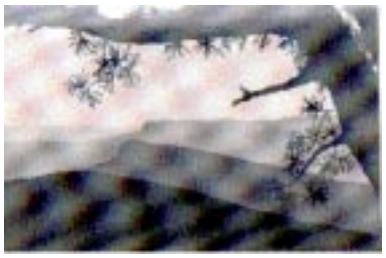


SHAWANGUNK WATCH

Summer 2008 Preserving Open Space in the Shawangunks Volume 13 # 1

Friends of the Shawangunks & The Shawangunk Conservancy

Wild Fire Burns 3,100 Acres at Minnewaska State Park Preserve

by Keith LaBudde

The Fire

A wildfire was discovered in Minnewaska State Park Preserve on the morning of Thursday, April 17. It was across the road from the western of the two overlooks on Route 44/55, west of Minnewaska's entrance. It is likely that what is being called the Overlook Fire resulted when someone parked at the overlook, crossed the highway, walked up the hillside, and before returning to their car discarded a lit cigarette.

Conditions were very dry because there had been no rain recently, humidity was low, temperatures were high and there was a strong wind. Because there had been no fire in this area in a long time, there was a huge accumulation of burnable material (downed trees, dead shrubs and leaf litter), so the fire spread quickly. Department of Environmental Conservation (DEC) ranger Captain Dan Walsh reported that never before had he experienced an explosive fire like this. Central Hudson reported that flames had reached its high voltage lines 90 feet off the ground. Flame heights of 60 to 70 feet were common.

By the time the fire was 100% contained on Tuesday, 3,100 acres had burned, the largest wildfire in New York State in 13 years and the largest fire on the ridge in 60 years. The affected area is roughly bordered by Route 44/55 to the north, the Lower Awosting Carriageway to the east, the Old Smiley Road to the south and the Stony Kill to the west. While still a relatively small fire on Friday morning (72 acres), it had grown to 810 acres by noon, and more than doubled again four hours later. Its progress slowed down overnight on Friday as air temperatures fell and the relative humidity rose. The apparent increase overnight on Saturday was largely a result of burnout efforts (fires set to stop the progress of the main body of the fire by burning fuel in its path).

The Fight

Much controversy surrounds what happened during the early efforts to control the fire. A friend who arrived on the scene at about 12:30 PM on Thursday has provided me with what I regard as an objective report. This friend has had considerable experience dealing with both wildfires and controlled burns. He estimates the fire had burned about 14 acres when he arrived. The DEC, which had the responsibility for fighting the fire, was concerned about the safety of three groups fighting the fire (members of two volunteer fire companies and some employees of Minnewaska) and decided to pull them back. The firemen strongly objected, but the DEC felt the men were in danger because of the weather conditions, of the fact that the three groups were working separately with no coordination or communication between them and of concern that there were too few fighters to control the fire. It took the DEC about 40 minutes to establish a plan for attacking the fire, equip the men with radios, and assign specific missions. My friend, who has no affiliation with the state or a volunteer fire company, felt the DEC acted properly, but some of the firemen believed they could have brought the fire under control if they had not been pulled out.

photo by Mike Stanislaw

The DEC has an established list of priorities in fighting a fire: (1) the safety of those fighting the fire and of the public; (2) the protection of structures; and (3) putting out the fire. This was not the only time that those fighting this fire were pulled back. On Saturday afternoon, because of the increased risk to both fire fighters and to homes in the area, all personnel were moved back to large safety zones that had been cleared for just that purpose, and the emphasis shifted to protecting structures. As a safety precaution fire trucks had been stationed adjacent to 20 houses closest to the fire. As it turned out, no houses were seriously threatened, and the only building burned was a structure on private property.

Efforts to fight the fire were hampered by the weather, dense growths of mountain laurel and pitch pine and the rough terrain that in some cases was accessible only on foot. The workers tried to establish fire lines by clearing any dried material ahead of the fire and then starting burnout fires intended to burn toward the approaching fire and use up all its fuel. My friend was lighting the burnout fire along his line and was astounded at how this fire roared to life. The body of the

continued on Page 2

ALSO IN THIS ISSUE

Gabe Chapin: A Fire Ecologist Speaks	Page 3
Faulty Towers	Page 6
Shawangunk Coyotes	Page 8
The Eastern Box Turtle	Page 10
Climate Change Close to Home	Page 12
A Norm Van Valkenburgh Survey	Page 14

main fire was moving so fast that it was impossible to connect the various lines being cleared before the fire could jump the lines. It was this basic approach of clearing fire lines by hand (and bulldozer) and then starting burnout fires that was tried over and over as the fire managed to jump the lines. A weather system moved in Sunday morning, bringing fog, mist, cooler temperatures and reduced wind, all helping to slow the progress of the fire.

The state brought in a third of its rangers (about 40) from around the state, all nationally qualified to fight wildfires. Eventually 134 state and local agencies were involved, including 80 fire companies. On Sunday, 420 people were involved in fighting the fire. It was a massive effort, requiring careful planning and coordination. Only one injury was reported, to a bulldozer operator on the last day of the fire.

Helicopters were used to dump water on the fire: two state police helicopters with a capacity of 100 gallons and a National Guard helicopter with a capacity of 500 gallons. This type of fire is put out by depriving it of fuel, not by dumping water on it. The helicopters simply dumped water on hot spots to slow down the fire's progress. They were also used for reconnaissance and mapping, key to planning how to contain the fire.

The preferred way to fight a wild fire is with manually cleared fire lines, but the volatile nature of this fire required the use of bulldozers, always a controversial step because of the damage that results. Even with the help of the bulldozers, fire lines were jumped three times before the fire could be brought under control. Existing carriage roads provided logical fire lines, though even these required some clearing.

Some neighboring property owners were upset because they found it difficult to learn about the fire's progress. There was surprisingly little information available to the public about the fire. The DEC concedes that it was so focused on fighting the fire that it neglected to keep informed those most likely to be affected. It did hold a meeting in Cragsmoor on Sunday morning to inform residents there of the fire's progress, but there was no such meeting for residents closest to the fire. I find it incongruous that I could learn from national television of the progress of a 70-acre fire in Colorado, but the only information available in the media about this 3,100-acre fire was in local papers. The fact that only trees and not private homes burned may explain why the networks weren't interested.

The Future

It is a disturbing experience to drive by the burned area on Route 44/55. It looks like the area is devastated, but in fact it is already showing signs of recovery. While in some areas the entire forest canopy was killed, in other areas, where trees and shrubs were not full leafed out, revival is already underway. Where the canopy was destroyed, it will be a long time before trees return, so shrubs will dominate. Within weeks there were reports of trillium in bloom, bracken fern reappearing, blueberry bushes popping up and laurel roots producing sprouts. Particularly dramatic evidence of recovery was the discovery of a robin's nest with two eggs and two fledglings in a burned out stump (photo at right). And rare plants such as pink lady slipper may become more abundant as increased sunlight can reach the ground. There is concern, however, that a drought this summer could prevent recovery and allow species not native to the ridge to move in.

While Mother Nature is hard at work healing from the fire, humans are faced with a number of tasks. Of utmost importance is dealing with the threat of erosion, especially resulting from the use of bulldozers to cut lines. The area around the Stony Kill, where a private individual did some clearing with his bulldozer, appears to be a particular problem. Water bars will be constructed and grass planted to attempt to deal with this problem.

Because the fire was in an area that is difficult to see, even from within Minnewaska, it is hard to appreciate what has transpired. Some idea of its impact can be seen from the Route 44/55 and the Lower Awosting Carriageway, but the public will not be allowed access to the burned area itself. There is great concern that individuals entering the burned area may inadvertently bring in the seeds of invasive species on their clothing. The Jenny Lane Trail will probably be closed for at least a year to allow vegetation to revive. Also closed at present are the Stony Kill and Smiley Carriageways and the Shaft 2A Road area.

Keith LaBudde, was chairperson of Friends from 1989 to 2006. He is still actively rock climbing at the age of 74! What a great leader—of Friends and on the rock.

Prescription for the Ridge

Fire, both natural and set by man, has historically been a part of the ridge's system for maintenance of its unique habitat. For example, fire is necessary to free pitch pine seeds from their cones. Chestnut oak can survive only if invading taller species such as red maple are held back by fire. And fire frees up nutrients in the debris on the ground. However, a fire as extreme as the Overlook Fire is unnecessarily destructive.

How can fires of this magnitude be prevented? In the absence of fire, fuels such as downed trees, dead shrubs and leaf litter build up, ready to feed the next fire. To get rid of these accumulated materials, The Shawangunk Ridge Biodiversity Partnership, a partnership of state and local organizations (including The Shawangunk Conservancy) involved in protecting the ridge, began a program of prescribed burns (fires set under carefully planned and strictly controlled conditions) in November 2005. The initial efforts have been in Mohonk Preserve fields, and there are plans to extend the program to the Sam's Point Preserve. The Overlook Fire clearly demonstrates the need for a ridge-wide program of prescribed burns. While the state has cooperated with The Nature Conservancy in conducting prescribed burns on Long Island, it has not yet implemented a program on the ridge. Because it owns a major portion of this ridge, the state needs to establish such a program of as a way to reduce the risk of more fires like the Overlook Fire.

Gabe Chapin's photograph captures the essence of life returning to a burned area. You can see a robin's nest with some young hatched and two to go nestled in a charred stump! Sorry we don't print in color!

A Fire Ecologist Speaks

This photo is by Mike Stanislaw a climber and IT specialist from Doylestown, Pennsylvania. He has a house in the Gunks and took these pictures on April 19. Above: a firefighter near the fire line just west of the ranger's cabin near Lake Awosting. The firefighters used back burns to meet the main fire. The fire came within a half mile of Mike's house

Phil Underdown captures the bulldozed fire line when he walked through the already-burned area.

The helicopter was used to control the fire by coming around the sides of the fire line as they rushed to expand the line and to keep track of which way the fire was moving. Water was available in Lake Awosting. Photo by Mike Stanislaw

***GABRIEL CHAPIN** is the Forest & Fire Ecologist for The Nature Conservancy's Shawangunk Ridge Program. He has been working here for 3½ years concentrating on fire management, planning, and implementing a prescribed fire program with the Shawangunk Ridge Biodiversity Partnership, as well as a great variety of other projects. He has been involved with prescribed fire for about 4 years and has worked on fires in New York, Maine, Florida, Pennsylvania and Minnesota. Before coming to the Shawangunks he worked for the US Forest Service in Colorado studying the impacts of the 140,000 acre Hayman Fire of 2002—the largest and most severe on record for Colorado. Gabe has also worked with the US Forest Service in Alaska and the Vermont Agency of Natural Resources. He has a bachelor's degree in forestry from the University of Vermont and a master's in forest fire science from Colorado State University.*

After the fire he worked on a handout on ecological impacts that was prepared for a public meeting in Kerhonskson in May. Below is Gabe's text:

The Shawangunk Ridge Biodiversity Partnership) is now working to identify priorities for monitoring and research in the burned area, which will include:

- Vegetation recovery and oak forest regeneration (fire is a natural and necessary part of oak forest ecosystems but we have to see how the forest will respond to this particular fire given that is did burn very hot over a relatively large area)
- Deer browse impacts
- Invasive species
- Fire behavior during the fire and the impact of accumulated forest fuels (flammable shrubs, woody debris and leaf litter) as a result of fire suppression for the past 50-100+ years. (Gabe noted that he doesn't know for sure but suspects that it has actually been well over 100 years since a fire burned in that particular area)
- Comparisons of bird abundance inside and outside of the burned areas

The Park is also working on restoration of areas that were impacted by fire suppression activities, e.g. along bulldozed firebreaks, and there has been some water quality monitoring as well.

Ecological Impacts of the Overlook Fire at Minnewaska State Park Preserve

What happened?

The Overlooks Fire at Minnewaska State Park was started by a discarded cigarette and burned approximately 3,100 acres.

Fires are natural part of the Shawangunk Ridge ecology, but no fires have burned in most areas for 50-100 years.

Due to the accumulation of forest "fuels," the Overlook Fire burned with greater intensity than most historical fires.

In some large areas, the entire forest canopy was killed, while in other areas the fire burned along the surface of the ground, killing the tops of mountain laurel bushes, other shrubs and some small trees.

Very few animals are generally harmed during a wildfire. The vast majority escape, either by leaving the area or hiding underground.

How will the forest recover?

Although the burned area looks very black, many of the shrubs and trees are already beginning to resprout, and the area should "green-up" over the course of the summer.

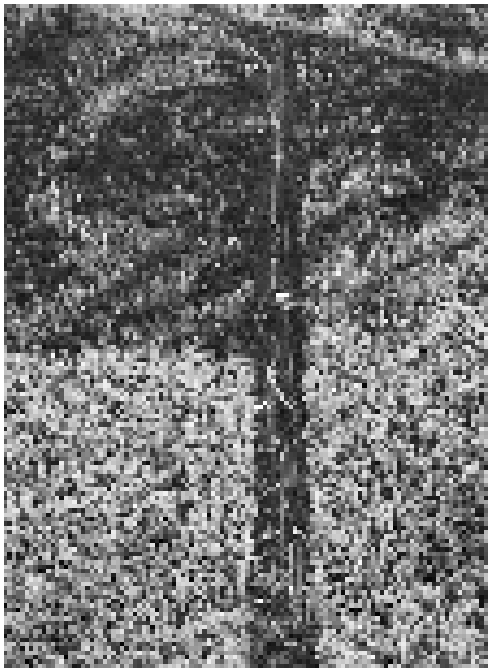
Areas where the entire forest canopy was removed will likely be dominated by shrubs and may take many years to fully recover. In the meantime, these areas will provide a different type of habitat for certain birds and other wildlife.

In areas where some forest canopy remains, trees will begin to regenerate quickly, from both seeds and stump sprouts, as more light reaches the forest floor.

Many animals, including birds and rattlesnakes, have already begun to enter the burned area.

Some rare plants, such as pink lady slipper and appalachian sandwort, may begin to appear in greater numbers. Prior to the fire, many smaller plants were being suppressed by the shady conditions and competition from dense shrubs.

Photographer Phil Underdown captured the extent of the burned area from a light plane.. Lake Awosting is in the upper right and in the distance you can see Castle Point,



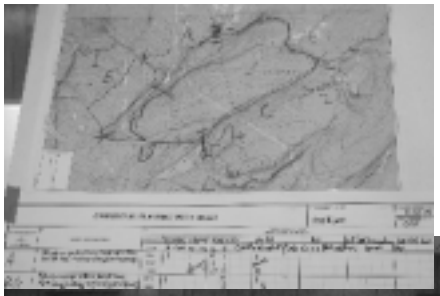
The fire burned along part of the MK powerline that goes through Minnewaska State Park Preserve

The Complexities of Firefighting!

The DEC and local firefighters fought the fire from the ground and the air . Photos below are courtesy of the DEC

Firefighters assembled for a briefing.

Helicopters could pick up water from Lake Awosting



Serious planning and mapping was essential

Fire on the Mountain

by Chris Rowley, excerpts from the *Ellenville Journal*

Below are excerpts from an article by Chris Rowley, Pine Bush Bureau Chief of the Ellenville Journal, about a presentation at the Kerhonkson Fire Department in early June. Rob Mecus, NY State Forest Ranger talked about the lessons learned from this most unusual fire. Heidi Wagner, Sam's Point Preserve manager gave a talk about the Firewise Initiative and Program.

Back burning photo courtesy of the DEC

"This program (Firewise) originated in the western states which have been battling wildfires for quite some time. The essential problem is that people have been moving out of towns and suburbs into forest and wildlands. This creates the "wildland/urban interface," which can provide conditions ideal for spreading wildfires, destroying homes, and threatening lives. Firewise is designed to awaken people to what they can do to protect their homes and their families from dangerous wildfires.

Wagner explained that, as Cragsmoor is the only community actually on the Shawangunk Ridge, "we saw the possibility of fire reaching our doorsteps, and so Cragsmoor took a serious look at the problem and what could be done, and that lead to Cragsmoor becoming the first Firewise Community in New York."

Wagner went on to explain that they were faced with the problem of having a lot of houses, a lot of roads and driveways and only a limited amount of firefighting resources, such as trucks.

"So the solution was to take pro-active steps, to make our community safer from wildfires," said Wagner.

The Firewise program for protecting a house includes creating several zones of protection. Zone 1 is a well-irrigated area cleared of flammable material that encircles the structure for at least 30 feet on all sides.

Beyond that lies Zone 2, which is an area where low-flammability plant materials should be used.

Zone 3 is where you should place low-growing plants and well-spaced trees, remembering to keep the volume of vegetation which fuels fires low.

In Zone 4, you selectively thin and prune all plants, and remove highly flammable vegetation.

It was evident that the program's language comes from Arizona, California, or even Colorado or western Oregon. In New York, our climate is usually more that of a temperate rain forest and plant materials grow in such abundance given any access to sunlight that clearance cutting, bushwhacking, mowing, and chain-sawing is much more necessary than irrigation or planting.

However, as Wagner and Mecus [DEC forest ranger] both observed, what was normal for New York is not necessarily what will be normal. This April, dry and with abundant sunshine, was more like Arizona-weather than what we're used to. With global climate change, this may become something we'll see more frequently. And if we do, then having a lot of vegetation close around a house on the edges of the forest may be asking for trouble. Mecus illustrated this point with photographs taken of houses on various parts of the ridge that were either hidden in foliage or had woodpiles placed conveniently close to the house.

"Having a nice pile of seasoned, dry wood beside your house is a bad idea in a fire zone," said Mecus. "It may be more convenient in winter, but it provides a fire with all it needs to spread into your home."

Wagner pointed out that "We haven't had a fire here in fifty years, so there's lots of fuel just waiting to burn in the right conditions. Out west, where they've been fighting these sorts of fires for a long time, this has forced changes in codes. In Oregon, we learned you can't even buy a house unless it meets Firewise standards." "What you have to do," said Wagner, "is think like a burning ember. Once you start to see it from an ember's point of view, you can see the things you need to do to keep your home safe. And, I've been told, embers can be carried aloft, up to three miles in the right conditions."

Firewise also recommends sensible ideas like using fire-resistant roofing materials, which means almost anything other than Cedar Shakes. However, in New York, roofing is generally made with Class-A shingles or turned metal, both of which have good resistance to flying embers (for more Firewise info, check out www.firewise.org)."

Another Firewise recommendation, this time for construction, is of particular concern where the Shawangunk Ridge and the Catskills are concerned. Since fire moves rapidly up a slope, it is best not to build in places with wonderful views out over the valleys below. However, since that goes against human nature, people with homes perched above slopes should take Firewise precautions and remove any flammable materials below the house that could conduct the fire towards the house.

And, Ranger Mecus would add, it's also vital to think about helping the firefighters. One good example is making sure that your driveway doesn't have too steep a grade. "If a fire truck cannot be backed up your driveway, then in an emergency the firefighters are going to be seriously hampered when trying to save your home." Mecus illustrated this by showing a photograph of one driveway that proved considerably difficult in fire prevention efforts in April. It was designed, perhaps, to allow access to the house for the owner's SUV, but not for fire and rescue vehicles. This is one of those details that Mecus feels should be taken into account in county and locality building codes.

"Going beyond Firewise, all our communities should be looking at their building codes and thinking about the risks of wildfires and how structures can be protected in the event of a fire."

Faulty Towers

by Maureen Radl

The proliferation of telecommunication towers on the Ridge and surrounding mountain tops is a constant reminder that industry, in this case, the communication industry, will continue to intrude upon the most treasured parts of the landscape that others have struggled to protect. Once in place, these metal sentinels stare down into every valley defying efforts to restore the heights to the natural domain of trees and cliffs.

A long-standing example is the bizarre collection of telecommunication towers massed on the northern shore of Lake Maratanza at the Sam's Point Preserve. In recent years, this forest of tall thin towers has been slightly reduced, only to be replaced by several massive structures sprouting an ever increasing number of microwave dishes. For the first-time hikers at Sam's Point who have been enthralled by the impressive cliffs, expansive views, blueberry fields, and dwarf pitch pine forests, it is often shocking and discouraging to have their first views of the lake marred by these eerie creations so out of place in this natural setting. Some have even written about turning back rather than proceed to that threatening side of the lake. The leases for these towers, many of them for 99 years, were negotiated with the Village of Ellenville decades before the land was acquired by the Open Space Institute and will have to be honored well into the future.

Proposals for the erection of new telecommunication towers are presented to local planning boards on a regular basis. This spring, SBA Towers, a Florida-based company, submitted a proposal to build a 280 foot lattice cell phone tower in Spring Glen in the Town of Wawarsing. The site is off Route 209 on Tice Road, on land abutting the Sullivan County line and the Town of Mamakating. The proposed tower has raised serious concerns of residents both throughout the town and in the immediate vicinity of the proposed tower. Some issues centered on its visibility from the Shawangunk Ridge and on an FAA requirement that towers over 200 feet require a blinking red light to warn airplanes flying at night.

To examine the proposal in more depth, the Wawarsing Planning Board hired the consulting firm Center for Municipal Solutions. Their report indicated that SBA's proposal was without adequate information regarding other cell phone towers in the area and the possibility of antenna co-location which is required by town law. The report also points out that the proposed height of 280 feet might not be necessary to provide the coverage intended by the company. The report stated that coverage from 195 feet would be comparable to that at 280 feet. The Ulster County Planning Board also reviewed the proposal and agreed with the consultant's findings. In addition, the Board also pointed out that Wawarsing is currently revising its master plan and will be updating its laws regarding telecommunication towers. It suggested a moratorium until the new zoning statute is completed. The Town Planning Board is considering the recommendation, but the final decisions are yet to be made.

Federal communication law requires that all municipalities find some locations where towers can be constructed. It is, however, up to the residents to work closely with their planning boards to ensure that every applicable section of the zoning law be brought to bear on these decisions. If such caution is not taken, more unnecessarily high and poorly placed towers will dominate historic views both day and night.

Maureen Radl, longtime FOS board member and Cragsmoor resident has fought for environmental issues for more than twentyfive years.

PROJECT WATCH

More Faulty Towers ?

Sensible Wireless for Gardiner (SWG) continues its fight to prevent the construction of an oversized cell tower in the rural, scenic town of Gardiner. The 164-foot uncamouflaged tower, proposed by the Gardiner Town Board (TB) with the assistance of wireless developer JNS Enterprises, would be located at the town transfer station on Steve's Lane. SWG members are primarily concerned about the visual impact of this facility, as it could be seen from locations all over town. It would negatively affect property values, as well as the viewsheds that are so important to Gardiner's local economy. As Gardiner's first wireless facility, the tower would set a poor precedent for all the wireless applications that would follow.

Gardiner has a comprehensive wireless ordinance, which was designed to ensure that any wireless facilities are appropriate for the Town's rural, scenic character. It regulates many aspects of wireless facilities—not just height, but also camouflage, screening of base facilities, number of antenna arrays, and visual impact analysis, to name a few. The ordinance, which is part of Gardiner's zoning law, encourages facilities with minimal visual impact. It includes a stipulation that a wireless carrier may need to site multiple small, low-impact towers instead of a single large, obtrusive one. This would allow the carrier to achieve its coverage goals without damaging Gardiner's viewsheds.

The TB's proposed tower would violate numerous provisions of Gardiner's wireless ordinance. However, citing the desire for improved wireless service, a 3-to-2 majority of the TB recently voted to proceed with the environmental review that would be necessary for the Board to exempt itself from the Town's own zoning law and build the tower.

To date, the Board has not made any serious attempt to find zoning-compliant alternatives. SWG feels that the major force behind this has been the Board's contract with wireless developer JNS Enterprises. The JNS contract is very restrictive, and it is the main reason why the debate over the proposed tower has been so drawn out and unproductive. If the TB decides not to approve the JNS tower, it will be contractually obligated to pay a sizable fee to the developer. To make matters worse, JNS has shown little flexibility on the design and size of the tower, and has refused to furnish technical information on the proposed facility unless someone else pays for it. The contract is essentially structured in a way that forces the Town Board to do an end run around its own zoning and build the tower, or else face a stiff financial penalty.

On a more positive note, Gardiner TB member Greg Finger, who voted in favor of the tower, will investigate the possibility of ending the Board's relationship with JNS. There has recently been some Board discussion on finding a way for the Town to build the project without the aid of a developer. This would allow the Town to receive all the lease revenue from the tower instead of splitting it with the developer.

SWG members are hopeful that the TB will be able to free itself from JNS. If this can be done, they say there will be a fighting chance of getting a zoning-compliant project. The Board has a golden opportunity to do Gardiner's first wireless project right. It would just be a question of the Board's willingness to do the necessary research and to demand low-impact wireless facilities.

SWG supports improved communications, but not at the expense of Gardiner's scenic environment. That Gardiner's wireless coverage could be better isn't really subject to debate. This issue is about getting improved coverage without compromising the Town's scenic beauty.

SWG needs your help to stop the proposed tower. Please e-mail your comments to the Gardiner Town Board at *townclerk@hvc.rr.com* Comments from Gardiner residents are particularly valuable. For more information on the project, contact SWG members Eugene Ruoff (845-255-4916) and Linda Kastan (646-220-3959).

Long Path: National Scenic Trail?

by Jakob Franke

On June 7, at the National Trails Day event at the LaFarge property on the foot of the Shawangunk Ridge in Summitville, Congressman Hinchey, who represents the 22nd district, announced that he had submitted a bill (H.R. 6200) to fund a feasibility study for National Scenic Trail designation of the Long Path (LP). The LP currently connects the George Washington Bridge to Thatcher State Park just west of Albany. The bill was cosponsored by congressmen Engel (NY) and Rothman (NJ). Senator Lautenberg(NJ) has submitted a parallel bill in the senate (S. 3094), which was co-sponsored by Senators Schumer and Clinton of NY, and Menendez of NJ.

The bills read: To amend the National Trails System Act to provide for a study of the Long Path Trail, a system of trails and potential trails running from Fort Lee, New Jersey, to the Adirondacks in New York, to determine whether to add the trail to the National Trails System, and for other purposes. Short title: `Long Path Trail Study Act of 2008'.

The National Scenic Trails (NST) system currently contains eight designated trails. Feasibility studies on a number of other trails are being conducted. The National Trails System Act institutes a national system of historic, scenic, and recreation trails. National Scenic Trails are trails of at least 100 miles in length that provide for maximum outdoor recreation potential, and for the conservation and enjoyment of nationally significant scenic, historic, natural, or cultural qualities of areas through which such trails pass.

The National Park Service administers and coordinates national trails and provides technical assistance to local and state public agencies and private organizations working on river and trail corridor projects. Some of these involve establishing trails on abandoned railroad rights-of-way.

The Shawangunk Ridge Trail, which runs from the NJ border to Cragsmoor, is a part of the Long Path System. The Long Path continues from Cragsmoor north through the heart of Minnewaska State Park Preserve—a total of around 35 miles.

The NST designation does not provide access to unlimited federal funds or the power of eminent domain. One of the main benefits of the NST designation is the increased status and visibility that this designation bestows. It would translate in increased cooperation of various agencies at local and county level because the trail would appear on the planning maps, and future development along its corridor would have to consider its impact on the trail.

A similar feasibility study for the MMM (Monadnock, Metacoment and Mattabesett) Trail System concluded that the long-term viability of the MMM Trail System as a high quality, continuous, long-distance trail required a sustained level of increased focus and resources by a wide array of trail partners. NST designation appeared to be the most feasible way to generate such an increased level of attention and resources. In that case it has resulted in its designation as the New England National Scenic Trail.

The expectation is that the "Long Path Trail Study Act of 2008" would come to similar conclusions. The New York-New Jersey Trail Conference, which has built the LP and maintains it, is an organization based in the NYC metropolitan area. It lacks the resources to push a project as ambitious as the LP extension to the Adirondacks. In order to expand the LP new partners are needed, and increased visibility might be the key.

Even if the study would not result in NST designation, it could yield a lot of benefits. The study might suggest improved management, a better route, and identify potential allies to help finish the trail north of the Mohawk River, and into the Adirondacks.

Jakob Franke is chair of the NY-NJ Trail Conference's LP South Committee and an ardent hiker

Minnewaska Master Plan Being Revised

The Palisades Interstate Park Commission (PIPC) began the process of revising its Master Plan for Minnewaska State Park Preserve by holding meetings in New Paltz and Ellenville to obtain public input on possible changes. All the various interest groups were represented: hikers, bikers, climbers, equestrians, hunters, swimmers and snowmobilers, all asking for increased access to the Preserve. Friend's board members Maureen Radl, Patty Parmalee and Keith LaBudde attended, as did Paula Medley of the Basha Kill Area Association, all emphasizing the importance of Minnewaska's designation as a park *preserve*, and the obligation this places on PIPC to consider preservation of resources in any changes it makes to the plan.

There are many voices speaking for increased access to the Preserve. We need voices speaking for the Preserve.

We obviously are very concerned about potential adverse impacts of excessive or inappropriate use of the Preserve.

The public has until August 11 to provide written comments of possible revisions to the Master Plan.

Write to:

Mark Hohengasser
Planning Bureau
Agency Building One
Empire State Plaza
Albany NY 12238
mark.hohengasser@oprhp.state.ny.us

There are many voices speaking for increased access to the Preserve. We need voices speaking for the Preserve.

The timetable for revising the Master Plan is:

Draft plan & Draft Environmental Impact Statement	January 2009
Public Hearing	March 2009
Final plan & Final Environmental Impact Statement	June 2009
Findings and adoption	June 2009

Tempting Fete: Voles, Deer and Habituation at the Eastern Coyote Conference

by Christopher Spatz

On a soggy October morning several years ago, I had one of those wildlife encounters that inspire hushed tomes of mossy nature communion…but I'll spare you the mush. For twenty minutes, I watched a handsome black, red-tipped coyote cavorting, coiling and pouncing on varmints tunneling under the tufted mounds of a big meadow. In a behavior known as voling, that coyote coaxed rodents from the grass like a cat.

An infrared photo taken by a remote camera in Minnewaska State Park Preserve

This wasn't in the sedge of a high Palmaghatt marsh, or down along the fecund basin where the Coxing Kill meanders through the Clove. This was within spitting distance of Route 213 just east of High Falls, where houses lined the meadow's perimeter. Commuters grumbled behind school buses. Hunters in rigs sporting gun racks slowed doing double takes. The coyote knew I was there, leaning on my car thirty yards away, wondering when black magic would vanish. A legendarily adaptive predator, the blithe coyote was as at home hunting in the residential field as it would be tracking the shoreline of Lake Awosting. Late running errands, I pulled myself away.

Back in April, up in Albany under the umbrella of the tenth Northeast Natural History Conference, biologists, students, and folks with a bent for predators gathered for a day of lectures on Canis latrans, the eastern coyote. Unknown to the East before European settlement, maps and graphs charted the coyote's migration from the Great Plains. Skirting the northern Great Lakes, they bred with red wolves (not gray wolves; nor, despite rural tales, with dogs) in Ontario, entering New York through the Thousand Islands in the 1940s (a later wave arrived via the central Midwest, now mingling with the hybrids).

Coyotes have colonized every region of the state, including the City, except, so far, for Long Island. They've colonized New Jersey. They're colonizing the entire eastern seaboard. A bigger, wolfier version of their western brethren, eastern coyotes bear their lupus lineage in a wider array of pelage, predation, and social characteristics. Like maybe, hunting deer?

I'd read several studies from Pennsylvania and West Virginia showing fawns during summer months making up a third of a coyote's diet. Cape Cod coyotes were found hunting deer collaboratively, like wolves. A family of coyotes—one Rhode Island biologist dared to call them packs (wolf packs are extended families joined by loners or dispersers from other packs)—moved in across the street in Rosendale last winter. I soon started finding bloody deer carcasses splattering the snow, like Pollock canvasses, littering the traces of the derelict cement mines. Coyote scats, calling cards dropped provocatively on slabs along trails and carriage roads turn up loaded with deer hair all the time. So, I came to the conference primed with a couple of coyote predation questions.

Weren't these opportunistic and newly minted predators filling the niche left by wolves and cougars, offering some check on the superabundant deer herds ravaging forest understories (a critical concern in the Gunks, one addressed at the conference's poster session by the Mohonk Preserve)? Is the presence of eastern coyotes, like the return of wolves to Yellowstone and cougars to Zion, pressuring where and how ungulates browse, restoring over-grazed ecosystems in what biologists have dubbed the "ecology of avoidance?"

According to conference researchers, it's not happening. Depending on prey abundance, the season, and coyote evolution, these "little wolves" appear to be content with smaller game. First year returns from a three-year study by the SUNY college of Environmental Science and Forestry showed coyotes barely taking fawns, and selecting only sick or weakened adults. An Ontario study by Trent University (the site for last year's eastern cougar conference) found that while eastern coyotes retain the size and energetic requirements to take ungulates, and that they will hunt deer collectively during severe winters, they're not exerting anywhere near the pressure on deer populations as wolves would in the same landscape.

Seems the East is teeming with coyote fare: plants, bugs, frogs, voles, moles, shrews, mice, squirrels, rabbits, woodchucks, grouse, and turkeys; to say nothing of dead livestock dumps, road kills, and hunting season gut piles to scavenge without coyotes having to tap their wolf inheritance tackling a hundred pounds of dodgy venison.

With my hopes dashed and the presentations finished, the day closed on a final, and I thought, dubious question: how to mitigate coyote and human conflicts? Dr. Roland Kays, a young and jaunty mammologist with the New York State Museum who lectured in New Paltz last year on coyotes and fishers, and who organized and moderated the conference, asked the panelists to comment on an exceptionally rare incident casting a pall from the last lecture: a habituated coyote attack on a child in California.

Predator conflicts was a topic I'd had the pleasure to correspond with Kays on regarding state agency apprehensions over cougar reintroductions in the Northeast. It's a subject bugging wildlife agencies faced with managing big recovering predators not only in the relative wilds of places like the Adirondacks and the Northeast Kingdom, but in the ironically inviting habitat of the Boston to Washington, D.C. corridor.

Never mind that we'd just seen evidence of radio-collared coyotes in some of our densest suburbs, like Westchester County, laying low during the day, roaming at night through parks, woodlots, and utility corridors, cannily avoiding residential areas. Never mind that the statistical chances of having a run-in with a coyote (like any large carnivore), are rarer than the chance of being hit by lightning. Never mind that vehicle collisions with that cash cow of fish and game agencies, white-tailed deer, seriously injure and kill far more people in North America every year than all other wildlife species combined. When it comes to predators, when it comes to the thinnest risk of pets getting picked off, or a kid being attacked—incidents the public can avoid with a little education and some common sense—wildlife agency reps are acutely concerned with media hysteria and public misperceptions.

The panelists, for their part, understood well the threat. There isn't one, not unless we encourage it. Remind livestock owners to corral their charges every evening and dispose properly of their dead animals;

continued from Page 8

encourage road departments to retrieve quickly road-killed deer; educate pet owners to feed Mittens and Fido indoors and keep them locked up at night; never offer scraps or unsecured garbage to a coyote, and habituation, that bugbear of intra-species conflict, can largely be avoided.

Better we adapt, than start howling for misguided interdiction. Earlier in the year, a Sullivan County sportsmen's group sponsored a second annual competitive hunt meant to rid the southern Catskills of "overpopulating" and habituated coyotes. No data was cited to support the purgative cleansing, just the hint that a plague of coyotes, underfed after gobbling up the available game, were turning to pets and livestock. Kids, of course, would be next. Spurred by weight-related prizes, such hunts target mature, lunker animals—the adults who have learned and teach their progeny how to stay out of trouble—failing to select alleged problem individuals. With the big breeders removed (the real reason behind the hunt recording "scrawnier" coyotes this year, not a reduction in game), juveniles take over the culled territory.

Predator populations are self-regulating. They tend to stabilize at carrying capacity, rising or dropping with prey availability. Reducing the local census for about fifteen minutes, trophy sport hunts accelerate reproduction rates and increase litter sizes, encouraging the very dynamics they are meant to check: density and habituation. Inexperienced subadults left to seed the region are prime candidates for trouble-making, teaching bad habits to the next generation.

Discouraging easy meals and taking out rogue individuals at the source are more effective means of predator management over the long haul than routinely reducing the age of a regional population. Yipping from the edges of pastures and cul-de-sacs, putting an old, New World thrill back in our tamed eastern landscape, seasoned coyotes survive long enough to breed because they understand their boundaries. Would we want teenagers running our world?

On my way back from the conference, coincidently, I noticed a coyote (it's been a terrific spring for coyote encounters) in the early evening light traversing a large field between two homes. Approaching the further house, I wondered where it would go. It got to the bordering treeline, turned away from the house, and melted into the woods.

Christopher Spatz is running a remote wildlife camera study at Minnewaska State Park Preserve. Bear, fisher, deer, turkey, and yes, coyotes, have so far been photographed, but no cougars.

Trapps Peregrine on banding day a few years ago

Millbrook Peregrines

Tom Sarro was waiting to touch base with John Thompson, naturalist at the Daniel Smiley Research Center of the Mohonk Preserve before posting his recent speculations on what was going on cliffside in the Millbrook eyerie.

Most of the peregrine watchers are on a listserve and receive up-to-date postings by eagle-eyed birdwatchers! Sarro, who coordinates the field-work for the peregrine project and is a college professor at Mt. Saint Mary's College in Newburgh, had things to say back in June. It will give you an idea of how difficult it can be to know from day to day what is occurring as we hope for successful mating, parenting, and fledging...ed.

"I have an idea as to what is going on at Millbrook. In speaking with several people prior to yesterday I would say how confused I was and that all the pieces seemed to be there but that none of them seemed to fit. Well, after yesterday's observations I think the pieces have come together.

A little recap of recent observations at Millbrook:

Sunday, June 15 - There were times I thought that I was seeing an immature (1st year bird) along with an adult perched on different portions of the cliff. Other times there were what appeared to be two adults perched on the cliff at the same time. At this point I assumed the lighting made one of the adult birds look darker making me think it was a juvenile. Later in the day we saw possible three falcons flying away from the cliff, flying very aerobatically. Many perches were used, most in the vicinity of "The Old Man" (TOM). There were also numerous aggressive displays.

Monday, June 16 - Observations were similar to the previous day's. Two falcons were observed. Most of the perching was done in the area of TOM with the addition of the 1999 eyrie ledge. One unusual observation (at the time) was a prey exchange in the air, south of TOM. I definitely saw a falcon with prey hanging from its talons and another falcon approach it mid-air.

Wednesday, June 18 - Upon arriving for observations an adult falcon was perched in the "Curved Pine" (CP), below and slightly to the south of TOM. Shortly thereafter a second falcon flew past going south, circled back, and landed about 5' above the perched adult. I immediately zoomed my scope to its highest power, 60x, to look at this new bird. It was definitely an immature bird (very brown streaks on chest, very blue cere, and what looked like tufts of down on the sides of its head [very difficult to make out]). The immature bird flew off the CP first and the adult followed. Wailing could be heard from the north. A falcon was seen flying towards the north and there was either a brief touch-down or ledge exchange at the 1998 eyrie ledge. The bird that left the ledge flew out over the valley like a bullet, flapping quickly and moved past me. About five minutes later an adult falcon landed on a ledge about 100' below "The Pie."

What to make of all this? I now think that on Sunday we definitely had three falcons, two adults and a fledgling. Monday's observation of a prey exchange was most likely between one of the adults and the fledgling. Ratecliff states upon fledging, "Aerial foot-to-foot transfers of prey to offspring so that after a week or so this the normal feeding method". The dark brown, streaked chest, blue cere, and what looked like down on the side of the head indicates a fledgling around 47 days old. If this is the case the egg laying would have taken place towards the end of March or early April. This fits definitely in past timelines for breeding in the Gunks.

At this point I think observations should be made jointly from above and below. This would aid sightings and better aging of the fledgling. If anyone would like to try and coordinate this with me please get in touch."

And now in early August we know a young successfully fledged!

The Eastern Box Turtle (Terrapene carolina): Centenarian in Our Midst

by Joe Bridges

Recently, I was invited by Anne and Ray Smith, Gardiner residents, to search for box turtles on their property. They had been cataloging and tracking the movements of turtles for the past few years. I enthusiastically accepted. Everyone loves box turtles. Finding one is to return to your childhood and relive the excitement of your first found turtle. Within several hours we found four box turtles; three within the first half-hour of searching and one egg-bearing female late in the afternoon intent on seeking a nest site. Two of the box turtles were known to the couple, as they could identify them by their unique shell patterns, which they had photographed two years earlier. Box turtle shell patterns are colorful splashes of various shades of orange forming "crowns", "radiating sun beams" and other artful patterns on each shell segment, all splayed on a darker shell background of varied brown hues. Like fingerprints, no two shell patterns are alike; each one a showcase of individuality.

photo by Joe Bridges

At the end of the search, walking back to the couple's home, I pondered the long-term fate of the turtles we had encountered. For now, the couple's property is sanctuary for about a dozen known box turtles (there may be substantially more turtles on, and bordering, their property), which they monitor with great enthusiasm and sense of stewardship for their welfare. Earlier in the day, before the start of the search, we had been discussing the natural history of box turtles with a small group of the couple's friends, some of whom also participated in the turtle search. I had mentioned that box turtles can live to be 100 years old.

Since there is no reliable way to estimate the age of a turtle beyond about age 25, the evidence for centenarian box turtles is based mainly on turtles found with years of antiquity carved into their shells. While some shell-carved dates may be hoaxes, one valid account of a date-marked box turtle shell is an amusing story. John Treadwell Nichols (1883-1958), a herpetologist at the American Museum of Natural History, date-marked nearly 1,000 box turtles on his Long Island estate in the early 1900s. One of Nichol's turtles, estimated to be more than 20 years old at the time it was marked in 1921, was found in good health on his estate (now the Floyd estate) in September, 2002. Today, many of Nichol's turtles are still being found 60 -70 years later in the same locations where they were initially found and marked. Was it possible that the turtles we observed during our search might eventually live to become centenarians?

The Box Turtle's World

While box turtles have color vision and can detect movement (notably that of potential predators) over a distance of many yards, the vertical world view of a box turtle is limited to a narrow plane which extends about four inches above ground (the distance it can extend its neck upward while standing), to usually four inches below a soft, leaf litter-rich ground surface. In the horizontal plane, its home range is reported to vary from less than 2.5 acres to about 13 acres. The actual size of the home range is determined by the proximity of those habitat features which enable box turtles to fulfill their needs such as overwintering areas, nesting areas, areas which provide food and water and sunlit and shaded habitats in which to warm up and cool down. Most box turtles are reported to use a well defined home range that varies little from year to year. One remarkable example is of a box turtle in Kansas that was found twenty-eight times over a ten year period within about 24-feet of where it was first found! For a turtle that can live to be 100 yrs old, its world may be small, but it is intimately known by the turtle and frequently surveyed both in a seemingly purpose-driven and a randomly exploring manner.

Daily and Seasonal Activities

So how does a box turtle spend its day? The daily or seasonal activity of a box turtle is determined mainly by the interplay of fundamental imperatives — the need to maintain a "comfortable" range of body temperature by avoiding habitats that are too cold and, more importantly, too warm or too dry. Being "cold blooded," the internal temperature of box turtles, like other reptiles, is regulated in large measure by the surrounding temperature; turtles sun themselves to warm to a certain range of temperature which facilitates movement, then when air temperatures are too warm, they seek shade to avoid overheating. Searching for food, searching for a mate, tussling with one another, laying eggs, having a soak, resting and occasionally taking long walks for reasons unknown to us, are the main activities in a box turtle's life.

In our region, the most active time for box turtles is April through June, when courtship, mating and egg laying take place. This is the time we are more likely to encounter box turtles. Each year, following mating, female box turtles may travel hundreds of yards to previously used nesting areas with bare or sparsely vegetated, well drained sunlit soils where they dig a four-inch deep, flask-shaped hole and deposit (on average) four or five eggs. After the hole is back-filled and smoothed over by the bottom of the shell, it is nearly impossible to detect the nest site. Unfortunately for the box turtle, nest predators such as raccoons can sniff out turtle nests and will readily predate them. In areas where raccoons are prevalent, their predatory behavior can have a substantial impact on the age structure of turtle populations, skewing it toward one with many older and fewer younger turtles. If all goes well, hatchlings (about the diameter of a Ritz cracker) emerge in September or October, or late developers may overwinter in the nest chamber and emerge the following spring.

After June, adult male and female box turtles tend to hunker down in shallow soil pits called forms which they excavate in shaded shrub thickets and forests, and to restrict their searches for food (slugs, mushrooms and wild strawberries are top menu items) to early morning and late afternoon or during and shortly after rain showers. When temperatures are high and humidity low, box turtles may move to the fringes of shaded wetlands and seek relief in cool, moist soils and shallow water. In the fall, turtles move to overwintering areas.

Box Turtles, continued from previous page

Box turtles show considerable fidelity to overwintering sites, which may also be used during the summer to escape unfavorable weather conditions. Suitable overwintering sites are protected from wind, usually face south or west to better intercept winter sunlight, and have soft soils or a dense layer of leaf litter into which turtles can dig to a depth of about four inches or more as colder weather advances. With diligent searching, box turtles can be found on snow-free days in the dead of winter with just a small part of the tops of their shells exposed at the surface of frozen ground. Although box turtles may be killed in winter during long periods of extremely cold weather, they possess an uncanny physiology which enables them to tolerate freezing. Box turtles have been reported to tolerate the freezing of more than half their body water for several days with no evident ill effect. The heart may also stop beating and the lungs have been reported to become a mass of icy tissue under winter conditions. Yet, when spring arrives box turtles emerge from their winter retreat to begin another period of activity.

The Future of Box Turtles

Once considered a common turtle, the New York State Department of Environmental Conservation (NYSDEC) has recently designated the eastern box turtle as a "special concern" species; a species which is "...not yet recognized as endangered or threatened, but for which documented evidence exists relating to their continued welfare in New York State." The NYSDEC has also listed the box turtle as a game species with no open season. As such, the box turtle is a State protected species which may not be hunted, taken, pursued, collected, harassed, etc., without a special permit or license.

Worldwide, box turtle populations are in serious decline. The causes are many and additive in the scope of their impact. By far, habitat loss and modification, mainly as a result of human activities such as ecologically unsound, broad-scale land clearing and land use practices (notably ill-timed mowing [at least from the turtle's perspective] and improper use or application of herbicides/pesticides), collecting and commercial trade, but also from roadway and rail-line mortality, predation by raccoons and free-roaming dogs, fire and severe weather. All of these impacting elements pick away at the long-term stability of box turtle populations. Habitat fragmentation resulting from poorly planned sprawl development with little consideration for wildlife needs and behavior, may not only diminishes the size and connectivity of important box turtle habitat patches, but also creates more "edge" relative to the interior area of the habitat patch. This "edge effect" of habitat fragmentation tends to make core areas within the habitat patch more susceptible to adverse weather conditions. Decreased protection from wind and drying conditions, as well as increased predation by "edge specialists" such as raccoons, may cause turtles to wander greater distances in search of larger and better protected patch areas.

A disturbing trend within some box turtle populations in the northeast is the apparent scarcity of turtles less than 10-20 years old, despite concentrated searches in established habitats by experienced herpetologists. In Westchester County, a similar situation exists for the wood turtle to the point where some herpetologists believe that this species may be "functionally extinct" within the County and undergoing a non-cyclic population decline. How vulnerable are our local box turtle populations to the same fate? Like most late-maturing species which produce few offspring annually, they are probably very vulnerable. So it is up to us to plan our future communities wisely with an emphasis on protecting large continuous areas of sustainable biological richness (hubs) with sufficiently protected wildlife travel corridors that connect to other hubs. Efforts to protect the box turtle will protect other important species of wildlife as well.

There is something about our kind that values antiquity—enduring things that link us to the past, like stone walls in a forest, Renaissance architecture and yes, for some of us, old box turtles. Enduring things also ground us in the present and enrich the future course of our lives. The world will not end if we lose the box turtle, but our lives will be less enriched, the world one species poorer, and some thread in the web of life—the importance or significance or which we may not understand, will have been broken. Box turtles have been around for at least 25 million years—longer than our kind—and deserve our best conservation efforts to assure their welfare into the coming millennia.

A simple test of successful long-term box turtle stewardship could be realization of the possibility that a child today could find a box turtle and years later, with diligent searching, find it again and introduce it to his/her grandchild and to know it survived a century.

Suggested Reading

Conant, R. and J.T. Collins. 1991. *Reptiles and Amphibians: Eastern/Central North America*. Houghton Mifflin. Boston, MA.

DeGraaf, R.M. and M. Yamasaki. 2001. *New England Wildlife: Habitat, Natural History and Distribution*. University Press of New England. Lebanon, NH.

Dodd, C. K. 2001. *North American Box Turtles: A Natural History*. University of Oklahoma Press. Norman, OK.

Ernst, C.H. et al. 1994. *Turtles of the United States and Canada*. Smithsonian Institute Press, Washington, DC.

Gibbs, J.P. et al. 2007. *The Amphibians and Reptiles of New York State*. Oxford University Press, NY.

Joe Bridges, a Gardiner resident, is senior biologist with Matthew D. Rudikoff Associates, Inc., an environmental planning and consulting firm in Beacon, NY. He holds a PhD in botany from Columbia University, and is an active member of the Board of Directors of the Mohonk Preserve. Joe has been rock climbing and hiking in the Gunks for nearly 40 years.

Anzac the Box Turtle Tracker

A most extraordinary dog lives in Gardiner. His name is Anzac, he is four and an Australian Cattledog. Anzac has two tracking titles conferred on him by the rigorous standards of the American Kennel Club. His owner Anne Smith, a fanatic box turtle enthusiast, discovered her Gardiner property was a hotbed of turtle activity. As a dog trainer she decided tracking might have a practical aspect and she would hone Anzac's skills by teaching him to track turtles. Anne, a member of the Gardiner/Shawangunk Habitat Group has been studying box turtles on her property for years and wanted an easier way to monitor their activities. Keep on tracking, Anne and Anzac!

Photos of Anzac and various turtles by Anne Smith

Bringing Climate Change Closer to Home

by Shanan Smiley, Research/Curatorial Assistant, Daniel Smiley Research Center

Because of the Mohonk Preserve's long-term weather and natural history records, we have been the lead local and regional resource for specifically how our climate, and reciprocally how the flora and fauna, have changed in the Shawangunks over time. We share our data with the Northeast Regional Climate Center at Cornell University, and Columbia University's Lamont Doherty Earth Observatory. We are a part of the Hudson River Estuary Biodiversity Advisory Committee and the Hudson Valley Climate Change Network. Since the climate change article in the Fall/Winter 2006 *Shawangunk Watch* and the bird arrival article in Summer 2007, several things have changed.

First, let's talk climate. From our Mohonk Lake Cooperative Weather Station, reporting weather records to the U.S. Weather Bureau and the National Weather Service since 1896, we see that the average annual temperature has increased 2.7°F in 112 years. In 2006, the average was 2.3°F, so in just 2 years almost another half-degree increase. What exactly does that mean? To put this in perspective, I turned to the words of an award-winning scientist who has been recognized for his innovative and pioneering research on the operation of the global carbon cycle within the ocean-atmosphere-biosphere system, and its interaction with climate. A friend of Daniel Smiley's, Wally Broecker of Columbia University's Lamont Doherty Earth Observatory, has visited the Preserve's Research Center several times. He analyzed ice cores from Antarctica and Greenland and sediment cores from the oceans. He found that the temperature difference between the last glacial age about 20,000 years ago and the last warm-up period about 6,000 years ago amounted to only 4°F. In 1979 he warned, "If anthropogenic [human made] carbon dioxide warms the earth by the same amount, we will have succeeded in making a change about half as large as that which occurred when the great ice sheets which covered virtually all of Scandinavia and Canada shrank to oblivion."[1]

Summers are growing hotter. For June and July, at least five of the "top 10" hottest years have been since 1990. For August, the four hottest years on record have all been since 2001. During the summer season the number of days 90°F and above has drastically increased; the top four years have all been since 1999. In 2002 there were a staggering 27 days 90°F or above. Prior to 1989 the highest record was only 10 days.

The growing season is now an average of 10 days longer than in 1896. The last spring frost is an average of 6 days earlier, and the first fall frost is now an average of 4 days later. Somewhat related, the timing of peak fall foliage is later. Peak of color used to be Columbus Day weekend, now it's typically a week later.

Since 1896, winters have become warmer, with less consistent snow pack, and more rain. From the total days at or below zero, over 40% occurred between 1896 and 1925. Annual snowfall has increased an average of 18 inches since 1896 but has decreased by 3 inches since 2006. Annual precipitation has increased an average of 5.2 inches, up by half an inch since 2006. We are experiencing more damaging, heavy rainfall events, usually in the spring, which can result in widespread flooding. In short, our climate on the Shawangunk ridge is becoming warmer and wetter.

Changes Since 1896

	2006	2008	Deviation
Average Annual Temperature	2.3 F	2.7 F	+0.4 F
Growing Season	8 Days	10 Days	+2 Days
Annual Snowfall	21 in.	18 In.	-3 In
Annual Precipitation	4.7 In	5.2 In	+0.5 In

So, what does all this mean for the species on the ridge? We've noticed the most obvious changes with the timing of plant bloom and with the range (both geographic and seasonal) of birds. Because of warmer temperatures, early ephemeral wildflowers like Hepatica (top) bloom an average of 20 days earlier, and Bloodroot (bottom) an average of 14 days earlier than they did in the 1930s.

Some southern birds that didn't exist in the Shawangunks have come north, which is the case for the Brown-headed Cowbird, Northern Cardinal, Tufted Titmouse, Turkey & Black Vultures, Red-bellied Woodpecker and the Acadian Flycatcher. With the exception of the Acadian Flycatcher and Cowbird, these species not only moved north seasonally, they have become permanent year-round residents. Additional species that now no longer migrate consistently are the Robin, Song Sparrow, Chipping Sparrow, White-throated Sparrow and the Flicker. Since the Bird Arrival article in 2007, which was reporting data up to 2006, we have consistently seen Black Vultures, Chipping Sparrows, White-throated Sparrows, and Flickers year round. The Sparrows and the Flicker, are a bit of a puzzle. Only a few individuals have been consistently reported over the winter. There is not an "over-wintering population," in contrast to a species like Chickadees. Dan Smiley saw the Sparrows throughout the winter sporadically starting in the late 1950s and early 1960s. He questioned it then. What are they doing? Is their range in transition, are these individuals coming south from the far north and getting "caught" here for the winter? It continues to be a puzzle.

What is in store for the future? If this warming/wet trend continues, over time many of the more northern species like the Hemlock and Sugar Maple will decline, likely giving way to an Oak, Hickory, and Pine-dominated forest.[2] As the habitat changes, so will the species.

According to a report released last year by the Union of Concerned Scientists, if the rate of emissions continue as they are today, by 2070 we will have the climate of South Carolina and Georgia[2]. Many "northern" species will have to move farther north in order to survive. Efforts are being made in many places to create and maintain migration corridors, allowing this northern movement to occur.

Will these predictions come to fruition? Only time will tell. But, in August 1979 it was said, "The current belief is that rising levels of carbon dioxide will simply overwhelm any cooling brought on by sunspot activity, increases in air-borne particles, or other phenomena that might cause long-term cyclic changes. Global temperature has yet to rise, however, and probably won't until the 1990s. Concern about anthropogenic (man-caused) carbon dioxide is not new. In 1938, a British scientist pointed out that burning fossil fuels was changing the composition of the atmosphere, and he unearthed several theories from

continued from previous page

the turn of the century suggesting that higher CO2 levels would lead to higher temperatures."[1] "Warming might even lead to melting of glacial ice at the poles. Although the melting processes are not fully understood, and most scientists believe a total melting and subsequent raising of the sea level by 18 feet would take 300 years, some feel the Antarctic ice cliffs might fall into the sea after only a short period of higher temperatures."[3] Little did they know how correct their predictions would be.

One thing is certain in this time of change. Whatever the change may be, the research team at the Mohonk Preserve will continue to put forth the great effort necessary to document and carefully study all that is around us be it weather, plant, bird, mammal, amphibian, reptile, or insect.

Until then, live as lightly on the land as you can. As Melissa Everett of Sustainable Hudson Valley said at the recent Mohonk Consultation's Climate Change Forum, "Of course, Reduce, Reuse, and Recycle, but also Rethink and Revitalize." I will add one more to the list: Reconnect with this land that you love.

1 D. Sleeper, The Conservation Foundation Letter, August 1979.

2 Union of Concerned Scientists, Confronting Climate Change in the U.S. Northeast: Science, Impacts, and Solutions, 2007.

3 C.F. Baes, Jr., et al., American Scientist, May-June 1977.

Shanan has her Bachelor of Science degree in biology from Montana State University. She moved to New York from Montana four years ago. She started out volunteering at the Daniel Smiley Research Center and is now the Research/Curatorial Assistant.

Friends Appeals Decision in Lawsuit Against Gardiner ZBA

Once again Friends of the Shawangunks must appeal a decision handed down by Ulster County Supreme Court. The ruling by Justice Christopher E. Cahill on February 6 is just another in a string of puzzling decisions emanating from this court. The court ruled, in a suit filed by Friends of the Shawangunks against the Gardiner Zoning Board of Appeals and Werner and Joan Wustrau, that the ZBA had not acted inappropriately in granting the Wustraus four variances allowing them to construct a 3,130-foot driveway. Friends contended that the ZBA violated Gardiner's Shawangunk Ridge Protection (SRP) zoning regulations adopted in 2006, and that it also failed to abide by the New York State Environmental Quality Review Act (SEQRA). This is the first test of these new regulations, and the ZBA's decision would set a precedent that would seriously impact the ridge.

Friends has been criticized by some Gardiner residents for "attacking the Wustraus." Our argument is not with the Wustraus. They are simply trying to maximize what they can get out of their property. Our fight is with the ZBA. The Wustraus were named in the suit because not naming the property owners would have resulted in the suit being thrown out.

The Wustraus own a landlocked parcel of more than 40 acres that extends into the area between the Millbrook and Bayards cliffs. They have a right-of-way to their property but wanted to construct a driveway to a proposed house site. The location of the property and the steepness of the slope to the site present a number of problems that prevented the proposed driveway from meeting the SRP standards. The ZBA was asked to granted four variances because:

◆The proposed driveway was 3,130 feet long, but the code sets a limit of 2,500 feet.

◆The SRP regulations prohibit construction of more than 250 feet of driveway on slopes of between 20% and 30 %; the Wustrau's proposal called for 1,031 feet of driveway on such slopes.

◆The proposal also called for construction of 200 feet on slopes greater than 30%, although the regulations prohibit construction on slopes of more than 30% under any circumstance.

◆The grading and cutting required was well in excess of the 8-foot-wide limitation.

◆The violations of SEQRA included what is known under SEQRA as "segmentation," and is clearly prohibited because if a developer breaks a project down into small enough pieces, it is possible that no individual piece will violate the law when the project as a whole would.

How a judge can decide that the ZBA is acting properly when it ignores a prohibition on construction under any circumstance boggles the mind. Add to that all of the other issues Friends has raised, and it is no wonder that so many decisions of Ulster County Supreme Court are appealed.

The appeal is scheduled for argument during the September term, which runs from September 2 to September 12

Meeting Yesterday's Surveyors

by Norm Van Valkenburgh

Surveying in the Shawangunks isn't a whole lot different than surveying anywhere else amongst the ridges and hills of the Hudson Valley and the Catskills. Boundary lines everywhere run uphill except in the Shawangunks where they run up cliffs which is worse. The biting insects of spring are no more pesky here than elsewhere. Neighbors claim more land than they actually own wherever you go. No matter where the surveyor finds himself (or herself), the bogs and swamps are just as wet, the humid days of summer are just as disagreeable, the streams of spring just as deep, the winds of winter blow just as cold, and the multi-flora rose has just as many thorns. And so it goes

Photos by Patty Matteson

If there is a uniqueness about surveying the Shawangunks it's in that damm rock that's all over the place and the footprints early surveyors left-literally-on the landscape. Today's surveyors set iron pipes or reinforcing rods to mark property corners. In time, of course, these rust into oblivion or are pulled up by an irate neighbor. No one then knows where the corner is or remembers the surveyor who set them or cares who he was. However, the early surveyors who roamed the crags hereabouts had a sense of forever and marked their corners accordingly. And why not? With all that rock laying around, permanence was easy to come by.

The Nineteen Partners Tract, except for that part that drops northwesterly over Rock Hill, lies entirely in the Coxing Kill watershed. The southeasterly line of the tract runs from The Trapps along "[t]he highest part of the steep rocks that front east to Shawangunk" ending at “Maggunk or Paltz Point," the prow of cliff at Sky Top. The easterly boundary follows the line between the towns of Rochester and Marbletown crossing Mohonk Lake as it goes and the westerly line runs partly along the "Foot Path to Shawangunk."

Norm points to the rock heap where the old surveyors had marked a boundary

The tract was granted by The Trustees of Rochester to eighteen "Proprietors" in 1770. One of those held two shares but later conveyed one share to another not of the original eighteen; thus, the tract of Nineteen Partners. In 1799, the tract was partitioned into nineteen lots by three commissioners "appointed for that purpose." Whether John Cantin, Abram Bevier, and Jonathan Bruyn actually surveyed the lines of the lots is questionable; however, they certainly directed how the tract was allotted.

All this is interesting but isn't necessarily unique. What is unique about the Nineteen Partners Tract is that at least one corner of each of its nineteen lots was marked by a numbered or lettered stone. For instance, a corner common to Lots 5 and 10 was described in 1799 as "a stone marked XVII." We found this at the base of a witness tree bearing marks dating back to the original partition. A close look at the slab stone finds the Roman number XVII.

The common corner of Lots 4, 5,10, and 11 was described in 1799 as "a heap of stones put up near a point of rocks marked with a letter A. The heap of stones is behind the old guy and the letter A, barely visible, is just below his left hand. It becomes clear, however in a close-up (left).

Finding surveyor's marks dating back more than two centuries is like striking gold or finding a lost treasure. It's easy then to sense the presence of that earlier colleague and hear him speaking in a language only we two can understand.

In the years since 1799 other surveyors have left similar markings in the Shawangunks. In the far northern reaches of Mohonk Preserve, an 1815 deed called the southerly corner of a parcel of land being conveyed by Isaac H. Craig to Moses Keator as "a large stone or rock marked F.S., the North East corner of John Stokes land." When John Stokes conveyed his "homestead farm" to James Stokes in 1832, the deed described that corner as "a rock marked F.S. in the easterly corner of said homestead farm." The rock is, indeed, large. The S. stands for Stokes; however, we haven't traced any Stokes forebear with a given name beginning with F. Whoever he was, F.S. left his mark on the "large stone."

In 1898, Albert K. Smiley acquired two parcels of land extending northwesterly from the old New Paltz and Wawarsing Turnpike up "the steep rocks of the Shawangunk Mountains" to the highest part of said mountains." The lower common corner of the two parcels is the northwesterly corner of New York State's Multiple Use Area on Route 299. The 1898 deeds described this corner as "a hole drilled in the center of a letter S cut in the Easterly point of a large rock." The large rock is just of Route 44/55 below the hairpin or horseshoe turn. The drill hole isn't very deep but the letter S (for Smiley) is clear. (center photo above)

The boundary line between lands of Mohonk Preserve on the upper side of Near Trapps, Bayards, and Millbrook ridges and private lands below is variously described in early deeds as running "along the top

of the mountain" or "along the top of Shawangunk Mountains." When such line was first run in 1939 by Loyal M. Nerdahl, he laid it out "along the water that divides the highest part of the mountain."

As I discovered from following him all over Mohonk Preseve's landscape, Nerdahl was a meticulous notekeeper, being particularly precise when describing the marks he left behind. Every angle point of his boundary lines that fell on a ridge of rock was marked with a small X chiseled in it, especially when he ran that line "along the water divide" on Near Trapps, Baryards, and Millbrook. After all, nearly everything up there is rock.

When I ran that line in 2001, I recovered (found) about eight of every ten of Nerdahl's angle points. It seemed as if he was talking to me as I went along.

One angle point I didn't find puzzled me. Nerdahl's field notes described it as a "Stone heap at S.W. end of rock ridge." I knew I was at the correct rock ridge because I had come to the same place running his bearings and distances from Xs marking angle points on either side. I saw no sign of a "Stone Heap,"—no discoloration of the rock where a stone heap might once have been; no spot on the rock bare of lichen growth; no stones scattered off to the side. I sat down on the rock ridge and pulled out the copy of Nerdahl's field notes I had brought along. It was then I noticed the stub of a dead pitch pine off to my right. A notch had been cut in the base of it long ago and a tack was driven in the bottom of the notch. I looked again at the field notes. Nerdahl recorded the stone heap had been set "9.13 [feet] SW from…tack in 8" P. Pine." So there I was, over sixty years later sitting next to Loyal Nerdahl as he wrote his notes on September 2, 1940

All this communing with vintage and even ancient surveyors can sometimes be a bit disconcerting—as it was last summer. I was surveying a parcel of land in Haynes Hollow off the Dry Brook Valley in the town of Hardenburgh. The back line of the parcel was on top of the ridge (naturally) along the boundary of State-owned land. When we finally got up there, we found an old, well-blazed line. The place seemed familiar to me; I knew I had been there before. A week of so later, when I picked up the map of the survey of the State line, I realized I had been on the crew that had blazed the trees along that line over fifty years before. Worse yet, I was the only one of that survey crew of four who was still alive. I wasn't just visiting with surveyors of old as I had done so many times before, I had reached the age when I was talking to myself.

Norm Van Valkenburgh, sleuth, surveyor and Shawangunk legend might be checking a bearing or might be talking to himself?

Norm Van Valkenburgh has been surveying in the Shawangunks and Catskills for more than fifty years. He is also the author of fifteen books, four of these being murder mysteries featuring Ward Eastman, a surveyor/sleuth. These include Murder in the Shawangunks *and* Murder in the Catskills. *His latest work is a children's educational book* America's First Wilderness: New York State's Forest Preserves.

Signs of Yesterday's Surveyors

Notches

Notches are often cut in the base of trees to mark a boundary

photos by Patty Matteson

X Marked the Spot

Chiseling an X into the hard Shawangunk conglomerate was a surveyor's way of marking a corner.

Roman Numerals

"A common corner of Lots 16 and 17 simply described in 1799 as a stone marked XVII. We found this at the base of a witness tree bearing marks dating back to the original partition. A close look at the slab stone finds the Roman number XVII"

A Heap of Stones Around a Now-Dead Tree

photo by Wendy Smiley

Friends Goes Online

www.Shawangunks.org

Check out Friends' new website at **www.Shawangunks.org** It should be launched by the time you are reading this newsletter. It has a back issue of our newsletter *Shawangunk Watch,* links to dozens of Shawangunk sites, 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.

Please Consider a Contribution

There is still work to be done protecting Open Space

Thank You For your Support

YES, I want to continue my support

q YES, I would like to make a contribution

q	Benefactor	$ 250
q	Patron	$ 100
q	Family Member	$ 25
q	Individual	$ 15
q	Other	$ ____

I would like to make an additional contribution of:
q$10 q$25 q$50 q$100 qOther $ ____

Amount to go to The Shawangunk Conservancy Land Acquisition Fund $ ____

TOTAL ENCLOSED $ ____

Please make checks payable to *Friends of the Shawangunks* or *The Shawangunk Conservancy*. Contributions are tax-deductible.

Name (please print)

Street or Road

City **State** **Zip**

q This is a change of address

E-mail address

q This is a change of e-mail

Matching Grants: If the organization for which you work has a matching grant program, just send us the forms and we will do the rest. IBM matching checks must be made out to The Shawangunk Conservancy.

Mail contributions to: *Friends of the Shawangunks*, P.O. Box 270, Accord, NY 12404

FRIENDS of the SHAWANGUNKS
Preserving Open Space Since 1963

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.

Friends of the Shawangunks
P.O. Box 270
Accord, NY 12404

e-mail: info@shawangunks.org

Board of Directors

H. Neil Zimmerman, President
Town of Rochester

Richard Geldard
Town of Rochester

Keith LaBudde,
Town of Rochester

Steve MacDonald, Treasurer
Town of Marbletown

Annie Mardiney, Secretary
Town of Rosendale

Tom Nozkowski, Vice President
Town of Marbletown

Annie O'Neill
Town of Gardiner

Patty Lee Parmalee
Town of Shawangunk

Maureen Radl, Vice President
Hamlet of Cragsmoor

Larry Randall
Highland Falls

Malcolm Spector
New York City

Phil Gitlen, *General Counsel*

Friends Newsletter

Editor: Annie O'Neill
Design and production:
Annie O'Neill,

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.

Printed on recycled paper

© 2008 Friends of the Shawangunks