



Protecting our Waters and our Land for 30 Years

GSWA Turns 30 This Year!

by Sally Rubin, GSWA Executive Director

As we enter Great Swamp Watershed Association's 30th anniversary year, I thought we should take a look back at the work that has gone into helping the organization grow into the force it is today.

Membership in GSWA has gone from a handful of local residents in 1981 to nearly 1,500 supporters today in more than 40 municipalities. Financially, our annual budget has exploded from \$5,000 to nearly \$500,000 with another \$700,000 in endowments, giving us opportunities today that seemed only a dream in 1981.

According to Abbie Fair, GSWA's visionary and founder, "By 1980, concern about impacts to the Great Swamp and first hand knowledge that no town was thinking on a regional basis, led me to explore how to try to protect Great Swamp." Since Abbie's vision came to life, there are countless examples of situations over the past thirty years in which, because of the participation of representatives of GSWA in the public hearing processes with respect to proposed developments within and near the watershed, that we exercised beneficial influence on the decision-making process to improve

designs and raise awareness about risks to the valuable natural resources of the Great Swamp.

Over the past thirty years, GSWA has helped to preserve hundreds of acres of undeveloped environmentally sensitive land around the Great Swamp. We, along with concerned area residents, were instrumental in having the Rolling Knolls

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WATERSHED MOMENTS

In 1981 GSWA supported the EPA Environmental Impact Statement for regional wastewater facility planning, known as the "201 Plan," which called for

- a water quality study of watershed streams
- suspension of approvals for package sewage treatment plants throughout the watershed until the water quality study is complete

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GSWA turns 30 *(continued from previous page)*

landfill in Chatham Township designated as a superfund site, and permanently preserving close to 188 acres of property formerly owned by Delbarton St. Mary's Abbey in Morris Township once targeted for development. We have expanded our local advocacy activities, including starting the Citizen Advocacy Program, which advocates for intelligent land use by area communities and educates citizens to become better advocates for environmentally responsible land use decisions.

Today, GSWA is working hard to ensure the Great Swamp's future through the long-term chemical and visual monitoring of the five streams that drain into the Great Swamp National Wildlife Refuge. The waterways exit through a single outlet at Millington Gorge, forming the upper reaches of the Passaic River, which provides drinking water for over a million people.

We are helping make sure stream monitoring will continue into the future by training an ever increasing number of Stream Team volunteers. GSWA has also implemented the Adopt-A-Stream model utilizing trained volunteers to identify pollutants, sources of contamination, and areas that can benefit from restoration.

Throughout the past thirty years, volunteers have worked to help promote GSWA in our local communities. Today, they continue to play a major role in the

organization's many efforts. Our more than 200 volunteers donated over 1,600 hours of labor last year, including time spent participating in stream clean-ups, helping to restore GSWA's 50-acre Conservation Management Area, and becoming involved in important issues facing our local communities.

In partnership with local area businesses, our corporate volunteer program gives approximately 175 volunteers each year the opportunity to provide 1,100 work hours to help maintain, preserve and restore the Conservation Management Area and portions of the Great Swamp National Wildlife Refuge.

With education, along with advocacy and water monitoring, being at the core of GSWA's mission since its inception, we continue to promote environmental education for children, including watershed pollution programs for 1,000 local students each year from area schools. We also conduct annual teacher workshops for area educators to help ensure environmental issues relevant to the Great Swamp are discussed in the classroom. GSWA provides adult seminars, family-oriented educational hikes and breakfast briefings to help further educate the public on environmental issues facing the Great Swamp and our surrounding communities. Recently, GSWA held its first formal seminar on the wide-spread use of road salt and how it impacts our local waterways.

Our informative and topical website, which is increasingly used by the public, now features an extensive reference library, online giving and program registration, and water quality testing results. Visitors can also view past copies of the *Across the Watershed*

In celebration of our 30th anniversary year, we've included some past accomplishments in this newsletter. Check out these


WATERSHED MOMENTS

print newsletter and find information about other organizations in the area working to protect New Jersey’s biodiversity and natural resources.

GSWA is also now using new technologies to spread our message to more members of the public through the Internet. We have 175 friends on our Facebook page, regularly post tweets on Twitter, host our own blog, and distribute our monthly “In Brief” electronic newsletter to nearly 2,000 e-mail recipients.

In the past thirty years, GSWA has taken major steps to ensure a healthy future for the Great Swamp and wetlands inhabitants. Trustee and former Board Chairman David Budd said it best when he wrote that the cumulative impact of what we have done is helping to preserve and protect the quality of life for all the creatures (human and otherwise) that live, work, or play within the Great Swamp watershed.

As we look to the future, I’m thrilled about the progress GSWA has made in protecting our waters and our land, and the work the organization continues to accomplish thanks to the support of our members, corporate and foundation partners, and steadfast volunteers. In this, our 30th anniversary year, GSWA promises to continue the vision and hard work of our founders by expanding our education and outreach offerings, increasing the number of volunteers and “citizen scientists” in the field assessing the conditions of our streams, applying grant funds to help restore our streams to a healthier state, and advocating for intelligent land use and responsible development practices.

I hope you’re as excited as I am to see what the next thirty years brings for the Great Swamp Watershed Association. 

ACROSS THE WATERSHED

is a publication of the **Great Swamp Watershed Association.**

GSWA is a member-supported nonprofit organization that has been protecting our waters and our land for 30 years.

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And Five Healthier Streams Run Through It ...

by James Northrop, GSWA Land Use Committee Member

Efforts to protect the Great Swamp watershed have involved many people over some five decades. In particular, Abigail Fair had the vision and commitment to make a lasting difference.

Through her leadership and with the encouragement of Helen Fenske and others, an association was formed in 1981 that they named Great Swamp Watershed Association.

The first Board of Trustees, whose purpose was to bring an organized approach to protecting the Great Swamp, included environmental commissioners from most of the municipalities in the watershed, as well as citizens concerned with the health and natural beauty of the region. The Board determined that education of officials and the public about watersheds, and the need to warn of the impact of haphazard land development in the Great Swamp watershed, were essential to sustaining the Great Swamp. This was a totally volunteer group for ten years, meeting monthly at the Harding Township town hall.

During those ten years, Abbie and others worked hard to establish a dedicated membership base. As experience and participation increased, the organization was able in 1991 to hire its first executive director, Julia Somers.

What was the need to which GSWA was responding? Large estates in the watershed were being sold off for large-scale

development. It was increasingly apparent that regional planning was needed to avoid negative impacts to the Great Swamp. A major challenge was when Prudential targeted the 300-acre Dodge Estate for their new corporate headquarters, subsequent to the death of Geraldine Dodge in the late 1970's. This large property was situated in several municipalities, and Chatham Township and Madison Borough each had their own ideas about safe land development, with some citizens believing that obtaining increased tax rates was the primary concern. A dedicated group needed to educate officials and the public about appropriate land use trade-offs and the long-range negative impact of hasty, short-term decisions.

Among GSWA's early accomplishments was the hiring of experts to provide testimony before township committees, planning boards and boards of adjustment, frequent distribution of educational fliers and establishment of a regular newsletter. Public meetings were also organized, as were tours of the Great Swamp for local officials.

Today, thanks to that early vision of Abbie Fair and others, we see a strong and effective GSWA. We also see public officials more knowledgeable about well-planned land use. Importantly, we see increased

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Watershed Watch – Environmental Hot Spots

by Sally Rubin, GSWA Executive Director

Summarized below are several advocacy situations, or “environmental hot spots,” in which GSWA has recently been involved and, where appropriate, continues to closely monitor.

Bernardsville

The Bernardsville Centre application may be resolved by the time this newsletter hits your mailbox! GSWA has been able to amicably resolve our issues with the applicant. The applicant has agreed to change the angle of storm water discharge into Penns Brook to lessen its impact. The applicant has also agreed to plant additional trees along the bank, both on its own property and property of adjoining neighbors (with neighbors’ consent) to improve stream bank stabilization and decrease flooding. The applicant has also agreed to perform downstream impact analysis and to notify GSWA of DEP applications to enable GSWA’s participation in the permit process.

Harding: Primrose Preserve

This 13 lot subdivision on approximately 130 acres may not be built. GSWA has been working with the developers and the Trust for Public Land to endeavor to have this property preserved. Although Morris County has agreed to provide funding for this open space acquisition, they did not fund the grant request in full. Consequently, there is a several hundred thousand dollar shortfall. GSWA will continue to work with the parties involved to try to ensure that this environmentally sensitive property is preserved.

Bernards Township: Millington Quarry

The quarry has made a request of the DEP to have its environmental expert, JM Sorge, “stand in the shoes of the DEP” under the new Licensed Site Remediation Professional process (LSRP). Although GSWA has not taken a formal position on the LSRP, we do not believe the applicant’s own expert is the appropriate entity to hold this position. A neutral third party would be more appropriate.

Morris Township: Honeywell

Honeywell is making application to the Morris Township Planning Board for a General Development Plan of its approximately 150 acre corporate site. The plan includes razing some existing buildings and proposes a mixed use development, including a possible 250 room hotel, over 300 townhouses, a possible Continuing Care Retirement Community and some retail space as well. Although most of the site is located in the Whippany River watershed, approximately one quarter of the site is in the Great Swamp watershed. GSWA’s concerns include remediation of both known and unknown contamination and the impact of additional water flow into the already degraded Loantaka Brook. 🌲

Help reduce our print and mailing costs by signing up at www.greatswamp.org to receive future issues of **ACROSS THE WATERSHED** and our monthly e-newsletter via email.

Teacher Education Workshops


Great Swamp Watershed Association facilitates workshops for K-12 formal and non-formal educators that focus on core content correlated activities they can use back in the classroom or Nature Center. These workshops encourage critical thinking and focus on sustainability topics such as water conservation, the water cycle, biodiversity, habitats and more. Workshops provide activities relevant to the local environment and are linked with the amazing online resources of Verizon's thinkfinity.org.

Each six hour hands-on workshop, led by GSWA's own experienced naturalist educator, Hazel England, provides participants with activity guides chock full of relevant and engaging content that can be interwoven into existing curricula. Workshops are \$15, and include breakfast. They confer six professional development credits too! For more information email Hazel at hazele@greatswamp.org. Workshops take place at Great Swamp Watershed Association offices at 568 Tempe Wick Road, Morristown.

Become a fan of GSWA
and join the cause on

facebook

Project WET Workshop with Additional Great Swamp Focus Saturday, March 26, 2011, 9 a.m. - 3 p.m.

This workshop is an interdisciplinary, supplemental water education program for formal and non-formal educators, K-12. It is hands-on, action packed and informative! Educators will learn by doing, experiencing activities they can use to teach all kinds of water concepts from the water cycle, to water properties, aquatic ecosystems, and water pollution prevention. Participants will receive the curriculum and activity guide, a collection of innovative, water-related activities that are hands-on, easy to use and up to date. 

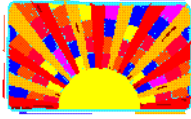
WATERSHED MOMENTS

In 1981, GSWA:

- assembled expert witnesses on chemical research, hazardous materials, and historical structures to testify at a hearing to introduce zoning for chemical/biological research into a sensitive area of the watershed.
- recommended denial of a development permit for an eight-acre wetland that would otherwise result in reduced ground water recharge and increased transport of silt into the Swamp.

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GSWA's Breakfast Briefings have returned after a winter break. Check out what's on tap this spring:



Tuesday, March 8: Current Drinking Water Issues

Presented by: Scott Baxter-Green, Water Quality Manager, New Jersey American Water Company

New Jersey American Water provides drinking water for many of the homeowners within the Great Swamp watershed. We'll cover several topics pertaining to your tap water, including upcoming water quality concerns, maintaining the underground infrastructure, and deciphering your Consumer Confidence Report.

Tuesday, April 12: Rain Barrel Workshop

Presented by: Ken Sicknick, Resource Conservationist, Morris County Soil Conservation District

Harvesting rain water has many benefits including saving water, saving money on your bill, and preventing basement flooding. By collecting rain water, homeowners are also helping to reduce flooding and pollution in local waterways. At this workshop, you will learn all about rain barrels and how to build one yourself! There will also be a limited number available for purchase. Take an active role in recycling rainwater — install a rain barrel at your house!

Tuesday, May 10: Aquatic Invasive Species

Presented by: Pat Rector, Environmental and Resource Management Agent (Morris & Somerset Counties), Rutgers Cooperative Extension

Learn about the aquatic invasive species that threaten the water quality of our streams, lakes and ponds, how to identify them, and what homeowners, fishermen, and boaters can do to keep them out! You will also learn how these insidious invaders impact not only our fish populations but also our bird populations.

Each Breakfast Briefing is held at GSWA's office at 568 Tempe Wick Rd., Morristown, starting at 8 a.m. A continental breakfast is included. Donations are appreciated.

Free for members. The fee for non-members is \$10 per adult, \$5 for each child five and over, and \$30 per family.

We ask that you pre-register by visiting www.greatswamp.org, or call our Event Info Line at 973-538-3500 x22. 🌿

Know Someone Who Would Like to Become a Member?

GSWA relies on members like you to help protect our watershed's natural resources. So please pass this newsletter along, and encourage your friends and neighbors to join us! Visit www.greatswamp.org for more information.

Educational Programs

Learn more about what's going on in and around the swamp by joining friends and members of GSWA for our spring educational programs. We ask that you pre-register for these programs to learn meeting locations and other information. Wear sturdy footwear and bring a snack for the walks. Bring binoculars or wildlife guides if you have them. These programs are free for members. For non-members, the fee is \$10 per adult, \$5 for each child five and over, and \$30 per family. All fees associated with educational programs held at Great Swamp National Wildlife Refuge are suggested voluntary donations only. To register, visit www.greatswamp.org and click on our secure Event Registration page, or call the GSWA Event Information Line at 973-538-3500 x22.

An Evening with Author David Wheeler Thursday, March 24, 7 - 9 p.m.

*GSWA Offices, 568 Tempe Wick Road,
Morristown*

David Wheeler, author of *Wild New Jersey: Nature Adventures in the Garden State*, will be the special guest of GSWA where he'll give a presentation on his exploration of our state's biodiversity. Refreshments will be served. For additional information on Mr. Wheeler and his new book, visit wildnewjersey.tv.

Moonlight Hike at the Cross Estate Friday, April 15, 7 - 8:30 p.m.

*Cross Estate, Leddell Road, Morristown
National Historical Park*

We'll listen for the sounds of watershed animal inhabitants including owls, frogs, night insects and other creatures, perhaps even coyotes calling! We'll play some games to learn more about night senses, and revel in exploring the Cross Estate after dark without a flashlight.

May Day Hike Sunday, May 1, 5 - 6:30 p.m.

*Conservation Management Area, Tiger Lily
Lane, Harding Township*

Long ago young maidens would arise and wash their faces in the dew on May Day to stay young forever. We can't promise eternal youth, but we do promise you'll feel rejuvenated after a spring hike around the 50 acres of GSWA's Conservation Management Area. Listen for returning neo-tropical migrant birds, watch for wildflower blooms peeking out and listen for the frog chorus in a gentle family-friendly hike along the trails of GSWA's flagship restoration area. 🌲



GSWA is now blogging at
<http://acrosstthewatershed.blogspot.com>


Treading Lightly: Do You Know Your Water Footprint?

by Hazel England, GSWA Director of Education and Outreach

Do you know how many gallons of water your household uses each year? Is it 100,000 gallons? Two million gallons? How about how many gallons of water it takes to produce your daily food? You might be surprised to know that it takes almost 2,000 gallons of water to produce a single pound of beef! And 36 gallons of water are used to produce one cup of coffee!

Your household uses water for drinking, washing, cooking and lawn care, but you also use a lot more to produce the food, clothes and products you consume. A water footprint, much like a carbon footprint considers this impact. A water footprint is defined as the total volume of freshwater used to produce the goods and services that you use. Issues such as pollution and water shortages can be better understood and addressed by considering production and supply chains as a whole. Focusing on water footprints can highlight the intensive use of water to produce particular goods and allow you to make subtle but effective changes that reduce your total water use and hence your impact.

The average per capita water footprint is more than 88,000 cubic feet per year in the U.S.A., whereas per capita averages in China are closer to 25,000 cubic feet. Take a few minutes to calculate your own household's water footprint as a first step in understanding the impact your consumption has on our freshwater systems. You can take a quick or in-depth calculation at www.waterfootprint.org and learn more along the way about where in your daily life are the high use areas and where you fall compared to the national average?

Let us know what you found out about your own water footprint and what changes you might take to reduce your total water consumption. Email hazele@greatswamp.org with your household findings. 

Water We all About? Wine and Movie Night Thursday, May 5, 6:30 - 8:30 p.m.

*GSWA Offices, 568 Tempe Wick Road,
Morristown*

Never mind splashy westerns or drippy romances. Join us for movies that will immerse you in "water." Share wine, cheese and a selection of hot topic movies on water-related issues. We'll show selected portions of "Flow" and "Tapped," both award-winning documentaries highlighting different aspects of the worldwide water industry. We'll round out the evening with a lively discussion following the clips. "Tapped" highlights the back-story of the bottled water industry, and "Flow" the global privatization of water supplies, but they both convey broader water issues that are relevant to area residents in a highly impactful way.

Student Citizen Scientists Testing the Waters: SWaMP Program Update

by Chuck Gullage, SWaMP Project Coordinator, GSWA Trustee and Stream Team Volunteer

GSWA's School Water Monitoring on the Passaic (SWaMP) program is underway and making great progress. Since the fall of 2010, we've been actively working with students, teachers and advisors from the following six schools in and around the Great Swamp watershed: Fairleigh Dickinson University, College of Saint Elizabeth, Kent Place School, Bernards High School, Watchung Hills Regional High School, and West Morris Mendham High School. Over 100 students, teachers and professors have been trained in the Enviroscope Watershed Model, and in how to use the World Water Monitoring Day, LaMotte nitrates and Coliscan Waterborne Fecal Coliforms and *E. coli* test kits.

Equipped with the necessary testing supplies and classroom training, the student citizen scientists went off to their assigned monitoring site locations, which include the headwaters of the Passaic River in Mendham, Penn's Brook in Bernardsville and several locations along the Passaic River including Berkeley Heights, Chatham and Livingston. Since the Berkeley Heights site was close by, the teams from Kent Place School had the opportunity



to tour the Berkeley Heights Sewage Treatment Plant. GSWA wishes to thank the plant superintendent, Joann Mondini for supporting the SWaMP program.

Videos were made of microbe activity, as examined under an LCD digital microscope, from samples taken at the various monitoring locations. The monitoring data collected by the teams were also summarized in a report that will be available soon on the GSWA website. The videos of the microbial activity are available on GSWA's Facebook page.



Penns Brook

Our goals for this year's spring semester include expanding the SWaMP program to more colleges and high schools in the Great Swamp and Upper Passaic River region. Additionally, we want to analyze the monitoring data for trends that may require follow-up monitoring. Specifically, there are a few areas in the Great Swamp watershed and along the upper portions of the river where fecal coliforms and *E. coli* bacteria counts appear to be high. Working with the students, we'd like to collect more data in those areas to determine if the bacteria counts are still high and if so, try to isolate the causes.

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Spring Cleaning of Loantaka Brook

Come out and join GSWA on **Saturday, April 9th, 9:30 a.m. – noon**, to tackle pollution and clean up Loantaka Brook as part of National River Cleanup 2011.

Presented by American Rivers, National River Cleanup raises public awareness of the magnitude of trash accumulating in our nation's waterways. GSWA will again be supporting this program with our annual spring cleaning of Loantaka Brook, the most polluted stream in our watershed because of its proximity to major roadways and the heavy use of Loantaka Reservation for outdoor recreation.

Interested volunteers should contact Kelley Curran, GSWA Director of Water

Quality Programs, at 973-538-3500 x16 or kcurran@greatswamp.org.

To learn more about National River Cleanup™ visit www.americanrivers.org/our-work/restoring-rivers/national-river-cleanup. 🌲



Volunteers stand with the trash collected from Loantaka Brook in April, 2010.

SWaMP *(continued from opposite page)*

Thanks to all who helped make the Fall 2010 SWaMP program a success. If you'd like information on how your school can participate, contact Chuck Gullage at cgrlcdr@verizon.net.

Information about the SWaMP program, along with the interactive web interface for data monitoring is now posted on the GSWA website at www.greatswamp.org/SWaMP.htm. 🌲

Five Streams *(continued from page 4)*

public awareness of the need for balanced land development. Thank you Abbie and Julia for setting us on this path, in densely populated New Jersey — with more people per square mile than any other state in the country. 🌲

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CMA “To be or not to be” — No Question!

by Blaine Rothauser, CMA Biologist

When former GSWA Executive Director Julia Somers approached me in 1996 to assess the ecological value of a piece of property located in the southwestern edge of the Great Swamp watershed, I was skeptical. After spending a spring morning evaluating the site, I felt that the most significant function of the property was likely as a flood storage basin. The 24-acre site (now 53 acres) is greenway-connected to Great Swamp National Wildlife Refuge via streams and tributaries of Great Brook.

The site showed moderate biodiversity potential due to intense deer browse, invasive species, and close proximity of highways, corporate centers, and housing. Nevertheless, I recommended that GSWA obtain the property and begin restoration.

Julia recognized that this appraisal was focused on what *could* be and GSWA’s Conservation Management Area (CMA)



Blue-gray gnatcatcher pulling tent caterpillar silk

was born! Fifteen years later the CMA is a shining example of sound resource

protection and exemplary stewardship in the watershed that sustains us.

Since the early days when Frank Stillinger (GSWA volunteer extraordinaire)



Pearl crescent on golden ragwort

and I created trails, built nest boxes, and conducted intensive native species planting, the site has evolved into a full-blown conservation management area with myriad restoration achievements.

Hazel England, GSWA’s land steward and Director of Education and Outreach, was hired in 2004 to stimulate restoration efforts. This renewed focus on the area has borne fruit — native fruit! Thousands of volunteer hours from corporate workdays have allowed restoration through invasive plant removal, trail development and installation of deer fencing to proceed apace. To date, 28 acres of the site have been enclosed with an 8’ fence, allowing an entire wetland forest understory to recover — leading to a spike in biodiversity and giving native species

a chance to out-compete invasive plant regeneration.

The CMA has advanced into a laboratory of sorts. Academic research is being conducted inside the enclosed area to quantify the fence effect in protecting against deer browse. A graduate student from Rutgers University is quantifying the uptick in floristics inside fence enclosures throughout the state, and the CMA is one of her favorite sites because of the extent of the enclosure. The fence is allowing an ecological explosion — the number and variety of neotropical songbirds visiting and nesting within the CMA enclosure is indicative of a forest understory in full recovery (see the Fall 2009 issue of GSWA's Across the Watershed).



Swamp pink

and tears have leveraged the effectiveness of our corporate workday program, allowing 2,000 feet of boardwalk to meander through the wet portions of the forested CMA, 1,000 native shrubs to bloom and seed, and many acres of invasives to be eradicated. Your feet can stay dry on the CMA's many trails because of these efforts, and you can witness an emerging native understory that should be present in many of our New Jersey forests but is currently missing. All of these improvements over the last 15 years benefit the CMA's original intent — flood storage capacity — but they also allow improved stream bank buffering along the Silver Brook, reduced soil erosion from deer crossings and enhanced vernal pools filled with wildlife as the biodiversity soars.

As a dedicated steward of the CMA since the beginning, I am rewarded for my hard work and thoughtful planning every time I find another new species, such as last fall's observation of a Swamp Darner dragonfly laying eggs at the edge of the blue trail, or a flying squirrel poking its head out of a

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Raccoon babies

No mention of the successes of the CMA would be complete without acknowledging the work of GSWA's other stalwart volunteers: Steve Gruber, Lisa Stevens, Wes Boyce, Bob Crocco, and Frank Stillinger, who through untold hours of blood, sweat


Become a Stream Team Volunteer

Want to learn how to help collect data that is used by GSWA and the NJ Department of Environmental Protection (NJDEP) to gauge the health of our streams?

GSWA's Visual Assessment Training program is designed to train volunteers to gather data on water bodies that are currently not being assessed by our staff or the NJDEP. This important data can be used in several ways. At the local level, it provides valuable information to municipalities. At the watershed level, it helps to identify or follow up on areas in need of attention or remediation. At the state level, it serves to identify impaired waterways and provide baseline information for further studies.

You might be surprised to learn that a great deal of useful monitoring can be done just by observing streams and waterways and

taking detailed notes on what you see. Even simple information, like stream depth and width, or the location of pools and riffles, can be helpful. What wildlife is observable? What plants? Is the water surface covered with algae or a film? What condition are the stream banks in? Are there trees overhanging the water? Through visual assessment, team members can be the first to discover pollutants or man-made hazards in our waterways.


The next training session, consisting of a classroom presentation followed by a field demonstration, will be held on **Sunday, May 15**, from 9:30 a.m. – 12:30 p.m. at GSWA Headquarters, 568 Tempe Wick Rd., Morristown. If you're interested, contact Kelley Curran, GSWA Director of Water Quality Programs at 973-538-3500 x16 or kcurran@greatswamp.org. 

CMA *(continued from previous page)*

flicker-box installed years ago. Perhaps the ultimate evidence that GSWA's efforts are succeeding is the elderly male wood turtle that is spotted almost every year in spring along the banks of the Silver Brook, before disappearing into the underbrush. Wood turtles become highly surreptitious once outside the hibernacula (winter quarters) of their wetland streams.

Like the state threatened wood turtle, the CMA has become a haven for other

rarities including Coopers hawk, wood thrush, box turtle, barred owl, and bittern. We are particularly proud of our stewardship over two small but successful colonies of the federally endangered swamp pink (*Helonias bullata*).

GSWA has, in its 53 acre CMA, a "picture that speaks a thousand words." 

Hazel England, GSWA Director of Education and Outreach contributed to this article.

All photographs are by Blaine Rothausser

The Hows and Whys of Water Testing

by Hazel England, GSWA Director of Education and Outreach

Some Great Swamp watershed households get their water from public utilities, including New Jersey American Water and United Water. Others, such as Harding residents, get their household water from private wells on their properties, while water for those in Madison and Chatham Boro comes from a wholly town-owned source.


By law, public water companies must provide their customers with a breakdown of what's in the water. This disclosure, known as a Consumer Confidence Report (CCR), tells homeowners, among other things, what contaminants have been detected in their drinking water and how these detection levels compare to national drinking water standards. The report must be provided annually and is typically mailed directly to customers' homes. You can find out more about your CCR online at: <http://safewater.tetrattech-ffx.com/ccr/index.cfm>. You can also obtain a copy of your water system's most recent CCR by contacting your local water supplier directly.

Because it can take an advanced degree in chemistry and a love of small print to make sense of these documents, water testing can provide homeowners with information about what may be entering their drinking water from their own pipes.

Several local companies provide water testing services where they will come to your

property, collect samples and test water both straight from the well or supply and after it has emerged through your pipes and taps. Depending on the level of service you desire (and the money you're willing to spend), you can test for pH, salt concentration, nitrates, metal salts, such as iron, lead, *E. coli* and chlorine levels, along with volatile organic compounds.

Expect to pay around \$400-\$700 depending on the comprehensiveness of the tests performed. Test results are typically available in a couple of weeks. The report may well explain possible sources for the contaminants found and possible health impacts of each. A useful website for more in-depth information is www.watertestingblog.com. This site has plentiful information on water testing for homeowners.

Our website has links to local companies that provide water testing services, along with the areas that they will test within. GSWA does not endorse any of these companies, but simply offers their contact information. 

Interested in volunteering?

Fill out our volunteer profile at www.greatswamp.org/VolProfile.htm, or e-mail volunteer@greatswamp.org.

The State of Our Streams

by GSWA's Stream Team

All five of the streams in the Great Swamp watershed — Loantaka Brook, Great Brook, Black Brook, Primrose Brook and the Upper Passaic — are visually inspected at a number of sites at least twice a year by trained Stream Team volunteers. Site-specific summary reports are outlined below:

Site: Black Brook #1

Location: Chatham Township, off of Southern Boulevard across from the Fairmount Country Club golf course.

Report period: Spring 2004 - Spring 2010.

Current Stream Team assessors: Terri Goldschein & Michael Fineman.

The stream appears relatively stable, with a slight deterioration of the banks. The concentration of riparian vegetation on the right side of the bank has moved from within 15 feet to wider than 50 feet. Stream depth between fall and spring assessments varies widely, being deeper in the fall than in the spring. Stream velocity is consistently slow flowing throughout the years. Algae have not been a factor in this stream, but litter has always been present.



Black Brook
Fall 2009



Primrose Brook
Fall 2009

Site: Primrose Brook #1

Location: Harding Township, off of Bailey's Mill Road.

Report period: Fall 2003 – Spring 2010.

Current Stream Team assessors: Wes Boyce & Lisa Stevens.

The velocity of the stream at this location has varied slightly over the years, with the one outlier in November 2004 because of a rain event that took place the day of the assessment. Both left and right banks seem to be experiencing a moderate amount of erosion. The amount of sediment found on the stream bottom has increased over the years, a sign of erosion forces at work. Algae have been

observed on the stream bed since surveys began in 2003. At this site, several apparent storm water drainage pipes discharge into the stream from surrounding residential properties. These discharges likely exacerbate the erosion problems.

Site: Upper Passaic River #1

Location: Off of Lee's Hill Road near the New Jersey

American Water Company property just downstream of Osborn Pond.

Report period: Spring 2004 – Fall 2010.

Current Stream Team assessors: Ben Wolkowitz & Clark Wagner.

Over the past six years this site on the Upper Passaic River has seen little change. The span of the Passaic River that has been surveyed is surrounded by many land use types, including: residential, single-family housing, residential lawns, paved and unpaved roads, commercial/institutional lawns, recreational golfing, woodland, and recreational fishing. Early in the assessment period a streamside property owner had several caged chickens but they have not been observed during more recent surveys. Also, in this reach of the river there are one bridge, one dam, and one culvert. All of the things



Upper Passaic River
Fall 2010

surrounding the river likely have some effect on what is happening to and in the river. Within the past few years the sediment on the bottom of the river has increased as well as the depth of the river. Stream velocity has had little variability throughout the

years. When observations first began, algae were found on the streambed and now are not found at all.

In addition to ongoing visual stream assessments performed by Stream Team volunteers, GSWA's "Adopt a Stream" program is a three-year chemical study of a particular

(continued on page 20)

GSWA Awarded NJDEP Grant

The Christie Administration recently announced the award of \$3.2 million in grants to fund six nonpoint source (NPS) pollution control projects throughout the State, including \$1 million targeting polluting runoff into Barnegat Bay and \$300,000 to the Great Swamp Watershed Association to implement agricultural NPS control projects to reduce pathogens and nutrient loadings in the Loantaka sub-watershed.

These grant projects, funded through the Department of Environmental

Protection's federal Clean Water Act Section 319(h) Grant Program, are designed to reduce the amount of nonpoint source pollution entering the State's waters, thereby restoring and protecting water quality in priority watersheds. GSWA's project will result in establishment of vegetative buffers and bio-retention structures and manure management programs to reduce fecal coliform impairments.

Read more on our blog at <http://acrosstthewatershed.blogspot.com/>.

What Might the Watershed Look Like in 50 Years?

by Brian Curry and Erin Greenwood, Rutgers University Landscape Architecture Junior Class

Each fall semester, the junior studio of the Rutgers University Landscape Architecture department takes a look at a different watershed to learn the intricacies of regional planning and design. For our Fall 2010 Regional Planning Studio, we focused on the Great Swamp watershed and its ten municipalities. The aim of this studio course was to develop students' skills at approaching design from a regional scale. This requires extensive research through field expeditions, pattern identification, analysis, and finally design. From an institutional standpoint, we were to conduct our research with a scientific and critical eye — to make

changes to the watershed that would benefit the land and the people.

The first stage of regional planning is the information gathering — the inventory. During the first two weeks of the semester, we broke out into research groups to better understand the watershed. The research groups looked at all different parts of the ten municipalities ranging from accessibility and politics to landscape observation and library information cataloging. The observation group made a few road trips to the watershed to understand the region's "sense of place" through photography and viewing the area from the car and on foot. At the same time, the library group was searching for as much data as they could find, and organizing it in a digital database for class use. This is a perfect example of the varying forms of research employed in the project — there is no one right way to go about collecting data. We had to sort and organize our findings into a single presentation given to Sally Rubin and Hazel England on September 17th. At the presentation, every group found that they were dealing with more than they originally thought. One team used a "report card" approach to "grade" the ten municipalities. Based on a number of environmental and community-based criteria, the municipalities were given grades as to how environmentally friendly and or successful they were. This report card method was very subjective, and Sally and Hazel agreed that the people of the "failing" municipalities (which will remain unnamed!) would be rather displeased with

WATERSHED MOMENTS

GSWA was active in 1981 on a number of issues:

- printed and distributed a pamphlet on the significance and protection of wetlands.
- successfully requested that the conservation zone as delineated in the State Development Guide Plan be enlarged to more completely buffer the Great Swamp.
- sought clarification from DEP of state waste water policies within the watershed.

As published in "The Newsletter of the Great Swamp Watershed Association," Volume 1, No. 1, Spring 1982



Rutgers University Landscape Architecture Junior Class

their calculated rank. Thus, this exercise taught us how to distinguish between “good” and “bad” data. It introduced us to the idea that we are not just dealing with a site — we are dealing with a system of people, history, the environment and all other things encompassing the watershed.

For the next month, we dedicated ourselves to the task of gathering as much “good” data as we could about the watershed — from geologic history to human history and beyond, and putting it together in the forms of charts, maps, graphs, and tables. We spent a lot of our time using a mapping database called Geographic Information Systems, or GIS. Through GIS, we generated a variety of informational maps revealing key descriptions of the watershed. We presented our findings at GSWA’s October 12th Breakfast Briefing in front of many GSWA

members, supporters and local residents. We were met with much excitement and good criticism that would further guide our progression with the project.

The next phase of the project was conducting the analysis of all the information we collected. We took all of our inventory data and used it to explore possibilities for the future of the watershed. One group focused on spots that would be best suited for new development, while another group focused on land that is in the most need of preservation. We also conducted build out and transportation analyses during this phase of the design. The one problem with this sort of research and analysis is that it assumes that everything will remain static. The build out analysis is not an ideal situation — rather it is a view of what could happen if zoning


(continued on next page)

Watershed in 50 Years *(continued from previous page)*

was to remain the same. The real changes and creative interpreting began in the design phase.

The design groups each chose a different goal for the watershed. Each group focused on a different idea and gave themselves a title. The groups formed were Balance Wildlife, Eco-Revelatory, LEAD, WALK, and Transitions. Balance Wildlife focused on the preservation of land and the connection of habitat for wildlife enhancement, as well as the connection between people and the environment. Eco-Revelatory sought to improve stream quality and educate the public about the processes of water in relation to the environment. LEAD saw that


the watershed was full of beautiful sites and views, and decided the best way to connect people to these sites and trails would be to create a system of bike paths that would circulate the watershed. WALK desired to make the watershed “walkable” by creating town centers and hiking systems that would both limit vehicle use and improve general health of the people by encouraging physical activity. Finally, Transitions wanted to solve the environmental problems of vehicle use by employing eco-friendly modes of transportation like solar powered busses. All of these designs had strengths and weaknesses, and none could be thought of as a single solution or “right answer.” Instead, these were design explorations that investigated key problems and attempted to find future solutions in the next 50 years. Elements from each design could be used to improve the future of the watershed. Should the existing way of life be preserved, or is the watershed headed for disaster if it continues? Does more land need to be preserved or does the watershed need to cut back on open space to make way for increasing population? These are but a few of the questions we asked ourselves at every step of the design. While these designs were separate in their goals, they all shared one point — connections. Every group saw the importance of connections in the watershed. This reveals the most important lesson of the project — the watershed is a system; one in which every element must work in synergy with all others in order to succeed. It is this synergy the design teams wished to establish.

You can learn more about this project by visiting <http://landarch.rutgers.edu/>. 

State of our Streams *(continued from page 17)*

watershed stream that tests water quality through lab analyses and visual studies. A concentrated chemical assessment of Loantaka Brook was completed in 2007, and the Great Brook study is wrapping up in 2011. The “Adopt a Stream” program is shifting its focus later this year to the Upper Passaic.

The most recently completed Great Brook study was highlighted in the Spring-Summer 2010 issue of *Across the Watershed* (a copy of which can be found on our website under “Publications”), and a more detailed water quality report has been published and posted to the website.

Details of the Loantaka Brook study, including the full three-year water quality report are also available on our website under “Water Quality.” 

Silver Brook Stream Buffer Restoration Project

by Kelley Curran, GSWA Director of Water Quality Programs

Thanks to a grant from The Watershed Institute, GSWA is in the process of restoring stream buffers in the Silver Brook sub-watershed. The Silver Brook is a headwaters system of the larger Great Brook sub-watershed that flows into the Great Swamp National Wildlife Refuge. The first buffer improvement project involved the planting of approximately 100 native trees and shrubs along a section of the main stem of Silver Brook that flows through property off of James Street owned by the Harding Land Trust.

Once the buffer planting on this property was completed, volunteers returned on several occasions to protect the newly planted trees and shrubs from deer damage

by installing fencing. In some spots, fencing has been installed around individual plants. In addition, two large areas have been fenced using rolls of 7.5-foot fencing from Benner's Gardens (one of which was donated). For added protection against deer, a company was contracted to provide several applications of an organic deer repellent. In addition, all of the plants have been mulched with wood chips graciously donated and delivered to the site free of charge by Tamke Tree Experts.

Thanks go out to the following volunteers for their help planting, mulching and fencing: Drew University students Carly Almanzas, Jean Jose Huertos and Aki Yamada; GSWA volunteers Joe Balwierczak, Wes Boyce, Linda Goldscheine, Steve Gruber, Chuck Gullage, Bill Leavens, Jane Riley, Lisa Stevens, and Barbara Wefing; and Harding Land Trust volunteers Tina Bologna (Executive Director), Jane Riley, and Leigh Williams.

GSWA is currently negotiating with several more property owners in the area where the banks of the Silver Brook and tributary streams are known to be in need of restoration. We hope to begin additional planting projects this spring. 🌲



After More Than a Century, How Much Longer Can We Rely On Our Local Water Delivery Systems?

by James Northrop, GSWA Land Use Committee Member

The Madison Eagle ran a front page story on November 18, 2010, quoting Madison Borough officials as believing that some 22 million gallons of water per month were unaccounted for, “possibly being lost through the borough’s water distribution infrastructure.” It was suggested that the water loss was likely due to broken pipes or infiltration.

The size of the water loss was a surprise, but not the fact that Madison’s water delivery system has been aging and will need to be replaced. The Madison governing body therefore enacted a 20% increase in the water utility rate, effective February 1, 2011, to fund gradual replacement of the aging cast iron water pipes.

While the cost and inconvenience of replacing miles of under-street water pipes is considerable, it is interesting how and why today’s water distribution systems were initiated. This story is about Madison Borough, but every township or borough in the Great Swamp watershed probably has a similar story, even though in some communities water is supplied commercially — not by the local municipality.

In the 1880’s, Madison was a village, beginning to transition into a small town. Prior to the emergence of a business district, there was some concern for the condition of the streets and sidewalks, but wells seemed satisfactory as the source of water for everyday use.

In 1889, a fire swept through the nearby town of Summit, causing considerable

damage to stores in the downtown. Madison residents realized that if adequate water reserves had existed in Summit, the fire would have been contained. The local newspaper campaigned for an ample water supply for Madison, recognizing that most buildings were wooden structures. The issue then became the subject of a Madison village meeting where construction of a proper water system received wide-spread support. However, since Madison was legally a part of Chatham Township, the expense of a new water supply for one village would have been shared by the entire township, which the Township Committee would not support. To many Madison residents, the only answer was for Madison to declare itself a separate entity.

Not everyone agreed. Quoted in the local newspaper, one Madison resident said: “we are not in favor of a borough government, or water supply. We have a good well, and that is all we need.”

After several months of heated debate, the argument about constructing a water system was finally settled. On Christmas Eve, 1889, the Borough of Madison came into existence by a vote of 308 to 145. With its creation, and subsequent secession from Chatham Township, Madison Borough adopted a government based on the mayor-council model.

Within a few years, Madison not only had eight miles of water pipe installed, but also a water- pumping house. Constructed at

(continued on opposite page)

Welcome New Members

Special thanks to the following donors who became members of GSWA between August 1, 2010 and February 4, 2011:


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GSWA also thanks those new members who wish to remain anonymous.

Water Pipes *(continued from opposite page)*

a cost of \$60,000, the brick building housed a water pump capable of pumping 1 million gallons daily.

So in the 1890's towns and villages in our part of New Jersey gradually substituted commonly-used wells for water pumped through underground pipes. The initial interest in this development had been largely to enhance fire fighting effectiveness, but clean, safe drinking water has become today at least as important. Interestingly, when Summit first turned water into its mains in April 1890, the purity of the water was promptly recognized and a stock company of Newark citizens sold it in glass jars. Imagine! Today we almost take clean drinking water for granted, but what would we do if we lost it? 

WATERSHED MOMENTS

Since the announcement on May 29th of the GSWA's year long program, "Great Swamp — A Place for All Seasons," the General Assembly and four Townships have passed resolutions recognizing the importance of the precious wetland in this rapidly developing suburban area. Assemblyman Rodney Frelinghuysen and Arthur Albohn sponsored the Resolution. Harding, Passaic [now known as Long Hill Township] and Chatham Townships and the Town of Madison have all supported the program with their Resolutions.

As published in "Great Swamp, a Place for All Seasons" 1983.

Year-end Appeal Donors

GSWA would like to thank the following members and contributors who gave so generously to our 2010 year end appeal:

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We also thank those donors who chose to remain anonymous.

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Lisa Stevens
Frank Stillinger
Ben Wolkowitz

GSWA Announces Changes to its Board of Trustees

GSWA extends a warm welcome to Phyllis Fast and Charles Gullage, who joined the Board of Trustees this year. Phyllis, owner of Sound Choice Assistive Listening, Inc., has been an active member of GSWA's Land Use Committee for several years. She and husband, Larry, long-time supporters of GSWA, live in Gillette.

Charles "Chuck" Gullage is retired from AT&T and the US Coast Guard. He is an active member of GSWA's Science & Technology Committee, and volunteers to keep a close eye on stream pollution. Chuck, who is also an active volunteer and trustee with the Musconetcong Watershed Association, lives in Chatham with his wife, Donna.

Returning to the board this year after a one-year hiatus are David Budd, Land Use Committee member and former GSWA board chair, and Frank Stillinger, member of GSWA's Science & Technology and Education & Outreach committees.

Stepping down from the board this year are Edward "Ned" Kirby, Nancy Miller-Rich, Adam Slutsky and Dot Stillinger. Dot won't be going far, as she continues to actively advocate for intelligent land use as a member of GSWA's Land Use Committee. 

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WATERSHED MOMENTS

At its annual conference held in October, The Association of New Jersey Environmental commissions gave the Great Swamp Watershed Association its Environmental Achievement Award for "distinguished effort on behalf of New Jersey's local environment" through the year-long program, "**Great Swamp — A Place for All Seasons**" which brought increased awareness of Great Swamp and threats to its integrity.

As published in "The Newsletter of the Great Swamp Watershed Association," Volume 1, No. 1, Winter 1985



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