Groton Open Space Association News, Spring 2012, Volume I, No. 1

gosa news

How It All Began: A Brief History of GOSA

Haley Farm pond circa 1898

Looks Can Be Deceiving! See Syma Ebbin's article, page 8, on water quality in the Baker Cove watershed.

Haley Farm pond now

Inside This Issue

A Message from Joan Smith, GOSA President

Sandy Van Zandt, Joan Smith, and Sidney Van Zandt at the site of a 1,000-gallon oil tank removal.

Welcome to our first edition of *GOSA News*! We will use this new forum to share news, compelling stories about our environment, and volunteer opportunities and accomplishments. *GOSA News* will be mailed electronically to members and all interested persons in the spring, fall and winter and will be posted on our website www.gosaonline.org. *GOSA Instant,* a one-page announcement, will periodically alert our members to time-sensitive and special events. The newsletter will have an in-depth feature article in each issue. Board member Syma Ebbin, Ph.D provides the initial one with a firsthand review of stormwater impacts to Baker Cove. In "Sidney's Corner," Sidney Van Zandt reflects on the founding of GOSA. Volunteer activities will also be highlighted. We encourage members, students, scientists, educators and others to submit articles, photos, maps and artwork relating to environmental preservation, education and advocacy.

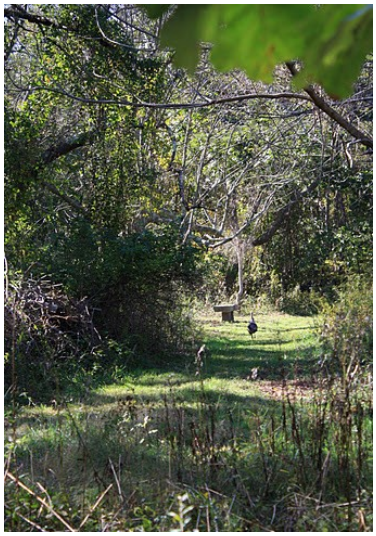
The year 2011 was extraordinary for GOSA. It took us two months from the October 2010 Department of Energy & Environmental Protection (DEEP) grant announcement to procure a bridge loan, raise matching funds and purchase the 63-acre Sheep Farm. By mid-February, we had demolished eight structures (e.g. the barn, chicken coop, sheep shed) on the property deemed unsafe and beyond repair. We restored a historic foundation, remediated lead and asbestos contamination, removed two septic systems, two wells and three fuel tanks, updated the survey, title and deed documents, navigated the DEEP bureaucracy, received funding and paid off the loan. By March 1, we had met with forestry and wildlife experts, completed a preliminary stewardship plan and successfully applied for a five-year federal incentive program to restore wildlife habitat. Volunteer work parties have since hit the ground running, contributing thousands of hours to remove invasive plants and hurricane-damaged trees, plant native grasses and shrubs and trees, upgrade the trail system and improve our maps. We encourage you to visit the site on Hazelnut Hill Road off Rt. 117 S and join us to have fun working outdoors with good friends.

We were honored to receive the Connecticut Land Conservation Council's "2011 Award for Most Outstanding Land Acquisition Effort" for the acquisition of the Sheep Farm. We think we deserve it! Governor Rell and her entourage were our guests at the Latham Chester Store in Noank for a grant ceremony.

GOSA invited the extended Merritt Family, who had played such a critical role in saving their farm for open space, to a reunion and ceremony honoring Mary Merritt, wife of Nelson Merritt. We dedicated a rustic stone bench at The Merritt Family Forest to her memory, and we listened to family history. We invite you to visit The Merritt Family Forest, listen to the babbling brook, sit on the bench and watch for hawks and other wildlife in the meadow.

GOSA is an all-volunteer grassroots organization. This past year we have been especially active, and we invite people like you to come forward to help us make a difference. Join us, bring us new ideas and tell us what you like to do. We need volunteers for educational and advocacy projects, publicity, outreach and membership activities, fund-raising and financial management, brochure, map and sign projects, land stewardship, grant writing, and news reporting. Please bring your special skills to help us preserve the environment and improve our community's quality of life.

Nelson Merrit and his three daughters, left to right: Debra Mastroianni, Nancy Treuer and Susan Merritt



A turkey enjoys a spot in the sun by the stone bench.

Celebrate The Glory of Southeastern Connecticut

Come join our Annual Celebration with an evening of Music, Dinner, & Silent Auction

Thursday, April 26th, 2012
6-9pm
Latitude 41°
in the River Room at the Mystic Seaport

Seated Dinner & Dessert
Cash Bar
Music by Kent Hewitt & Steve DeConti
Call to reserve by April 16th
860-572-5715
($55 per person, $30 tax deductible)

GOSA Calendar

Saturday, March 31, 1 p.m. at the Sheep Farm, sponsored by Ledyard Public Library. Invasive Species Tour. Contact: Sue Sutherland, 860-245-0568.

Tuesday, April 3, 4 p.m. at the Sheep Farm, 245/255 Hazelnut Hill Rd. Hike with U.S. Representative Joe Courtney. Contact: Sidney Van Zandt. 860-572-5725

Thursday, April 26, 6-9 p.m. GOSA Gala at Latitude 41 Restaurant at Mystic Seaport, R.S.V.P. required. Contact: Sidney Van Zandt, 860-572-5725

Saturday, April 28, 8 a.m.-12 p.m. Annual Haley Farm State Park Clean-up Day. Bring gloves. Contact: Joan Smith 860-536-9811.

Saturday, June 2, 9:30 a.m. CT Walk Day cross-town hike from Bluff Point State Park to Beebe Cove, sponsored by CT Forest & Park Association. Registration required. Contact Sidney Van Zandt, 860-572-5725

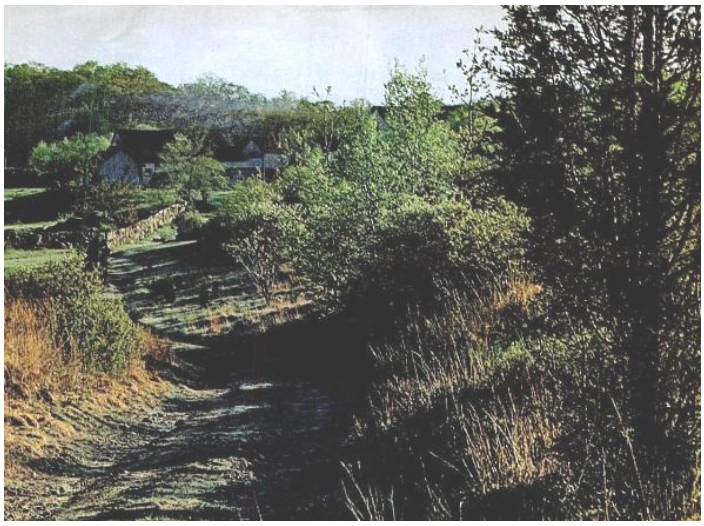
Saturday, June 2, 10 a.m. CT Walk Day hike, rain or shine, on the Sheep Farm, sponsored by CT Forest & Park Association. Registration required. Contact Sue Sutherland, 860-245-0568.

Wednesday, October 10, 10 a.m. at the Sheep Farm. Conservation walk with North Stonington Garden Club. Contact Sue Sutherland, 860-245-0568.

* All events are free except the Gala, April 26.

Sidney's Corner
How It All Began: A Brief History of GOSA
As told by Sidney Van Zandt to Liz Raisbeck

The Groton Open Space Association was formed in 1967 by Sidney Van Zandt and Priscilla Pratt in response to the growing threats to open space in the town of Groton. Our first project was the acquisition of the Haley Farm, now well known as one of the loveliest places in the region, and enjoyed by people from many miles around. Few who walk there today are aware that 50 years ago the farm was slated for 250 acres of duplex housing. Because GOSA did not yet have tax-exempt non-profit organization status, the Connecticut Forest & Park Association offered to be an umbrella organization to receive funds toward the $300,000 purchase price, a fortune in those days. We hoped to raise the bulk of the purchase price from the state, but we needed to raise 25 percent from private donors. It was a wild, town-wide fund drive with individuals, local businesses and even schoolchildren participating. It finished successfully on March 1, 1970. *Life* magazine published a story called "Battles Won" in their July 4, 1970 issue featuring several open-space success stories from across the country, including the fight to save Haley Farm. Since winning the battle in 1970, GOSA has been the principal steward for Haley Farm, organizing annual cleanup days, and since 1985, paying for yearly mowing of the fields. However, GOSA's work was not done on Haley Farm as the owner held back 57 acres to be developed later.



Life *magazine photo of Haley Farm in 1970 by George Silk*

Shortly after the state purchase of Haley Farm a major struggle ensued over the future of neighboring Bluff Point. As early as 1914 the state had hoped to purchase Bluff Point from Henry A. Gardiner III for a recreational facility, but it wasn't until 1963 that the state finally succeeded. The beach and a narrow strip of access land along the Poquonnock River was acquired and plans were underway to fill in the marsh to make room for a 4,000-car parking lot. The Gardiners had also sold about 52 acres to Stradmore for industrial development and 7 acres to Zaist for a marina. By the early '70s they were planning to develop the remaining 447 acres for housing. Other developers came forward with proposals for an industrial park, underground oil-storage facilities, a 400-boat marina, a bridge from Long Island and a highway connecting I-395 to I-95 to Bluff Point.

Photo of Sidney from Life *magazine, 1970, taken at Haley Farm by George Silk.*

Sidney at The Merritt Family Farm celebration in October 2011.

In 1972, the state legislature formed the Bluff Point Advisory Council to come up with a plan for the best use for this property. Several members of GOSA served on that committee. Omar Allvord, a local businessman involved in community politics, and Sidney Van Zandt of GOSA were appointed co-chairs. In 1974, after several years of effective community action, then-Governor Meskill was persuaded that the property should be saved as a state park. In 1975 the legislature passed The Coastal Reserve Bill creating Bluff Point State Park & Coastal Reserve. Bluff Point was connected to Haley Farm by a railroad bridge on its eastern boundary soon thereafter. Today, the two sites protect over 1,000 acres of open space on Long Island Sound.

GOSA continued to oppose efforts to develop the upper 57 acres of the Haley Farm, which remained under private ownership. It was not until 2001, 32 years after the start of the campaign to preserve Haley Farm, that GOSA was able to collaborate with the state to purchase the remaining acres and add them to the Haley Farm State Park. Today one can walk from Bluff Point through the Haley Farm, cross the Mort Wright Preserve and end up on The Merritt Family Farm, a beautiful walk through forests and meadows.

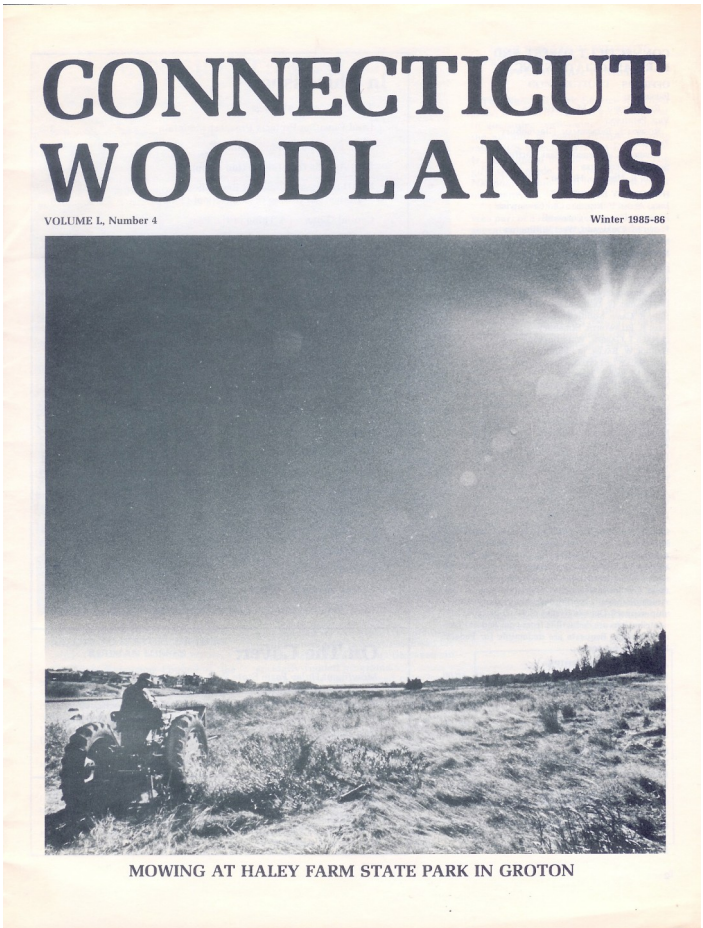
Over the course of GOSA's 45 years its members have continued to work for protection of Groton's streams, wetlands, reservoirs and open space. We have participated in countless public processes in Groton. We have testified before several town commissions—planning, zoning and wetlands—and the Town Council, and sought decisions that would make proposed developments less environmentally degrading. We regularly urge the town to remember the critical importance of protecting the Groton reservoirs, our very high quality water supply, and Long Island Sound.

One of the most significant conflicts in recent years was GOSA's opposition in 2006 to a permit application to the town of Groton to build a new Super Walmart on Route 184. Walmart was planning to replace the existing store just down the road. GOSA became an official "intervenor" in the permitting process, and hired an engineering expert in low-impact design to examine Walmart's application documents. After carefully studying Walmart's proposal to build a parking lot only 750 feet from Groton's reservoirs, our expert testified that the runoff from the parking lot would end up in our drinking water supply.

Though it took several years, our efforts succeeded. The Planning Commission turned down the permit based on GOSA's evidence. Walmart sued the town, but before the litigation could be resolved, the developer withdrew the permit application in 2009 and abandoned the project.

In 2008, GOSA became an owner of open space with the purchase of the 75-acre Merritt Family Forest, a keystone of land that connects many open space parcels, and, in 2010, GOSA purchased the 63-acre Sheep Farm. GOSA received grants from the Connecticut Department of Environmental Protection and several foundations, and donations from many individuals. Both parcels protect migratory streams for Long Island Sound which were previously threatened with runoff from large proposed developments. Since then, GOSA has received two U.S. Department of Agriculture Wildlife Habitat Incentive Program (WHIP) contracts to restore meadows on both properties. Our members have put in thousands of volunteer hours removing invasive plant species, planting native species and developing a trail system. We have restored healthy habitats for wildlife, especially nesting birds, butterflies and bees, and the public can enjoy the quiet beauty of these special places.

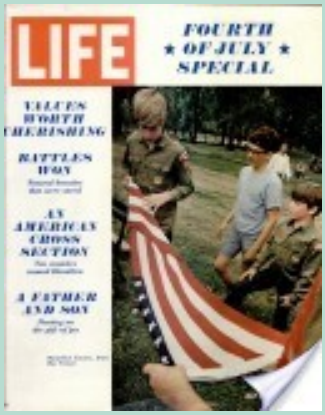
In the meantime GOSA continues to be the watchdog organization in Groton, reviewing applications for development and making sure that they will not threaten either our drinking water supply or the ecologically valuable streams and wetlands in our town.



MOWING AT HALEY FARM STATE PARK IN GROTON

Excerpt from *Life* magazine article, "Battles Won," 1970

"Connecticut is an older frontier, a gentle place of second-growth woods and shore and ponds, of soft hills and stone walls and tidy farms. But when the whine of the 20th century gets too shrill along its 18th century lanes, and any of its quiet beauty comes under siege, Connecticut can fall back on another natural resource—aroused ladies. Mrs. Jo Brosious set out to save Cockenoe Island, a 26-acre chunk of sand and brush 1,000 yards off Westport. The island, long a fishing and recreation site for town residents, four years ago became the property of a power company that wanted to build a nuclear plant there. Mrs. Brosious trumpeted the alarm in the weekly paper she edited, gathered a "petticoat press corps" of women supporters, and led 400 townspeople to Hartford to pressure legislators. A year ago the power company relented and sold the island to the town as a park. "We fought," Mrs. Brosious explains, "on the issue of whether a utility or the people have the right to determine land use. And we won."

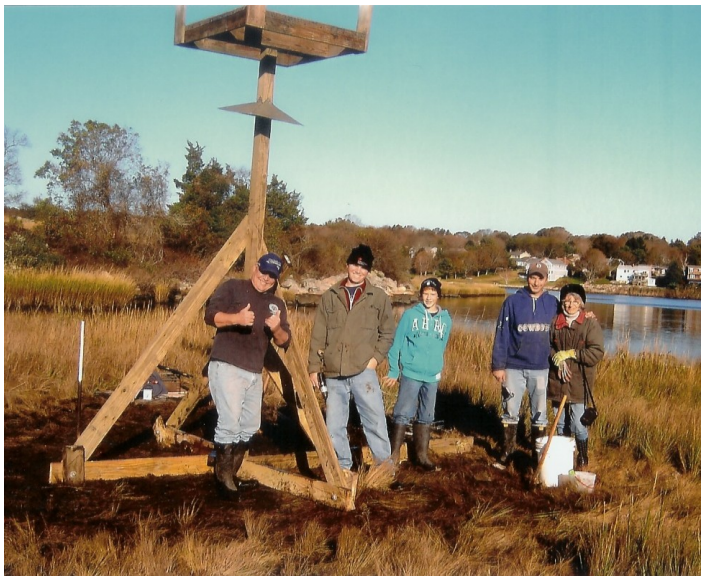


Over in Groton, meanwhile, Mrs. Claiborne Van Zandt had another cause—Haley Farm. A meandering 264 acres of meadows, ponds, orchards and pasture, the farm was being eyed by a real estate developer. Mrs. Van Zandt rallied local resistance for two years, raising money with everything from a rock concert to a save-the-farm smorgasbord. The state, bolstered by a $150,000 federal grant and the $50,000 raised by Mrs. Van Zandt, finally purchased the farm as a park for $300,000. She wants it maintained as farmer Haley knew it in the 19th Century—"a place where people can watch hay taken in, steal apples, see a real farm at work."

Left: The picture on the cover of *Connecticut Woodlands* was taken by the Connecticut Forest & Park Association for their magazine. Tom Crowley, pictured on the tractor, began mowing in 1985 because the fields were reverting to woodlands. His sons used weed-wacker machines to clear the jungle of vines from the stone walls. When Tom died, his son, Tom, and Tom's sons, Tom and Brian, took over because they adored the place. Now Brian is running the tractor, and it was pictured on the front of the Region section of *The Day* March 9, 2012.

Right: Tom Crowley and son, Tom

Volunteers at Work



Left to right: Ray Winchester and Paul Dixon, neighbors of Brian Turley on Seneca Dr.; grandson Brandon Turley; son David Turley; wife Ellen Turley. Photo by Brian Turley.

Osprey Nest on Haley Farm

In early June 2011 GOSA received a report that the nesting platform had taken a severe tilt. The second week of June the osprey nest broke in two. The eggs had hatched, the young had fledged. The parents hung around for about two weeks. A watcher from across the cove thought the young were flying.

The state had said that the nest should not be replaced till late summer. There were various offers to build a new one. Correspondence was received from Brian Turley who lives across Palmer Cove. His e-mail to GOSA and the State DEP on October 21, 2011 stated that: "Nest is rebuilt in my backyard ready to install. Site is cleaned up, ready for installation. Will transport material to site by boat from my back yard, and it will take a few hours to install."

October 29, 2011 Brian sent a letter stating that the "Osprey nest installation is complete. Enclosed pictures show the great crew to help, family and neighbors. Think this one will outlast me.

V/R [Very Respectfully],
Brian W. Turley"

Owl on the Sheep Farm

Maggie Jones, Executive Director of Dennison Pequotsepos Nature Center (DPNC), and Al Brown rescued and then released a magnificent great horned owl found caught in a leg trap on the Sheep Farm several years ago. The female owl was unusually large, 24 inches tall with a wingspan of 55 inches. Maggie and Al took the owl to the Waterford Country School (licensed for wildlife rehabilitation) for observation . She received treatment for the injured leg, and after a few days had healed sufficiently to be taken back to the Sheep Farm for release. Maggie and Al then watched this beautiful bird spread her wings and fly down Fort Hill Brook to a nearby tall tree. Photos by Al Brown.
Go to http://www.dogwork.com/owfo8/ to see an amazing video of an owl in flight.

Salamander Awards for 2011 Left to right: Sandy Van Zandt, Si Borys, Peter Chappell and Betsy Maltby receive awards from Joan Smith, GOSA President, for their outstanding stewardship contributions over the past year to both The Merritt Family Forest and the Sheep Farm. Absent honorees: Jim Hansen and Jim Anderson.

Bittersweet Battle Volunteers Jim Anderson (pictured) and Fred Ruszala decimated the invasive jungle in the gorge area of the Sheep Farm. A single section of the bittersweet pictured weighed in at approximately one pound per inch. Consider the impact of a single 50-foot vine weighing 600 pounds hanging on a tree. This tree had seven.

Spotted Salamander

Volunteers Needed!

Would you like to help too?
Call Sidney Van Zandt
860-572-5715

Chain Saw Trio On Sunday, January 16, 2012, in 19 degrees, Peter Chappell and Directors Whitney Adams and Charlie Boos (left to right) had at it with chain saws to cut up the Norway maple downed from storm damage on the Sheep Farm.

Photo by Ben Adams

Sheep Farm Chipper Party Crew Relaxes after Weekend of Hard Work Saturday and Sunday, March 10-11, 2012, beautiful, sunny days with highs in the 40s. Thirteen workers on Saturday and 10 on Sunday, for a total of 112 hours of work with the heavy-duty chipper, eliminated the piles of branches from downed trees, cut up felled trees and dug up honeysuckle. The place looks great, and everyone loved the pizza and other goodies. Thank you, everyone! Left to right: Sue Sutherland, Jim Anderson, Joan Smith, Sidney Van Zandt, Whitney Adams, Charlie Boos, Rusty Warner, Cindy Wall, Peter Chappell. Missing are Si Borys, Bob Graham, Vicky Field, Greg Stoltz, Joe Kuhn, Bill Loweth, Deb Ziegler, Sandy Van Zandt.

A Forgotten Landscape: Rediscovering the Baker Cove Watershed in Groton, CT

By Syma A. Ebbin

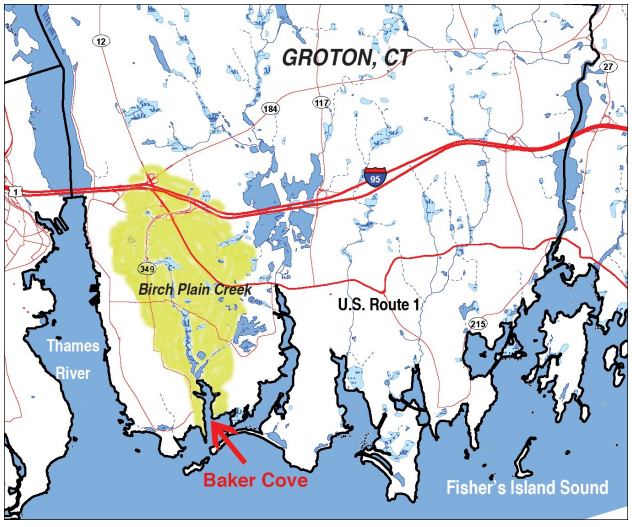
Baker Cove with docks in the foreground and the Groton-New London Airport in the background.

Sometimes when you embark on a quest, you find more than what you were originally seeking. I recently had the opportunity to participate in an assessment of the Baker Cove watershed in Groton. What started out as a seemingly simple hunt for sources of water quality contamination became a search for a stream- a process of discovery and exploration as we set about locating the various reaches and rills, unearthing the various paths taken through, under and around the concrete and blacktop surfaces of a sprawling township. Judy Rondeau, the Eastern Connecticut Conservation District (ECCD) leader of the watershed survey, invited me and others to participate in a "track-down investigation" to identify potential sources of water quality impairment. In the end, however, I realized that what I had gotten out of the walks and paddles was much greater than the stated goal. Like Lewis and Clark, I had embarked on a voyage of discovery; what I discovered was the Baker Cove watershed itself.

In the southwest corner of Groton, Birch Plain Creek empties into Baker Cove, which joins the mouth of the Poquonock River and flows into the waters of Fisher's Island Sound, Long Island Sound and ultimately, the Atlantic Ocean. These waters I know well, having spent my youth swimming, sailing and exploring them from the vantage of my grandfather's house on Jupiter Point. Grandfather and I harvested bay scallops nestled in the cove's shallow beds of eelgrass. My friends and I spent lots of time trying to catch blue crabs to eat and European green crabs, which we sold to the local marina for two cents apiece. We fished for winter flounder, but more often caught eels or cunners, and in late August we fished snapper blues. Nowadays there are more motorized craft and jet skis in the cove. There are also several commercial aquaculture leases in the cove that are actively used to grow shellfish, including those owned by the Spicer family, Aeros Cultured Oyster Company and Sweet Pea Enterprises. There are still fish and shellfish in the cove and in those waters joining the Poquonock River, although perhaps there are fewer bay scallops and more oysters, but now it is other children who spend their time fishing and crabbing.

Baker Cove is edged on the east side by the Groton-New London Airport and is crowded on the west side with houses, docks, a few lobstering operations, marinas and the Elks Club. Birch Plain Creek supplies the cove with water, forming a lovely shallow embayment fringed by salt marsh grasses upstream from the dual impoundments formed by the railroad and Thomas Road. The Poquonock River drains to the east and the waters of both tributaries join together, creating a large and sheltered estuarine system, utilized by a variety of terrestrial and marine species.

The water quality of Baker Cove is impaired, and this is particularly problematic from the point of view of those wishing to harvest shellfish, either recreationally or commercially. The shellfish beds are occasionally forced to close, especially after large rain events, due to high levels of fecal coliform bacteria. According to the state's Directory of Impaired Water Bodies, potential sources of water quality impairment in Baker Cove could include boat discharges, runoff from residential areas, geese droppings, as well as the catch-all category of "Unspecified Urban Stormwater." But over the years, while serving on the city's Harbor Management Commission and Inland Wetlands and Conservation Agency, I had heard tales of other potential, more insidious, sources of contamination. This is the reason that the EPA awarded the ECCD a grant to investigate the watershed.



The red arrow points to Baker Cove, with Birch Plain Creek north of it. The green shaded area is the approximate watershed of the cove. Map image from Wrack Lines.

And so we embarked on our search for potential sources of bacterial contamination. What we found was a fragmented watershed, a forgotten stream filled with the unwanted debris of modern life, wandering around and under roads and parking lots, disappearing into culverts and bogs.

Groton does not appear at first sight to be a paved, urban metropolis. Areas of open space are interspersed with houses and lawns, urban strip mall development and industrial centers. But much of the original landscape has been substantially altered. Baker Cove and its watershed straddle the municipality's complicated legal jurisdictions, having a foot in the city and another in the town, both named Groton. The watershed is a wide vascular network that extends north and east, draining the town's prime commercial areas.

Judy and I, along with other ECCD staff, GOSA members Joan Smith and Sidney Van Zandt, and other local volunteers, including a few members of the Avalonia Land Conservancy, kayaked the waters of Baker Cove. We then moved north on foot into Birch Plain Creek, following little unnamed tributaries, trying to locate and connect the various fragmented, impounded and culverted pieces of the watershed.

After our idyllic paddles in Baker Cove, we headed north under the railroad tracks that impound Birch Plain Creek, and scooted under the Thomas Road bridge where crabbers set their bait. We paddled north on shallow waters adjacent to the Birch Plain Creek Golf Course, the bottom covered with lost golf balls and crawling with blue crabs. When it got too shallow, we had to approach by land, driving up to Poquonnock Road and backtracking. The creek is surrounded by dense stands of *Phragmites,* making it inaccessible. On Poquonnock Road, we identified two storm-drain outlets off Nathan Hale and Paul Revere Roads flowing directly into the creek.

We paddled east in the shallow silty waters of the unnamed tributary, which runs between Thomas Road and the abandoned railroad spur which originates at Pfizer and Amerada Hess on the Thames River. I hiked another branch which runs west along the same railroad tracks in the opposite direction and drains a residential area and the Shennecossett golf course.

The eastern edge of this tributary originates near Wildcat Ledge and flows around and under I-95. The creek flows down and across Drozdyk Drive towards the shopping centers on Long Hill Road. You can see the creek by the U.S. Post Office before it heads underground and flows under the parking lot and across U.S. Route 1. The storm drains in the parking lots drain directly into the stream. Behind the Big Y and Planet Fitness shopping center, the stream briefly emerges again, heavily littered with shopping carts, tires, discarded furniture and a wide assortment of other refuse. It then dives under the train tracks on its way downstream.

Birch Plain Creek, frozen over in winter, north of Thomas Road and the railroad impoundment. Photo by Syma Ebbin.

The middle section of the stream that goes through town and city-owned open space to the east of the Clarence B. Sharpe Highway "is really pretty," according to Judy, "although once it makes the turn west towards Route 349, it gets a little rough; the vegetation closes in; there was one stretch where it was all brambles and we couldn't stay near the stream." Birch Plain splits at Route 349 by the highway garage, one branch heading to the oddly named Lake George (what is now just a ditch filled with murky water surrounding a rectangular parcel of unmowed vegetation) and the other branch continuing north to I-95 along Route 349 as a drainage ditch for highway runoff. The creek, winding around and under various highway exit and entrance ramps, is polluted, but most likely not a source of bacterial contamination.

"Before the highways, Birch Plain Creek used to go up past Chiapperini's Engineering on Route 12 by Tollgate Road," my Uncle Horace, an historian and former surveyor for the town, noted. I hiked this northern portion and saw where the creek butts against the I-95 off-ramp and runs under the parking lot of the Bowling Alley, crosses under the street and then, amazingly, flows

An unnamed tributary emerges from multiple culverts after crossing Route 1 and numerous parking lots. Photo by Syma Ebbin.

The detritus of modern life fills an impounded section of the Baker Cove watershed. Photo by Syma Ebbin.

under the Knight's Inn, where it exits into a vast *Phragmites*-infested swamp. The creek there is blanketed with an orange slime that clings to the bottom substrate.

"The Christie Plating Company was located near here," my mother exclaimed. "I remember their gray building here in the 1950s and there was a big article in the newspaper about their business." My Uncle Hop told me that the company's more recent location was at the confluence of Bridge, Broad and North Streets, but he believed that the company had a prior location at Ramsdell and Broad and remembered an incident in which they dumped wastes in someone's backyard. I googled Christie Plating Company in Groton and was whisked away to the EPA's superfund database where I found that the company had apparently also dumped its waste in New London, creating a toxic waste dump on what is now the location of the Jefferson Garden Apartments on Michael Road, where approximately 120 people live. According to the EPA site,

"… in 1958 and 1959 the property owner disposed of two to three loads, each load consisting of approximately 250 gallons of septage and metal hydroxide sludge, composed of lime, aluminum oxide and emery, in a pit on the property. From 1973 to 1979, the property owner reportedly disposed of approximately 300 gallons of gray sludge on the Geer Brothers' Septic property. The sludge disposed of on the two properties was reportedly generated by Christy [sic] Plating Company in Groton, Connecticut. In 1972, San Land Development Corporation bought the property and constructed the apartment buildings. The former sludge disposal pit is allegedly located beneath one of the apartment buildings in the northeast corner of the property…. Analytical results of surface soil samples collected from the property in 1992 indicated the presence of one volatile organic compound (VOC), two semivolatile organic compounds (SVOCs) including one polyaromatic hydrocarbon (PAH), four pesticides, cyanide, arsenic, calcium, lead, mercury, and sodium."

There was, however, no information linking the Christie Plating Company to waste dumped in Groton, so perhaps the orange slime has a different, natural source related to the oxidation of iron-rich groundwater, perhaps from the native iron-rich granite bedrock, the presence of iron bacteria water, and the formation of floc as the bacteria digests the iron. More investigation is obviously warranted.

The mysterious rusty orange waters of Birch Plain Creek. Photo by Judy Rondeau.

So, what did I learn on my journey? Following the river requires uncovering the past, understanding the history of land use, moving from a cohesive system of connected tributaries to a fragmented series of culverted reaches, truncated ditches and remnant streams.

Humans have had a profound effect on the functioning and structure of the Baker Cove watershed and on urban watersheds in general. We have replumbed their vascular networks, interrupted flows of water, rearranged storage, and changed flood hydrology and sediment balance. We have impounded and fragmented streams, removed riparian vegetation, created barriers to fish passage, destroyed critical amphibian habitat as well as other essential wildlife habitats. We have polluted and degraded water quality. The expansion of impervious surfaces in our watersheds has played a pivotal role in this degradation, allowing more potential sources of pollution to be washed directly into aquatic systems with little or no filtration through soil. But towns have been slow to change their local land use ordinances despite information which demonstrates the overwhelming benefits of limiting the expansion of impervious surfaces.

We tend to view rivers more as boundaries of political jurisdictions than as ecological centers of watersheds. Birch Plain Creek forms the boundary between the town and city of Groton, and this is an inherently fragmented perspective, focusing our management efforts on borders instead of integrated systems. This has impacted the way we value these systems. Bodies of flowing freshwater were central to the development of human civilization as we know it, as sources of water, energy, and food. They are now treated more like waste bins than as sources of an essential component of life. Urban waterways are marginalized at the periphery of development, seen as impediments to progress, as something to go around or over.

Rivers as borders are asocial, lacking power and voice within political processes. There is political expediency for governments to site "Not In My Back Yard" projects and externalize the social and economic costs of their decisions to these areas, minimizing and isolating the opposition, dispersing the perception of costs and harms, and concentrating benefits where people can "see" them. It is not a coincidence that so many NIMBY projects are built along rivers acting as political borders.

Exploring an urban watershed and attempting to put it back together again, like Humpty Dumpty, is a wonderful heuristic exercise. You may not find all the pieces and it won't make the streams cleaner, remove blockages or enhance connectivity, but it will alter your understanding, heighten your awareness and change your perspective.

Next time you see a dense stand of *Phragmites* at the edge of a parking lot, you may be tempted to see if there's a hidden stream flowing nearby. You may be tempted to look in storm drains and culverts to figure out how the pieces fit together, where the water flows, where it starts or where it goes. Once you do that, you may start to see the stream not as a fragmented jumble of ditches and swampy pools, but as a connected whole. That change in awareness is a critical step towards making the stream whole. For without first rediscovering or remembering the stream as the unified system it once was, it will never be possible to find or even recognize the pieces (à la Humpty Dumpty), let alone put them together again.

***About the Author**: Syma A. Ebbin, Ph.D. is research coordinator for Connecticut Sea Grant, faculty member of the UCONN Department of Agricultural and Resource Economics and a member of the GOSA Board of Directors.*

This article was first published in Wrack Lines, *a publication of Connecticut Sea Grant, and appears here in a modified version.*

For more information about Connecticut watersheds and land use go to the UCONN Center for Land Use Education and Research (CLEAR), http://clear.uconn.edu

So, what did the ECCD study find in the way of smoking guns?

The final Baker Cove Abbreviated Watershed Management Plan has just been released and can be found at the Connecticut Department of Energy and Environmental Protection website: http://www.ct.gov/dep/cwp/view.asp?a=2719&q=379296&depNav_GID=1654. You can read that in full to get a sense. The bottom line is that over half of the watershed is paved or covered in some kind of impervious surface. This provides a means for all wastes which fall to the ground to be whisked quickly into the receiving waters and storm drains of the watershed without the benefit of slow infiltration through layers of soil and gradual release and storage into below-ground aquifers. The Baker Cove watershed receives stormwater from 38 stormwater outfalls. These discharges are released untreated and contain a cocktail of pollutants, commonly known as non-point source pollution due to its diffuse nature.

The effluent undoubtedly contains nutrients, fecal and other types of bacteria, organic wastes, pathogens, and a range of chemical pollutants from sources such as pet and wild animal (e.g., Canada geese) wastes, garden and lawn care products including fertilizers, pesticides and herbicides, plastic, paper and other forms of trash and debris, road salts, rubber, oil and gasoline from cars and other vehicles. It's death by a thousand cuts. Table 1 taken from the report summarizes the possible sources of bacterial and other contaminants to Baker Cove. Additional problems in Baker Cove are due to the degradation of the watershed landscape, the removal of riparian vegetation, the introduction of exotics, the erosion of banks, the siting of roads, parking lots and buildings adjacent to and at times directly over the tributaries. The discharge from boats and other marine-related activities into the waters of the cove is an additional source of pollution in Baker Cove.

Table 1: Possible Sources of Bacterial and Other Contaminants to Baker Cove

Possible Source	Location	Number of Occurrences
Urban Sources/Pets	Watershed wide	50% impervious surface, est. 231 licensed dogs
Stormwater Outfalls	Multiple locations	38
Dry weather storm drain flow	Poquonnock Road	1
Sewer/Septic Systems	Watershed wide	No known failures
Degraded Riparian Buffer	Multiple locations	16
Marinas/Private Water Craft	Baker Cove	2 marinas, multiple private crafts
Geese/Waterfowl	Baker Cove, Golf Courses and Airport	>28 geese, 10 swans
Trash/Debris	Multiple locations	7
Erosion	Multiple locations	3
Modified Channel	Multiple locations	10

Wood Frog Egg Masses
By Joan Smith

Photo by Sue Sutherland

Big Night Wood frogs and spotted salamanders migrate en masse from the forest floor to breed in vernal pools in early spring. Most will leave the upland leaf litter over several rainy nights following the first warm day of spring. This phenomena, called Big Night, is worth a late night in the rain to see. Male wood frogs make a raucous quacking sound, like a flock of ducks, and alert you to the location of the pool. Mating and egg laying are completed within a few weeks, and the adults return to nearby uplands. From mid-March to April, look for the egg masses of both species. The eggs are flat before egg laying, and inflate with water after deposition. Algae will cover the masses over time.

Wood Frog egg masses look like a fist-sized gelatinous blob of up to 1500 individual eggs, featuring ¼ to ½ inch spheres with a black embryo. There is no outer matrix unifying the mass. The eggs are attached to vegetation in shallow water near or at the water surface and are often found in large communal clusters. Wood frogs are 1.5-2.5 inches and look light tan to pink to dark brown.

Spotted Salamander males produce spermatophores on breeding nights. These look like small white chunks on the pool bottom. A female picks up sperm from several spermatophores and her eggs are internally fertilized. Egg masses consist of 30-250 individual eggs surrounded by a stiff gelatinous matrix, ranging in size from 1 to 6 inches. The entire mass may be clear or white. The white ones look like fuzzy golf balls. The egg masses may be deposited in clusters and attached to vegetation in sunny locations. Adult spotted salamanders are 4.5-8 inches long and have obvious yellow spots on a blackish body. The males court females in an aquatic swarm. A busy pool can look like boiling water. A vernal pool is any fish-free, temporary or semi-permanent wetland that supports indicator species. Wood frogs and spotted salamanders, tiny fairy shrimp and the fall-breeding marbled salamander are indicator species, any biological species that defines a trait or characteristic of the environment, in our area.

GOSA News will support the mission and purpose of the Groton Open Space Association by publishing electronic newsletters that will inform the public of past, present and future GOSA activities and threats to the health of open space. *GOSA News* will also serve as a link to the GOSA website http://gosaonline.org/ for additional information and as a link to other key sites. Our mission is to inform and inspire the public to become actively involved. We welcome letters to the editor. Letters should be sent with the writer's name, address and daytime phone number via e-mail to: gosamail@gmail.com.

GOSA Mission and Purpose

To work to promote conservation, environmental preservation, open space and recreational areas in Southeastern Connecticut.

To educate the public about the value of open space, conservation and environmental preservation.

To enlist public support and funding to promote, acquire or maintain open space for public use, alone or in cooperation with local, state or federal agencies, or with other nonprofit organizations. GOSA is a nonprofit tax exempt organization under IRS Section 501(c)(3).

GOSA News **Staff**

Editor: Eugenia Villagra

Associate Editors: Lillian Kezerian, Patty Oat, Elizabeth Raisbeck

Layout: Eugenia Villagra

Layout Designers: Eugenia Villagra, Rusty Warner

Contributors: Syma Ebbin, Joan Smith, Sue Sutherland and Sidney Van Zandt

GOSA News Contact Information: gosamail@gmail.com

Membership

To join, send a check to GOSA and include your name, address and e-mail. Annual dues are $10 per year.

Groton Open Space Association, Inc.
PO Box 9187
Groton, CT 06340-9187

E-mail: gosamail@gmail.com