Shawangunk WATCH

Friends of the Shawangunks and The Shawangunk Conservancy

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New Trail for Stony Kill Falls

Land Acquisitions: Past, Present and Future

Sam's Point Fire Aftermath

Tillson Lake Redux

PROTECTING OPEN SPACE IN THE SHAWANGUNKS SINCE 1963

Photo: John Hayes

CLOVE VALLEY PARCEL FOREVER PROTECTED

by Elaine M. Laflamme

The Shawangunk Conservancy (TSC) has closed on the purchase of the Clove Valley parcel, which hereafter will be called the DeGraw parcel, after the family that owned it for nearly a century. The acquisition of this five acres was made possible through the generosity of three first-time donors and the many of our members who responded to our funding request for this purchase.

For generations visitors to Copes Lookout and other vantage points at Mohonk have admired views of the Clove, the cliffs on the far side, and Minnewaska in the distance. Large swaths of the Clove are permanently protected by Minnewaska State Park Preserve, Mohonk Preserve, and Open Space Institute, through outright ownership or conservation easements. TSC is proud to add its acquisition of the DeGraw parcel to the efforts of others to protect the viewshed from Copes Lookout.

The DeGraw parcel is located on the eastern side of the Clove, near the Undivided Lot Trail, on a long-forgotten, unused, former woods road. In the eighteenth century several old "wood lots" were laid out along it. Most but not all of the wood lots were later purchased by the Smiley family when assembling the 7,500-acre Mohonk estate. The old woods road is now overgrown and, in some places non-existent, though the previous owner does remember traveling it with his father and hunting on the property. The DeGraw parcel, bounded by Mohonk Preserve on two sides, does not enjoy a deeded right-of-way.

Although small, the parcel is a microcosm of what we love about the Shawangunks — slab rock, pitch pines, and a small valley through which flows a seasonal stream. The Coxing Kill, the major stream that drains Lake Minnewaska and which flows through the Clove, is nearby. All of these features, as well as shared boundaries with Mohonk Preserve, make the DeGraw parcel a good fit for TSC's Small Parcel Acquisition Program (see "Small Parcels" article in this issue).

INTRODUCING: THE NEXT LAND DEAL!

Following close on the heels of our purchase of the DeGraw land is our latest venture, the seven-acre "B" parcel. This is a stunning piece of property on Rock Hill, not far from DeGraw, with dramatic views of Cope's Lookout and Eagle Cliff. It is bounded on two sides by protected lands. In keeping with our policy of protecting the privacy of the land owners, we are not identifying them until after the purchase.

As with the DeGraw purchase, TSC has entered into an option agreement which gives us several months to buy the parcel. At the end of that time, if we feel we haven't raised enough money, we will decide whether or not to go forward. We have adopted, as general policy, to raise funds ahead of purchases. We expect to pay $21,000, but the survey, environmental assessment, and closing costs will bring the final cost to around $26,000. So once again, we are appealing to your generosity and love of the land.

It may seem like as though transaction has come quite quickly after the DeGraw deal, but in fact, both of these lots have been on a "wish list" for many years, and have just coincidentally been offered for sale in a relatively short period of time.

Donations can be made using the form at the end of this newsletter. Write "B Parcel" on the check or form if you want your contribution to be used exclusively for this purchase. If donating with a credit card via www.shawangunks.org, please send a brief email to FOSandTSC@gmail.com as well, indicating that your gift is for the B Parcel.

Photos: John Hayes

Small Parcels, Large Impact *by Elaine M. Laflamme*

Thirty-one years ago Friends of the Shawangunks (FOS), quietly and without fanfare, embarked on a land buying program. Until then, FOS had been strictly an advocacy organization. It monitored activity on the ridge, responded to threats by mobilizing the public to action, petitioned and prodded government authorities and resorted to the courts when other strategies proved ineffective. In March of 1987, with the fight to save Lake Minnewaska successfully concluded, FOS expanded its capacity to protect other places in the Shawangunk Ridge by forming a land buying affiliate which it named The Shawangunk Conservancy (TSC), Inc. FOS and TSC share the same Officers and Directors but maintain distinct approaches to protecting the Shawangunk Ridge. FOS relies on advocacy and TSC acquires land.

TSC's initial land purchases were few and far between. In 1989 it acquired the Cross parcel on Rock Hill Road, the first land purchase made by the group. (The importance of that acquisition is discussed below.)

Three years later, in 1992, TSC made its second purchase, at a tax sale no less. The organization quickly scraped together what they thought might be the sale price of the desired parcel and prepared to bid at auction. On the way to the sale, concerned that they might not have enough cash on hand to meet the deposit requirement, one of the TSC directors found an ATM and started pulling cash from his personal account. That is how TSC purchased the Rappaport parcel on Knob Hill Road, which it later transferred to Mohonk Preserve.

TSC picked up the pace of acquisitions in 1993 with two land deals, Bowers and Browne. The Bowers acquisition together with the earlier Cross acquisition demonstrates the critical role TSC plays in permanently protecting the Shawangunks through its small parcel acquisition program. By identifying small but key parcels and purchasing them as they become available, TSC helps create assemblages that protect the visual beauty and ecological integrity of the Shawangunk Ridge. Open Space Institute (OSI) recently included those two early purchases, the Bowers and Cross parcels, in a much larger assemblage of protected, undeveloped lands as part of the Shawangunk Ridge Greenway project.

Ramey Parcel • Photo: John Hayes

The Cross Parcel
Photo: Greg Miller, courtesy of Open Space Institute

Rock Hill Road in the vicinity of Cross and Bowers
Photo: Greg Miller, courtesy of Open Space Institute

Returning to 1993 and the Browne parcel purchased that year, we see yet another example of the tactical role TSC can play in land acquisitions. In the Browne deal, TSC partnered with two other groups to forever protect a segment of the Near Trapps climbing area. It was TSC as the contract vendee that initiated the efforts to acquire this 30-acre parcel at the southern end of the Near Trapps which included cliff and cliff-top land. The Access Fund, a national group dedicated to protecting climbing areas, together with TSC provided all of the funding. Mohonk Preserve then acquired title directly from the seller by stepping into the shoes of the contract vendee. Belay on!

TSC took a hiatus from 1994 until 2006, when it helped purchase the Beck parcel, a 16-acre parcel on the northern edge of Minnewaska State Park Preserve. OSI purchased the Beck parcel using TSC funds and then transferred it to the State Park. Five years later, TSC stepped in with an $85,000 commitment towards the purchase of Joppenbergh Mountain after the Town of Rosendale was unable to fulfill its share of the deal. Partnering with other organizations to acquire larger tracts of land proved to be effective, and we followed that model with our next project, the 49-acre Ramey parcel, which was purchased by Mohonk Preserve with funds from TSC and others.

More recently, TSC has returned to the acquisition of smaller parcels with last year's purchase of the Alder Lane property (see *Shawangunk Watch* August 2017). Thanks to acquisitions big and small, Minnewaska State Park Preserve has more than doubled in size over the past two decades and now includes such iconic places as Sam's Point, Stony Kill Falls and Awosting Reserve. Small acquisitions such as Alder Lane provide gateways to and buffers for these fantastic places. Just this September, TSC closed on its most recent acquisition – the DeGraw parcel (a.k.a. the Clove Valley parcel in the Shawangunk Watch Spring and Summer 2018 issues) and is already working on its next purchase, the seven-acre "B" parcel.

TSC is developing its small parcel acquisition wish list and raising funds for future acquisitions as they become available. What makes a particular parcel a good target for acquisition? In determining what to preserve, TSC asks such questions as: Is the parcel an in-holding (privately owned land inside the boundary of a preserved area)? Is it contiguous to or does it buffer already preserved land? Can it be a part of a larger assemblage? Will it prevent ecological fragmentation? Is it part of a stream corridor? Does it have cultural or historical significance? Does it have high resiliency (see *Shawangunk Watch* December 2017)? Is it on the ridge, or is it in an iconic viewshed? The objective of TSC's small parcel acquisition program is to make small acquisitions that significantly impact its mission, which is to protect environmentally sensitive lands in the Shawangunk Mountains.

Science is teaching us that not only do people want to be in nature but they need to be in nature, at least some of the time. As more people crowd into urban areas, they turn to nature for a sense of well-being. The Shawangunks are a finite land mass with incredibly beautiful vistas and stunning natural features that appeal to both the desire to be in nature and the instinct to build on the highest ground. When suitable properties become available, TSC must be in a position to act quickly or there is the risk of fractured views, human encroachment, fragmented wildlife habitat and degradation of the area's resiliency to climate change.

Tillson Lake Dam, Redux

by Elaine M. Laflamme and Janet Kern

Our last newsletter included an account of the proposal by the Palisades Interstate Park Commission (PIPC) to drain Tillson Lake, remove the Tillson Lake dam because it no longer meets safety requirements, and restore the area as a natural extension of the Palmaghatt Kill corridor. It also introduced the efforts by Friends of Tillson Lake, Inc. to stop PIPC from draining the lake and requiring it to repair the dam instead. At this time, FOS remains a neutral party and has not taken a position on this issue. We are now revisiting the controversy with additional history and considerations.

History of the Dam or Dam History

Tillson Lake dam is an earthen embankment 308 feet long (including the spillway) by 39 feet high with a central concrete core wall according to the July 1981 Phase 1 Inspection Report by the Dept. of the Army, NY Dist., Corps of Engineers ("1981 Report"). A copy of the 1981 Report can be found at www.dtic.mil/dtic/tr/fulltext/u2/a106657.pdf. That report surmises that the dam was constructed in the 1920's or early 1930's for Hassey A. Tillson and classifies the dam as small in size and having high hazard potential.

Photo: Elaine M. Laflamme

The 1981 Report recounts that one side of the dam was overtopped and breached in September of 1938. In response, the core wall was repaired with reinforced concrete and both the core wall and the embankment to the right side of the spillway were raised two feet. In 1955, the other side of the dam was overtopped and breached. The core wall and the embankment to the left side of the spillway were raised two feet, thereby evening out the dam.

In 1981, the Corps of Engineers found the dam to be "unsafe, non-emergency" and the spillway "seriously inadequate." The NYS Department of Environmental Conservation (DEC) issued a directive to repair the dam. In July 1983, the then-owner drained the lake entirely. DEC ordered the owner to clean up the dead fish, put bales of hay below the spillway to filter silt and seed the lake bed with grass seed and return it to pasture. And so things remained for 12 years. In 1995, under new ownership, the dam was repaired, the lake restored, a metal fence erected around the lake, and "no trespassing" and "private property" signs posted on the surrounding land.

In 2006, New York State purchased 2,518 acres known as the Awosting Reserve, and added the acreage to Minnewaska State Park Preserve under the responsibility of the NYS Office of Parks, Recreation and Historic Preservation (OPRHP) and PIPC. FOS advocated vigorously for this outcome. The court included the Tillson Lake property in the acquisition at the last minute.

The 2010 Minnewaska State Park Preserve Master Plan ("2010 Master Plan") contemplates repairs to the dam but they are assigned a second level priority. The timing and extent of those repairs come into clearer focus when, at some point prior to March of 2018, DEC inspected the Tillson Lake dam and called for repairs, as it no longer met the safety requirements for this type of dam. Exactly what repairs, we don't know, and the projected costs that have been publicized appear to be little more than guesstimates – as high as $7 to $9 million according to PIPC and from $1.33 to $5.34 million according to Friends of Tillson Lake. At publication, neither group has provided documentation for their divergent estimated costs to repair the dam.

It is incumbent on DEC, OPRHP and PIPC to make all Tillson Lake dam inspection reports readily available and to provide a detailed analysis of the cost of repairing versus the cost of removing the dam and restoring the Palmaghatt Kill corridor.

Who Gives a Dam

According to the 2010 Master Plan, the Tillson Lake area "has a relatively low level of use." County Executive Mike Hein, in a letter of support to the Tillson Lake community, noted that the lake "represents a unique recreational and environmental resource that is both underutilized and of a completely different character than the ridge lands of Minnewaska." In preparing this Redux, we searched but did not find any estimate of the number of people that visit the lake. The size of the parking lot for Tillson Lake, approximately ten cars, suggests that the lake is enjoyed by nearby neighbors more so than the public at large. To put this into perspective, it should be noted that more than 400,000 people visited Minnewaska State Park Preserve last year.

In assessing whether or not to drain Tillson Lake, it's imperative to know who uses it, when and how. Given that the 2010 Master Plan anticipated $5 million in short term (5-10 years) capital improvements for the entire Park, millions of dollars for dam repairs is a substantial amount. Return on investment analysis would require that such a capital improvement benefit a large segment of the public.

Fish, Fauna and/or Flora

When considering the environmental impact of whether to drain or not to drain, there are more questions than answers. Riverkeeper supports removal of the dam based on concern for human safety, biodiversity and fiscal prudence. In June of 2018 Friends of Tillson Lake commissioned an environmental report, but it was specific to the wetlands at Tillson Lake. And although the report lists examples of the kind of wildlife supported by the wetlands, it did not address whether restoring the stream corridor or keeping the lake is more beneficial to the environment and wildlife.

Is meaningful, robust stream restoration possible? Are there endangered or threatened fauna or flora or amphibians whose well-being/survival would be optimized by a healthy stream? Would the stream also provide better wildlife "corridor" access between the Ridge lowlands and upper elevations? Is it true that equally valuable habitat has evolved in and around the lake? If so, which species are involved? What is the impact of draining the lake on those species? What, in short, is the balance of *environmental* benefit? A scientific study comparing the environmental outcomes of each course of action is essential. If DEC or PIPC has undertaken any study or evaluation of the environmental impact of repairing the dam or restoring the Palmaghatt Kill corridor then they should share those findings with the public. If they have not undertaken any science-based assessment, then as stewards of these public lands, they should do so now.

This is not a choice between a lake and a Walmart. It is rather a choice between still water and flowing water, between silent water and riffling water, between canoes and waders. We are privileged, and conflicted, in contemplating two sweet possibilities.

SPECTACULAR NEW TRAIL IN MINNEWASKA

A new trail has opened in Minnewaska State Park. It runs from the end of Shaft 2A Road to the top of the 87-foot-high Stony Kill Falls, about 3/4 mile one-way. The cost of over $334,000 was provided through an NYS Environmental Protection Fund grant awarded to the Palisades Parks Conservancy by the NYS Office of Parks, with contributions also coming from the Palisades Interstate Park Commission. Tahawus Trails LLC of Accord NY anchored the year-long effort with volunteer help from the NY-NJ Trail Conference, the Bruderhof and the Jolly Rovers Trail Crew. There are 265 stone steps, six iron rungs, two significant bridges and an impressive viewing platform. The new parking lot is not yet open. FOS is hoping this will be resolved by next spring.

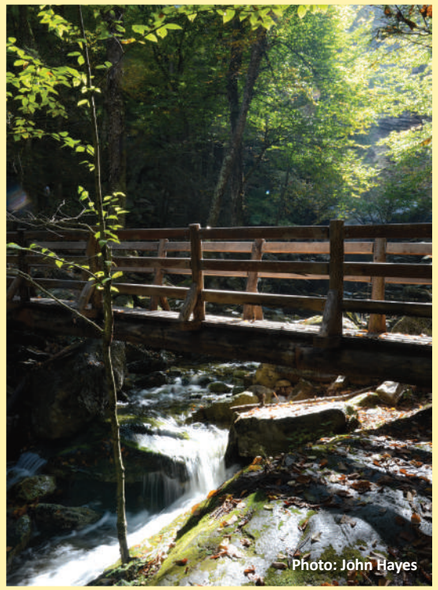


Photo: John Hayes

Factoid: "Shaft 2A" (a.k.a. "Shaft IIA") refers to a vertical shaft that leads hundreds of feet down below the parking lot to the New York City Delaware aqueduct water tunnel. The area that you walk through on the way to the falls looks as though it was once a gravel bank, but is actually stone that was excavated from the shaft.

NOTES FROM THE SOUTHERN SHAWANGUNKS

By Susan Erny

A 34-acre, four-megawatt solar farm is the latest Dragon Springs (DS) proposal at the southern end of the Shawangunks. Given the DS pattern of failing to adhere to environmental codes, any new venture is cause for concern. Fortunately, the site is not on land along the ridge nor is it within the gated and restricted DS Falun Gong complex, so, hopefully, the Town of Deerpark will be able to monitor the construction. The Environmental Assessment Form requires safeguarding of a small stream as well as precautionary actions to protect the presence of the endangered Indiana bat. On November 14th there will be a Public Hearing at the Deerpark Town Hall concerning this solar farm.

Another Dragon Springs' proposal, designed by their engineer John Fuller, is a traffic loop to be constructed across from the Guymard Turnpike entrance. According to residents living on or near this hilly, narrow, winding road, it is a very dangerous design. One member of Deerpark Rural Alliance (DRA), the watchdog group, noted that DS has a pattern of building driveways without adherence to code, and with little resistance from town officials. This particular plan was designed to accommodate huge buses.

Remember the 2,000-foot long, twelve-foot-high covered walkway that DS constructed without permit approval? It *is* being dismantled (but has not yet been completely removed). The town gave them a year to comply. One Deerpark Rural Alliance (DRA) member remarked, "It is hardly worthy of being noted as a 'win'. Compared to all the big items (such as the rehearsal building's 8th story) which have been built without permits and have been allowed to keep, this was like a token." Keep up the good fight, DRA!

Susan is a former board member of Friends.

Sam's Point Fire: Effects Two Years Later

By Jessica Reker, Student Conservation Association — AmeriCorps Intern at Sam's Point

When you think of wildfires, what words come to mind? Do you come up with words like rejuvenation, new life, and new growth? These are the words that are used to describe fire in ecosystems that require it. Not all fires bring forth destruction. In many cases nature flourishes after fire. Fires naturally occur in nature, and many ecosystems, including the globally rare dwarf pitch pine barrens that are found at Sam's Point Area of Minnewaska State Park Preserve, have adapted to be dependent on fire.

Pitch pines (*Pinus rigida*) have unique adaptations that allow them to not only survive a fire, but thrive after one. Their thick outer bark allows them to withstand burning while protecting the inner layers that are vital for the tree to survive. They also have serotinous cones (pine cones covered in resin) which need fire to melt the resin, allowing the cones to pop open and release their seeds. Both adaptations help while the fire is active. After the fire, pitch pines can resprout new needles. Together these three adaptations are what allow the pitch pines to recover after fire. Other common plants in the pine barrens, such as blueberries (*Vaccinium spp.*) and huckleberry (*Gaylussacia baccata*), while not dependent on fire, are able to easily resprout and grow well after fire.

Naturally-caused fires are not the only fires that the dwarf pitch pine barrens have endured. There is evidence of fires started by humans on the Shawangunk Ridge dating back 9,000 years.[1] The first people to set fire intentionally were Native Americans, who had many reasons for starting them. From the 19th to the mid-20th centuries, summer berry pickers lived on the mountain picking blueberries and huckleberries to sell to city merchants. They set fires frequently, normally in the fall after all the berries were picked. Because berries thrive after a fire, outcompeting other species, the berry pickers were ensuring a good crop the following year. After the berry pickers left the Ridge, fire was suppressed around Sam's Point for over 70 years. No fires were purposely set, and any wildfire that did occur was put out as soon as possible.

Today, while fire is still suppressed in places on the Ridge, some fires are purposely set to help maintain the unique ecosystems. These prescribed burns are managed by professionals who have extensive knowledge of fire behavior and how to control, contain, and shape the results for ecological benefit.

At 2:18pm on April 23, 2016, a hiker on the Verkeerderkill Falls trail at Sam's Point Area called in a small fire to the local 911 operator. It was a dry and windy day, creating the perfect conditions for a fire to take hold and spread. By the end of the day the fire was producing 30-foot flames and had engulfed over 10 acres. After five days, with 280 people battling the fire, a heavy rain helped to suppress it. A total of 2,028 acres were burned.

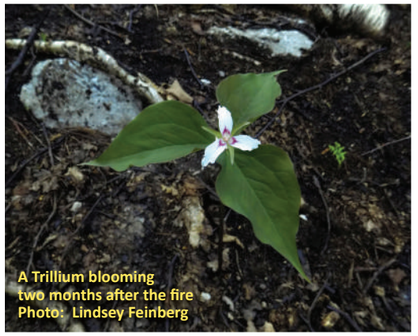
With the long history of fire suppression at Sam's Point, and the high intensity/severity of the April 2016 fire, no one was sure what to expect for the dwarf pitch pine barrens recovery. Would it come back, or would a new successional forest take its place? To answer these questions, 20 monitoring plots were set up randomly throughout the burned pitch pine barrens to study regeneration after the fire. Four photo points were also set up to visually document how the revegetation process occurred.

During the summer of 2016, wildflowers like *Trilliums spp.* and bunchberry (*Cornus canadensis*) appeared in the blackened and charred landscape. As the season progressed the berry bushes came back and the understory started to look green and full again. Simultaneously, the pitch pines were also recovering, sprouting new needles basally (from the roots of the trees), epicormically (from the trunk of the tree), and apically (from the crowns). All of this was good news.

The summer of 2017, more growth was seen. Huckleberry, blueberry, and sheep laurel (*Kalmia angustifolia*) continued as the dominant understory plant species. Dispersed throughout these were bunchberry, wild raisin (*Viburnum cassinoides*), bracken fern (*Pteridium aquilinum*), and gray birch (*Betula populifolia*) saplings. Another interesting species to note was rhodora (*Rhododendron canadense*), a plant that produces beautiful fragrant pink flowers in the spring and is a threatened species in New York state. Hidden among these plants, mainly in low wet depressions, were pitch pine seedlings. The seedlings looked like bright green miniature Christmas trees tucked around the pitch pine barrens.

May 19, 2016
Photo: Sam's Point Staff

September 14, 2018
Photo: Sam's Point Staff


A Trillium blooming two months after the fire
Photo: Lindsey Feinberg

In 2018, two summers after the burn, the toll the fire took on the pitch pines is beginning to show. The understory of the barrens is back in full stride. Huckleberry, blueberry, and sheep laurel have created a dense mat of vegetation, creating a sea of green that spreads as far as the eye can see. While the understory is recovering, the pitch pines have not had the same fate.

After three summers of data collection, nothing definitive can be said about the future of the dwarf pitch pine barrens. But we can say what has happened so far, and based on other long term studies try to predict what might happen.

Pitch pine trees on average live 78 years, with a typical range of 12 to 170 years.[2] At Sam's Point, pitch pines in the burned area range in ages from 30 to 75 years. As pitch pines age, they are more likely to succumb to fire. This is due to having less energy to put into resprouting.[2] Since Sam's Point has an older pitch pine population, it would be natural to see more trees die off, especially because of the high burn severity most experienced. In many fires that occur in pitch pine barrens numerous trees survive but are 'top-killed', so they no longer produce apical growth, and produce either epicormic or basal growth.[2] At Sam's Point, we are seeing a large majority of trees continue to die each year as shown in the graph below. This means the forest needs new seedlings to regenerate the dwarf pitch pine barrens.

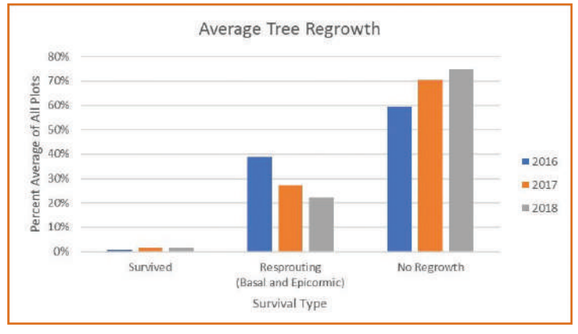
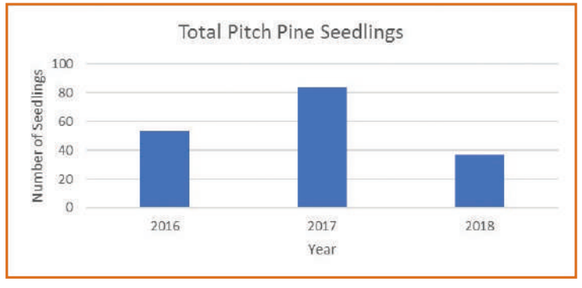


Figure 1. Average tree survivability of all 524 trees within all twenty monitoring plots. Survived means the tree is sprouting apically, the normal type of sprouting a tree has. Resprouting means the tree is sprouting basally (from the roots) or epicormically (from the tree trunk). Most of the trees after the fire showed basal sprouting. As the seasons progress, more trees are not producing new growth and dying as a consequence.

Pitch pine trees release their seeds during a fire when the resin is melted off the serotinous cones. The seeds require a very specific set of environmental circumstances to be able to take hold and grow. One environmental factor a pitch pine seed needs is to fall into mineral soil,[2] the nutrient rich layer of soil that is underneath a forest's duff layer. (Duff is the accumulation of detritus and other matter on the forest floor, like pine needles, leaves, and such.) For the mineral soil to become exposed, the fire must burn the duff layer off. A second factor is soil with a high moisture holding capacity. A third factor is high levels of light; the seedlings do not do well in shady areas. Finally, the seeds need to fall where they are hidden and covered quickly by soil to prevent high predation by wildlife. Eastern towhees (Pipilo erythrophthalmus) and American red squirrels (Tamiasciurus hudsonicus) both love to eat the seeds. A study in the New Jersey pine barrens showed that one week after a wildfire, no seeds were left on the soil surface due to animal predation.[2] Even after seeds germinate and start to grow, they can be predated upon by white-tailed deer (Odocoileus virginianus) who love to munch on them.

Basal Sprouting from a fallen pitch pine
Photo: Sam's Point Staff (6/14/16)

At Sam's Point our seeds did not get all of the environmental factors needed for maximum germination. Due to many years of fire suppression, a very thick duff layer formed in the pitch pine barrens. The layer was too thick for the fire to compeletly burn up, thus the mineral soil that the seeds need was not exposed for them to fall into. However, many of our seeds did fall into small depressions containing soil with high moisture holding capacity. And much of the canopy was burned off, allowing a great deal of sunlight to reach the forest floor. Unfortunately, since most of the seeds did not get covered very quickly by material, they were eaten by animals. Hundreds of eastern towhees were seen around Sam's Point directly after the fire, and evidence of red squirrels was abundant. A factor that may have helped the seeds is the rain that helped to put out the fire. One can speculate that the rain pushed some seeds further into the duff, allowing them to reach mineral soil and germinate. The graph below shows the number of seedlings found each year at our monitoring plots.



[Figure 2. Total number of pitch pine seedlings found in all twenty monitoring plots each year during July monitoring.]

Pitch pine seedlings take three to five years to grow around two feet. After this point, they start to grow faster.[2] As we are only three summers out from the fire, it is hard to say what will become of the barrens. One conjecture I have is that there will still be dwarf pitch pine trees, but they will not be as dense as they were before. Another conjecture is that the forest will become a mixed type consisting of *(cont. on Pg. 8)*

pitch pines, birch, and scrub oak, as is found in other parts of the country. The only way to truly know what will happen to the dwarf pitch pine barrens is to keep monitoring and watch how they recover.

Fire is vital for this ecosystem to survive and is important for the overall health and endurance of the dwarf pitch pine barrens. However, large high intensity wildfires like the 2016 Sam's Point fire can cause large scale tree mortality. The 2016 fire offers new opportunities for research and new findings. The Sam's Point Area staff, along with the partnerships developed with outside researchers, will continue to study the effects of the fire.

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1. *Laing, Charles. Vegetation and Fire History of the Dwarf Pine Ridges, Shawangunk Mts., New York. 1994.*
2. *Gucker, Corey L. 2007. Pinus rigida. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: https://www.fs.fed.us/database/feis/plants/tree/pinrig/all.html [2018, September 28]*

FOS/TSC ANNUAL MEETING

In addition to delicious bagels, members who attended our annual meeting on October 14 were treated to a comprehensive review of the activities of the Open Space Institute (OSI) by the indefatigable Bob Anderberg. Bob showed, with his detailed maps, how OSI is coordinating with other organizations to purchase land and link together rail trails into an amazing regional system.

Elaine Leflamme then recapped the history and rationale of land acquisitions by FOS and TSC, and described our future plans for land protection (see "Small Parcels, Large Impact" on page 3).

After the meeting, a group took a walk on the Wallkill Valley Rail Trail, ending up on the Giants Ledges, where they enjoyed the autumn colors.

CORRECTION

Three color photos accompanying the Robert Larsen article in the last issue (Summer 2018) were missing photo credits. They were by Robi Josephson and appeared on pages 4 and 5.

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❑ **PATRON $100**

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Shawangunk WATCH

is the publication of Friends of the Shawangunks and its companion organization, The Shawangunk Conservancy. This issue was edited and assembled by Friends board members.

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Joe Raiola

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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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The latest financial report of Friends of the Shawangunks and The Shawangunk Conservancy may be obtained by writing to the Office of the Attorney General, Charities Bureau, 120 Broadway, New York, NY 10271, or by writing to us at the above address.

FRIENDS of the SHAWANGUNKS
Preserving Open Space Since 1963