



Friends of the Old Croton Aqueduct

Newsletter

No. 41, Summer 2012

Aqueduct Volunteers Celebrate "I Love My Park Day"

Leslie Yu Walter

Did you know that grape vines and poison ivy are *not* the main culprits strangling trees across Westchester? Or that delicious pesto can be made from the young tender leaves of the invasive garlic mustard, ubiquitous on the Aqueduct trail? On May 5, as part of the statewide I Love My Park Day, over 35 volunteers discovered upfront and close the world of invasive plants that are overwhelming native vegetation at trailside. They worked hard on the trail in Cortlandt, about two miles south of the Croton Dam, to show their love for "New York's skinniest state park."

The vine-cutting event, which drew neighbors and trail walkers from Crugers to Hastings, was the first effort of its kind sponsored by the Friends of the Old Croton Aqueduct. Enthusiasm ran high after the introductory mini-master class in identification of invasive plants and removal techniques given by Robert DelTorto, Volunteer Coordinator of the Bronx River Parkway Reservation Conservancy's program (www.vinecutter.com).

Teaching from the back of his pickup, Bob displayed impressive sample vines – some thicker than a wine bottle and decades old! He showed how to quickly distinguish the invasive porcelain berry and bittersweet from each other and from grape and poison ivy. "Grape is good, plus this species is in fact native," Bob said. "Don't cut grape unless it's tangled up with more invasive vines."

Volunteers of all ages tackled the vines with their newfound knowledge, pulled and chopped invasive plants and collected trash. More volunteer muscle helped the three crew



Bob DelTorto of vinecutters.com with a specimen of bittersweet, one of the vines putting Aqueduct trees at risk. (Photo by D. Shure)



Robert DelTorto showing volunteers how to cut vines and identify invasive plants. (Photo by D. Shure)

members of Old Croton Aqueduct State Historic Park—Tony Failla, Jeff Litwinowicz and Nick Genua—haul and chip some 10 truckloads of large tree branches that have been littering the trail edges ever since the last two storms wreaked serious havoc there. Gary Ricci, Park Manager of the Aqueduct, skillfully integrated volunteers, equipment and his crew. Gary deserves special kudos for obtaining a chipper for the day—the Taconic Region of State Parks owns only one, which rotates among all the parks in the region.

The volunteers discovered a full deer carcass between Quaker Bridge Road and the trail, plucked a discarded cash register from the woods, chopped barberry and multi-flora rose bushes and pulled enough invasive biennial garlic mustard to fill 21 giant trash bags. The youngest volunteer, Aristan Florin McBride, age 13, and his mother Mary dragged and bagged an entire demolished bathroom's worth of tiles up from a steep hillside!

"To see so many people working together to improve the trail is a dream come true," said Diane Alden, a Cortlandt resident, Aqueduct activist and the organizing power behind the day's events. Looking at the visible results of their labor, many volunteers expressed interest in attending recurring work sessions on the Cortlandt trail section.

The Friends sponsored this event as part of the first I Love My Park Day, a joint initiative between Parks & Trails NY and the New York State Office of Parks, Recreation and Historic

Preservation. Besides the success on the trail, a valuable outcome for the Friends was the new connections made with New York-New Jersey Trail Conference, the Croton Conservation Advisory Council and the Westchester County Parks Department. A similar event on the trail closer to the dam is in the planning stages for November; stay tuned.

Home Depot of Hawthorne, NY, generously supplied discounted tools to the Friends. Bob DelTorto and Jeff Main of Westchester County Parks jointly lent more tools as well as expertise. The Town of Cortlandt permitted temporary street parking, providing volunteers with access to the work site. Friends board member Lesley Walter was co-organizer of the day's event; board member Charlotte Fahn provided support also.

The volunteers who came out to take care of one small section inspire everyone who loves the Aqueduct. May the cutting force be with us all!



Volunteers Sam Rinzler and his grandmother, Maria McAndrew, getting their tools at the Friends' tent, set up on the Aqueduct in Cortlandt for the May 5 work session. (Photo by L. Walter)

The Old Croton Aqueduct in History and Culture

Ed Brody

VII. The City Outgrows the Aqueduct (1907-1965)

This continues the story from the Winter 2011 newsletter (#40) that covered the period from 1862 to 1907. New York City's population and its use of water grew much faster than anticipated when the Old Croton Aqueduct (OCA) was designed. Work started on a new Croton Aqueduct in 1885 and a new dam in 1892. When the new dam was completed in 1907 the OCA dam was submerged in the new reservoir. But water did continue to flow through the old aqueduct into the city.

Transformation of NYC

During this next 60 years, New York City was transformed into the world center we know today. From 1900 to 1960, its population more than doubled to 7.8 million. Paved roads, bridges, tunnels, buses, trolleys and trains linked the city and suburbs; Westchester population nearly quadrupled to 808,000.

One noticeable change was the development of modern municipal services. A high-pressure hydrant system was completed in 1908 and pump trucks were motorized the following year. As fire fighting became more of a science, the city opened a Fire College and a Fire Prevention Bureau. Street cleaning also evolved. Motorized street cleaning vehicles were introduced in 1918; until then horses were still adding to the mess to be cleaned.

Housing conditions improved as new laws regulated tenement design; a flushable toilet in a separate "water closet" was now required for every two apartments. In the 1930s slum clearance and government housing projects began. People moved to the boroughs and Manhattan's population actually declined.

With a growing interest in public health, inspections and clinics increased. It was no longer enough to have fresh water. The quality of the water became important. In 1910, after several years of wrangling, the Jerome Park Reservoir adopted

the recently developed use of chlorine as a disinfectant.

People ceased to remember that fresh water had been a novelty just 50 years earlier. The engineering feat that had stopped the spread of cholera and other diseases and lessened the threat of uncontrollable fires had lost its luster as a civic achievement.

More water

The last of the major structures in the Croton Waterworks plan, the Croton Falls Dam and Reservoir, was completed in 1911. Yet despite 12 major reservoirs draining 375 square miles the Croton watershed was inadequate. Even before the



Demolition of the central High Bridge arches, 1927.

Courtesy of the NYC Municipal Archives.

plan was fully implemented another set of tunnels and reservoirs were being built, this time taking water from the eastern Catskill Mountains 100 miles away. (In 1917, the year the Catskill project was finished, the OCA was shut as a precaution for World War I. For the next three years the First Provisional Regiment of the NY Guard protected the entire city water supply.¹) The Catskill system was later expanded to deliver 555 million gallons per day to the city by 1927.

Even this was not enough. After considerable litigation,

in 1937 the city began to pipe water from the Delaware River tributaries in the western Catskills via yet another series of reservoirs and tunnels until another 800 million gallons per day were being drawn.

Now the city was temporarily satisfied. Along with these new sources the New Croton Aqueduct still supplied water from the Croton Reservoir and the OCA tagged along providing 35 million gallons per day.

A time of removal

With the expansion of the city many of the above ground aspects of the OCA had been moved underground. Now major structures that were no longer in use were removed. The Murray Hill Reservoir had already been torn down in 1900 to make room for the New York Public Library.

The eastern half of Jerome Park, once intended for a filtering plant, was no longer needed so it was given to the city in 1912 for the Kingsbridge Armory and later Walton, DeWitt Clinton and Bronx Science High Schools, and Hunter (now Lehman) College. Over the years, other parts of the Jerome Park Reservoir were stripped off to become public parks.

In 1920 the Mould Fountain, itself a replacement for the 1842 City Hall Fountain, was moved to the Bronx for use as a planter. When the OCA re-opened after World War I water was rerouted from the High Bridge to the newer tunnel under the Harlem River and demolition of the iconic High Bridge was proposed; it was now an obstacle to large vessels. Public outcry led to a compromise and in 1927 the five central masonry arches were replaced by a single steel span so that larger ships could pass under the bridge. Water flow then resumed via the High Bridge.

The massive arch in Westchester that gave Archville its name was taken down in 1924 as a traffic hazard and replaced by an inverted siphon² under Route 9.³ The original York Hill Reservoir, stretching from 79th to 86th street in Central Park, was closed in 1925 and made into the Great Lawn from 1938 to 1940. The 1842 Union Square fountain was demolished when a subway station was constructed in 1934. The triple arch bridge over Burnside Avenue was removed in the 1930s and replaced with an inverted siphon.⁴ In 1936 the High Bridge

Reservoir was made into a public swimming pool and its gatehouses removed; and in 1949 the High Bridge Tower was decommissioned and its pumping buildings razed although the tower itself remained.

By 1958, after only 116 years of use, the OCA was deemed inefficient to operate and stopped sending water to Manhattan, although it did continue to send some water to Ossining until 1965. On the 86th St Central Park Reservoir transverse, the three-story Gothic stone Keepers House of 1866 had already been demolished in 1935. Today only the Dobbs Ferry Keepers House of 1857 still stands on the trail. It was decommissioned in 1960 and vacated two years later but fortunately not demolished.⁵ And fortunately most of the ventilators, weirs and gatehouses were spared.

On September 13, 1965 the head gates of the Old Croton Aqueduct were closed.⁶ What would be the future of the Old Croton Aqueduct?



There was a squatters colony in the emptied York Hill Reservoir during the early 1930s. Courtesy of the New York Public Library

References: L. Cooper, "A Walker's Guide to the Old Croton Aqueduct" (2nd ed. 1992, NYC Dept of Environmental Protection); Historic Preservation Studio II, *The Croton Waterworks* (2011, Columbia University GSAPP); M. Hunter, *Croton Water and the Manhattan Landmarks* (2004, Berlin); G. Koepfel, *Water for Gotham* (2000, Princeton U. Press); National Register of Historic Places Registration Form for the Jerome Park Reservoir

(2000).

Footnotes

1. Newsletters #10 (December 2001) and #27 (Summer 2007) describe their memorial service in Sleepy Hollow.
2. An "inverted siphon," technically not a true siphon, is a set of pipes that dip below an obstacle to form a U-shape.
3. A simpler bridge was built in 1998 to restore the trail connection. A memoir by John Middlebrooks in Newsletter #31 (Winter 2008) has pictures and discussion.
4. Robert Kornfeld in Newsletter #19 (Winter 2004) discusses this
5. The Friends have been doing essential maintenance and trying to adapt this building as a Visitor Center. See Robert Kornfeld in Newsletter #40 (Winter 2011) for a detailed description.
6. Linda Cooper, "A Walker's Guide to the Old Croton Aqueduct" (2nd ed. 1992, NYC Dept. of Environmental Protection), p.6.



Untermeyer Gardens Link to Aqueduct Cleared

Great news from Yonkers for Aqueduct walkers! The city's Department of Parks, Recreation and Conservation, in partnership with the Untermeyer Gardens Conservancy, have cleared the entire carriage path connecting the upper, formal areas of the park with the Aqueduct trail.

Untermeyer is listed on the National Register of Historic Places and is best known for its formal gardens, marvelous Hudson River views, and colorful history. It is one of the perennially popular side trips from the Aqueduct. In recent years, however, access from the Aqueduct trail at "Liongate" (see feature 51 on the text side of the Friends' map) had been difficult, with entry to the carriage path blocked by an impenetrable wall of wildly overgrown vegetation. (Photo by C. Fahn)

Irvington Assisted Living Project: Impact on the Aqueduct

The Friends of the Old Croton Aqueduct have submitted comments to the Irvington Planning Board on a project proposed for a site abutting the Old Croton Aqueduct State Historic Park. The eldercare facility, planned by the Continuum Company, would be built at 30 Broadway, a four-acre parcel now occupied by the Foundation for Economic Education. The site is immediately north of the Aqueduct crossing high above Station Road. Trail walkers traversing this section now see a long brick wall with open sky above it. The wall marks the property line between the west edge of the project site and the green Aqueduct corridor.

Because the plan calls for building closer to the boundary wall than allowed by the village's current setback requirements, the new buildings would not only jut well above the wall but would appear to loom over the Aqueduct—"a

complete change in the character of the walker's experience here," states the Friends' letter. Calling the proposed construction "too visible, too massive, and too close to the Aqueduct property line," the Friends call for a scaling back and redesign of the site plan to lessen the impact.

Continuum also seems to be proposing a change in the village's zoning code that would reduce the code's required Aqueduct buffer from 50 ft. to 30 ft. for all projects, not just this one. The Friends urge the village to reject this change, noting that "a 50-ft. buffer helps to preserve the character of the Aqueduct in the face of constant new development.

The Friends neither support nor oppose the project itself. Rather, we urge officials to consider in their deliberations the impact on the Aqueduct, a National Historic Landmark actively enjoyed not only by Irvington residents but also by visitors from throughout the county and the wider metropolitan region. — C. Fahn

Electronic Music Composer Inspired by Sounds of the Aqueduct Tunnel

Katharine Gates

Ever since the days of the Hudson River School, the landscape of the Rivertowns has inspired artists' attempts to capture on canvas our unique golden Hudson River light or the classical drama of the Palisades cliffs. Walking the Old Croton Aqueduct trail today, you might still encounter latter-day *plein-air* painters working in that age-old visual arts tradition. But if on a recent weekend you saw a small woman atop a telescoping ladder dropping a microphone into one of the ventilators on the trail, you witnessed an entirely different form of artistic process in action.

"When I received a phone call last December from a young woman telling me she wanted to record the sounds inside the aqueduct, I asked myself 'What sounds?'" recalls Friends President Mavis Cain. "The whirr of bats' wings? The ghosts of past workers on the aqueduct? A message from John Jervis!?" Nevertheless, always ready for anything aqueduct-related, Mavis and Elisa Zazzera agreed to open the weir chamber in Ossining to electronic music composer Paula Matthusen. "After an hour of 'silence'—except for our occasional whispers—with Paula crouched on the floor with her sound equipment, and computer and with Elisa taking photos, the project was not much clearer to us... but we were hooked on what might happen!" says Mavis.

"I've been recording sounds related to various historical architectural spaces in New York and using them to create soundscapes," explains Matthusen by phone from Inwood. "A soundscape is the unique acoustical signature of a location. Each space has its own particular qualities or 'colors' determined by the materials of construction, the shapes of the spaces and their interactions with the outside world."

Matthusen, Assistant Professor of Music at Wesleyan University and the recipient of numerous awards, including a Fulbright Scholarship, is a composer of what is sometimes called "electro-acoustic" music or "sound art," which often uses "found" or recorded sounds instead of performers on instruments as the raw material of the work. The high-quality recordings of unique sounds become the "soundmarks"—the audio equivalent of brushstrokes—of a composition. Her compositions have been described by *The New Yorker's* Alex Ross as "entrancing," and Steve Smith of *The New York Times* highlighted her "vivid imagination" in a review of one of her concerts.

Matthusen began her sonic explorations of architecture and history last year at the Cloaca Maxima (the ancient sewer in Rome) and the Atlantic Avenue tunnel (the first subway in New York City). But it wasn't until she began listening to the Old Croton Aqueduct tunnel that Matthusen realized she had found her greatest muse. "I was surprised how the different materials of the construction of the Aqueduct tunnel — the granite, red brick masonry, cement — each one yields a very different sound. The granite is a little more porous; when we were recording where the roof was granite we got sounds of water dripping through the



Paula Matthusen prepares to drop a microphone into ventilator #10 to record the sounds of the Old Croton Aqueduct tunnel.

granite into the aqueduct after rain."

At one point during her tour of the Weir, Matthusen accidentally recorded a snippet of Mavis' voice echoing in the tunnel. "Her voice sounded beautiful in the space," says Matthusen, enthusiastically. She played back the recording of Mavis' voice and then recorded the sound of that recording echoing in the space. She then played back this recording and documented that sound again. She repeated this process of recording copies over and over, in a technique developed in the 1960s by composer Alvin Lucier. "Eventually what happens is that the original material is obscured, but what you end up being left with is the resonant frequencies," Matthusen explains. "The Friends are so passionate—using this recording was a way of acknowledging the commitment of people in this way...the interaction between past and present."

A few weeks later, Friends Vice President Robert Kornfeld took Matthusen and her assistant Néstor Prieto on a day-long tour of the trail, from the Old Croton Dam to many of the most easily accessible ventilators. Kornfeld loves exploring the aqueduct, “especially with people that have particular interests,” he says. “I had never thought what the acoustical personality of the aqueduct would be like. The different ventilators have a very different character acoustically, depending on their location. The dam had an incredible sound, as if the water pouring down the spillway has a resonant frequency with the whole dam. The whole thing hums. It’s just a completely different way of experiencing the system that we had never thought of.”

Part of the thrill comes from the discovery of a hidden world beneath our feet. At the end of the long day, Matthusen sat down to listen to the results. “At one point, we were right by a school. There were children running around, busses going by, a typical day in the neighborhood,” she explains. They took a telescoping ladder and leaned it up against the ventilator. Then they mounted a microphone on a long boompole and held it over the ventilator and slowly lowered it into the tunnel. “At one moment, you’re surrounded by daily life and then you’re descending into this mysterious moment of discovery. There’s a whole other world underground. It was exhilarating.”

A few weeks ago, Matthusen played back all of the ventilator recordings she had so far into the acoustic space of the High Bridge Water Tower, thanks to the collaboration and support of the NYC Department of Parks and Recreation, in particular from Chief of Operations Namshik Yoon and Associate Urban Designer Ellen Macnow. “I wanted to bring the sonic terrain of the distance traveled by the aqueduct to an appropriate destination point.” Paula’s work is about opening oneself up to listening in new ways. “I’m trying to think about the

Aqueduct in a different way—to show that the spaces themselves are still active in a manner that extends beyond the original use or purpose of the structure, but nonetheless reveals an acoustical liveliness of the space.” These captured sounds will become the raw material of an electronic composition that may or may not be performed with live musicians. The working title of her current composition is “Eden’s arch of promise bending,” after a lyric in the original Old Croton Aqueduct Ode that was performed in 1842 when the aqueduct was first opened. “I liked that even on its opening the OCA had a song written for it! It was a transformative moment in the city’s history, a backbone had been constructed.” Matthusen’s composition will have its premiere at Ear to the Earth Festival hosted by the Electronic Music Foundation in October 2012 in New York City. Original support for her project stems from a commission by the Electronic Music Foundation with support from the Jerome Foundation.

You can read more about Paula on her website, <http://www.paulamatthusen.com>. You may also listen to Matthusen’s “resonant frequency” recordings of the Weir Chamber on our own website at: <http://www.aqueduct.org/paula-matthusen>.

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Please let us know if you would like to volunteer.

For inquiries about Old Croton Aqueduct State Historic Park or to report trail conditions, call Park Manager Gary Ricci at 914-693-5259; mailing address: 15 Walnut Street, Dobbs Ferry, NY 10522.

Friends Annual Meeting 2012

The Annual Meeting was held in the Warner Library, Tarrytown, on March 25 at 2.p.m. Two new board members, Katharine Gates and Lesley Walter, were elected and the following members were elected for an additional two-year term: Edward Brody, Mavis Cain, Fred Charles, Laura Compagni-Sabella, Holly Daly, Charlotte Fahn, Ruth Gastel, Joseph Kozlowski, Constance Porter and Tom Tarnowsky. Karen Schatzel, after many years of service, retired from the board.

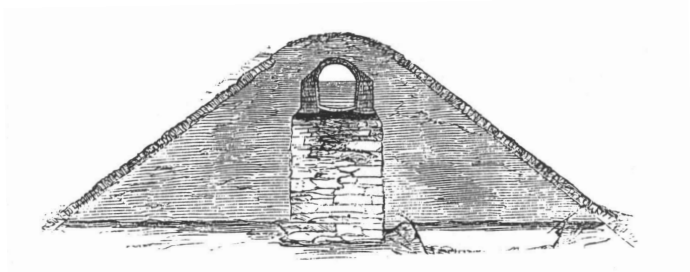
Mavis Cain, president, reviewed the year’s major achievements, including the improvements at Cedar and Main Street in Dobbs Ferry and the clean-up and opening of the restored trail section south of Lamartine Ave. in Yonkers.

The guest speaker was John Cronin who has dedicated himself to environmental issues for more than 35 years, in particular to the cleanup of the Hudson River. Cronin recounted the history of the clean water movement from its beginnings in the 1960s through today.

The meeting ended with excerpts from Paula Matthusen’s “Sounds in Remembered Spaces,” based on recordings of sounds in underground spaces including Aqueduct ventilators.

Friends of the Old Croton Aqueduct
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Dobbs Ferry, NY 10522

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Newsletter: Ruth Gastel, *Editor*. News items, reminiscences, and comments welcome: 914-479-1414 or ruthg@iii.org or by mail c/o the Friends.

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*Mercy College volunteers turned out in force on April 20th to clean up the section of the trail between the College and Cedar Street.
(Photo by G. Ricci)*

Friends of the Old Croton Aqueduct is a private, non-profit, volunteer organization formed to protect and preserve the Old Croton Aqueduct. The Friends work to raise public awareness of the Aqueduct and trail, and to secure the resources that will enable this historic greenway to remain unspoiled in perpetuity. *Address:* Keeper's House, 15 Walnut St. Dobbs Ferry, NY 10522-2109; *telephone* 914-693-4117, www.aqueduct.org.

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