

So let's do some tracking by asking a foundational question: How can we reclaim the ancient gifts of tracking and awareness for our children? It is really quite simple. Hit the main breaker in your house and simulate a power failure. Get the kids OUTSIDE. Start tracking with them before they can walk. Those of us who live in the Hudson Valley are fortunate as we have access to pockets of genuinely wild open spaces. Teach them about simple hazards like poison ivy and ticks and how to keep themselves safe. Let the kids play in the rain until they are soaked to the skin and then have them put on warm dry cotton clothing and grab a hot chocolate and sit near a fire that they started themselves. Tap a tree for syrup. Go blueberry picking. Toss spring violets into your salad. Scramble around on a pile of boulders. Seek out mysteries at every opportunity and follow them to their source. As you may have guessed, these practices are gifts of awareness and gratitude for us as well.

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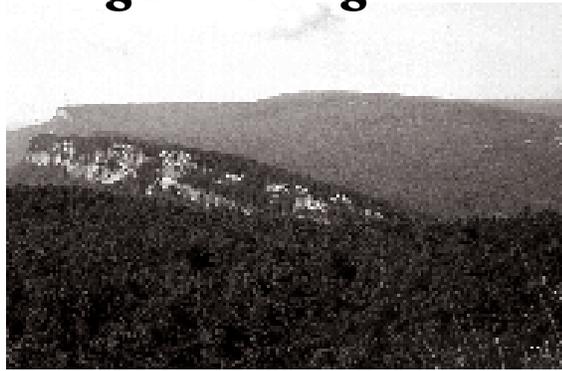
*Michael Ridolfo is the naturalist at Mohonk Mountain House. He has 20 years experience running nature education, tracking and survival skills programs, native philosophy workshops, youth mentoring experiences, youth-at-risk programs and more. For further information you can visit [www.newpaltzwildernessmind.com](http://www.newpaltzwildernessmind.com)*

# Friends Goes Online

[www.Shawangunks.org](http://www.Shawangunks.org)

Check out Friends of the Shawangunks website at [www.Shawangunks.org](http://www.Shawangunks.org)

It has back issues of our newsletter *Shawangunk Watch*, links to dozens of Shawangunk sites, updates on ridge projects and threats, and more than 80 photos showing natural features of the ridge. The site also provides an easy way to join Friends, contact us, or send a donation using a credit card.



FRIENDS of the SHAWANGUNKS  
Preserving Open Space Since 1963

## Give a Friends Tee Shirt

Tee shirts are \$15, and that includes shipping.

Our shirt is 100% cotton, and features a portion of the NY/NJ Trail map so you can never be lost if you hike in that area! Go to our website: [shawangunks.org](http://shawangunks.org) for an order form.



## PLEASE CONSIDER A CONTRIBUTION

There is still work to be done  
protecting Open Space  
and it is critical to be able to do it now!

## THANK YOU FOR YOUR SUPPORT

**Friends of the Shawangunks, Inc.**  
is a not-for-profit organization working to preserve open space in the Shawangunks.

**The Shawangunk Conservancy, Inc.**  
is a not-for-profit land conservancy.

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A copy of FOS and The Shawangunk Conservancy's latest financial report may be obtained by writing to the Office of the Attorney General, Charities Bureau, 120 Broadway, New York, NY 10271, or by writing to The Shawangunk Conservancy.

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