



Protecting our Waters and our Land for more than 30 Years

Moths in the Great Swamp Watershed, Part I

By Blaine Rothauser, Naturalist, Photographer, and GSWA Member and Volunteer

Oh the moths! Curio life forms that surround our daily lives unnoticed, unseen, and sadly disregarded, nocturnal and hidden, winged-dryads that surround us in profusion, their existence barely acknowledged.

With names like flame-shouldered dart, rosy hooktip, beautiful wood nymph, delicate cynia, rainbow lichen, lemon plagodis, dirty notocelia, green marvel, goldenrod stowaway, red-lined

panopoda, showy emerald, and luna, how can anyone with naturalistic tendencies not be intrigued. But names alone are mere gossamer films to what really gets my Thoreau on when talking LEP (short for Lepidoptera—the order to which butterflies and moths hail, or my personal acronym for Light, Ephemeral, Pleasures). Moths have become my new nature-drug (as if I wasn't O-D-ing enough); I logged in over a hundred nights of moth-

watching last year. Each night brought me new friends to play with and a greater understanding that the biosphere we're swimming in is a bottomless wellspring of mind-boggling delights. GSWA Headquarters was one of my favorite hangouts for "mothing" (my term for attracting moths amid a bright light and an old white bed sheet—the repository of my pleasure). The Great Swamp Watershed with its



Luna moth (*Actias luna*) on lichen tree. ©2012 Blaine Rothauser

(continued on page 14)

From the Desk of the Executive Director



A Thousand Small Acts of Consideration

by Sally Rubin

Hurricane Sandy was ferocious. Because of the catastrophic flooding it caused—along with a hundred thousand downed trees, billions in damage to homes and businesses, and the interminable power outages—it has focused our minds intensely on global climate change.

Sandy, it seems, offered us a teachable moment. Because our lives are short, while environmental trends are long, we humans have a hard time perceiving changes that unfold over decades and centuries. A big event can focus the public mind, and Sandy has focused our minds on climate.

There will be more Sandy-like storms. There will be more devastating heat waves and droughts worldwide. Slowly, but noticeably if we are paying attention, streams will change. Water tables will change. Crops

will change. The trees and birds you find in the forest will change. Growing seasons will change. And sea level will continue to rise.

We can act and adapt, or we can ignore the evidence.

We can no longer build whatever we want, wherever we want. I recently read a great article from *wnyc.org* entitled, *Causes of Sandy Flooding Rooted in Overdevelopment* by Bob Hennelly (February 12, 2013). One quote caught my attention. “Environmentalists, land-use planning advocates, and even the US Army Corps of Engineers say inland flooding is a consequence of decades of local building decisions that have filled in wetlands, clear cut forests, and paved over farms—oftentimes sending water away from one town and flooding another.” The more catastrophic storms we have, the more clear this becomes.

The effects of climate change are global, regional, and local. The response must be the same. Every environmental issue you can name—water supply, air pollution, energy, mining and drilling, habitat loss—is affected by, or helps cause, climate change, and every one of these issues has a local dimension.



Hurricane Sandy ravages the east coast of the United States on Tuesday, October 30, 2012 at 6:02 a.m. Credit: NASA-NOAA GOES Project

Many of us feel that even by employing all the best practices in the world on our properties, we cannot make a difference in such a global problem.

It's been said that there are no silver bullets, only silver buckshot. One big action won't fix global climate change or restore our watershed. But, many small actions just might. If our watershed—our environment, our climate—is threatened by death from a thousand cuts, it can be restored by a thousand small acts of consideration.

There is no one dramatic solution, but there are a lot of little things we can do to improve the situation. Everything we try is “silver buckshot.” Removing invasive species, planting native buffer and recharge strips, installing rain gardens: none of these things will solve stormwater management issues or eradicate climate change on their own. Still, I like to remember the old Breck commercial; you know, the one where they say “you'll tell two people and they'll tell two people and so on and so on...” If we all do our part, cumulatively we will make a difference.

So what do we do here at Great Swamp Watershed Association?

- We can, and do, preserve land. Primrose Farms in Harding Township was preserved in the past few months thanks to GSWA's and its partners' leadership. It might have become a large, carbon-producing subdivision of homes, but will be 113 acres of carbon-sequestering forest and green open space instead. Preservation of the few small open-space parcels remaining can be vital, especially if most of the large tracts of land in our region have either been developed or preserved. These small tracts preserve at least a part of the

(continued on page 19)

ACROSS THE WATERSHED

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

GSWA is a member-supported non-profit organization that has been protecting our waters and our land for more than 30 years.

Editor: Steven Reynolds

Designer: Ann Campbell

Contributors:

Cathie Coultas
Hazel England
Mary Fisher
Laura Kelm
Justin Monetti
James Northrop
Blaine Rothausen
Sally Rubin

In This Issue:

Moths in the Great Swamp Watershed	1
From the Executive Director	2
Watershed Watch	4
Outdoor Programs	6
Teacher Education Workshops	10
Breakfast Briefings	12
Morristown NHP & GSWA	16
Madison's Tree Nursery	18
Every Drop Counts!	20
New Water Monitoring Equipment	23
Special Event-The Passaic	24
Changes to Board and Staff	25
Got Some Time? Volunteer!	26

Watershed Watch — Environmental Hot Spots

by Sally Rubin, GSWA Executive Director

The “environmental hot spots” described below outline some of GSWA’s advocacy activities throughout the Great Swamp Watershed over recent months. Where appropriate, we continue to closely monitor each situation. We rely on you, our friends and supporters, to keep us informed of pending development issues in your town.

Harding Township: Primrose Farm Estates

GSWA is pleased to announce that the preservation of 113 environmentally sensitive acres took place this past December. We have been working for more than three years to facilitate this preservation and contributed

\$200,000 through a Green Acres grant to the ultimate purchase. Harding Land Trust is now the owner of property located off of Brook Drive South in Harding. GSWA is working hard to lay out trails which will provide opportunities for hiking, birding, and other passive recreation. Primrose Farms is one of the last remaining tracts of open space in Harding, and features wetlands, mature forest, open fields, steep slopes, and endangered species habitat. It is bordered by a portion of the Upper Passaic classified as C-1 waters, as well as by Primrose Brook which is classified C-1 along its entire length. Stay tuned for upcoming programs here, including a photography contest in June.



GSWA Board members, staff, and volunteers visit the newly preserved Primrose Farm property in Harding Township, NJ. January 10, 2013.

Harding Township: Cell Tower

The Harding Township Board of Adjustment has been listening to an application for a proposed cell tower located at the corner of Route 202 and Tempe Wick Road at the Seventh Day Adventist Church. The original location was within 250 feet of Primrose Brook, the only stream in the watershed designated C-1 along its entire length. C-1 is the most pristine designation of water quality and prevents any measurable deterioration from existing conditions. The proposed location for the new cell tower has now been modified. Although still located on Church property, the actual cell tower site has been moved closer to Route 202 and further away from Primrose Brook. It is anticipated that a vote has or will take place shortly. There is an alternate site which may be considered across Route 202 on property owned by the NJ Department of Transportation. Although that property is even further from the stream, there are other inherent problems with sighting a tower at that location.

Long Hill Township: Copper Springs

Indoor Soccer, LLC, is requesting a zone change for this property, located on New Vernon Road near Meyersville Road. The proposed change would rezone the property from a Conservation Zone to a newly created Commercial Recreation Zone. The applicant is also proposing to increase the lot coverage from the currently allowable coverage of 15% to 40%. The applicant seeks

to install additional recreational bubbles on the property. This would be accomplished by filling in the large existing pond on the property which we believe is spring fed. This property is immediately adjacent to the Great Swamp National Wildlife Refuge.

GSWA will be conducting a site inspection of the property with a representative from the Refuge and an environmental consultant, and will then be meeting with the developer of this property to evaluate proposed changes to both zoning and future development. We are pleased that the developer has reached out to us to seek our input. GSWA continues to be vigilant in ensuring that runoff to the Great Swamp National Wildlife Refuge is not degraded, increased, or impaired.

Morris Township: Seaton Hackney Stables, Loantaka Reservation

GSWA has been working with Morris County Park Commission and environmental consultants at Princeton Hydro to remediate severe water pollution on Loantaka Brook. Funding for this work has been supplied through a \$300,000 DEP 319 grant. Hopefully, by the time you read this article, you will be able to see actual stormwater runoff improvements at this property. We anticipate the relocation of several small ponies from the streamside corner of the property to an area adjacent to South Street. Additionally, new fencing should be installed along the stream to increase the stream buffer, with plantings to follow later this spring. 🌲

Outdoor Programs

Learn more about what's happening in and around the Great Swamp Watershed region by joining us for one of our upcoming outdoor events. These programs are fun and informative for people of all ages and skill levels (unless noted otherwise). We'll see you in outside!

Registration is requested for all outdoor programming. Please read the following event descriptions for specific registration information. In most cases, current GSWA members participate free of charge. Non-members are asked to make a voluntary contribution of \$10/adult and \$5 per child (6 to 17 years), or \$35/family (includes 5). There is no suggested contribution amount for children ages 5 and under. Exceptions are noted below.

When attending an outdoor program, please dress for the weather. Conditions may be wet, muddy, hot, or cold. Long pants and sturdy shoes or boots are strongly

recommended. Feel free to bring your own water in a reusable water bottle, and your own snacks. Binoculars and field guides are welcome where conditions permit use.

Event dates, times, and locations are subject to change or cancellation. If an email address or phone number is provided at time of registration, GSWA will make every effort to inform you about scheduling changes. Updated scheduling information is also available by calling our *Event Information Hotline* at 973-538-3500 x22.

GSWA's Land Steward and Director of Outreach and Education Hazel England teaches a hike group how to recognize differences in the age and growth of the local forest canopy. The forest at the organization's Conservation Management Area (CMA) in Harding, NJ, contains both old and new growth areas that provide an instructive contrast for outdoor program participants.



Vernal Pool Exploration
Friday, March 22, 7–9 p.m.

*GSWA Conservation Management Area,
1 Tiger Lily Ln., Harding Township, NJ*

Pull on your rubber boots, grab a flashlight, and prepare to get a little wet as you join naturalist, photographer, and GSWA volunteer Blaine Rothauser for a Spring Peeper Party in the vernal pools of Great Swamp Watershed Association's 53-acre Conservation Management Area (CMA). This tract of forested wetland contains many vernal pools that will be jumping with breeding spring peepers, chorus frogs, wood frogs, and lots of other amphibians. It's fun for the whole family!

Participation is limited to the first 25 registrants.

Great Swamp Scavenger Hunt & Picnic
Saturday, May 11, time to be announced

*Start and end at Kitchell Pond Pavilion,
Loantaka Brook Reservation, 75 Kitchell
Road, Morristown, NJ*

Calling all would-be explorers, adventurers, and buccaneers! Think you know a thing or two about New Jersey's Great Swamp? Then it's time to test your powers of navigation and observation at the Great Swamp Scavenger Hunt!

The Great Swamp Watershed Association and its partners invite you, your family, and your friends to join us at Loantaka Brook Reservation's Kitchell Pond Pavilion on May 11 so you can set your sights on a true journey of discovery. We will provide you with a route to travel, questions to answer,

and a list of treasures to find throughout the 55-square-mile Great Swamp Watershed region. It's your job to navigate your own way, seek answers, and return with all your scavenged booty at the end of the day!

The more scavenging you do, the better your chances will be to take home some fantastic prizes during our late-afternoon Scavenger Hunt Picnic. We will provide the burgers, the hotdogs, and the drinks for the picnic. You provide yourselves, a covered side-dish (to share or not), and plenty of springtime-barbecue enthusiasm!

More than 100 people turned out for last year's hunt and picnic. It's time to get in this game and help us shatter that record! Watch our website at www.GreatSwamp.org for a complete set of scavenger hunt rules and event details in days to come. Remember to save the date!

**The Essence of Primrose: A Great Swamp
Photo Contest and Workshop**
Saturday, June 8, time to be announced

Primrose Farm, Harding Township, NJ

Love snapping shots of the Great Swamp in your free time? Then why not show off your photography skills in the Great Swamp watershed on June 8!

GSWA is offering an exclusive first look at Primrose Farm, a 113-acre tract of land recently preserved as open space with help from Harding Land Trust, the Trust for Public Land, Harding Township, and GSWA. With a diversity of landscapes—forests, wetlands, meadows, and steep slopes—Primrose is

(continued on next page)

Outdoor Programs *(continued from previous page)*

the perfect spot for hosting a photography contest and workshop focused on the land, water, history, and wildlife of the Great Swamp watershed region.

Photographers of all ages and skill levels are invited to compete to capture “the essence of Primrose” in their work. GSWA staff and professional photographers will be available all day to give guided tours of the property and photography advice. All contest submissions will be judged by a panel of local photography and environmental experts.

A complete set of contest rules and event details, including submission deadlines and cost to participate, will be published at www.GreatSwamp.org as the event date draws near.

Jockey Hollow Explorers: Water and the Revolutionary War Encampment **Sunday, June 9, 10 a.m.—noon**

Jockey Hollow Visitor Center, 6 Jockey Hollow Rd., Morristown, NJ

The Jockey Hollow section of Morristown National Historical Park teems with wildlife and American heritage. Enjoy a late spring hike and some storytelling as you learn more about how Revolutionary War soldiers used water at the site and what those water supplies look like today. Start the morning with a gentle, guided hike through the park’s natural sights and sounds courtesy of the Great Swamp Watershed Association. Along the way, keep an eye out for dragonflies, listen for song birds, and watch for katydids

Shop At Back to Nature & Support GSWA

In July 2012, Great Swamp Watershed Association (GSWA) became one of the first five organizations to receive a grant award from Conservation Resources through the new Back to Nature Fund. The award will be used to support ongoing restoration of the forest understory and landscaping for water conservation at our offices in Jockey Hollow in Harding Township.

The Back To Nature Fund is a cause-related marketing program developed by Conservation Resources which provides operating support for a select group of non-profit organizations that protect the environment. The Fund also provides grant funds for restoration projects. Support for the fund is provided by Back To Nature Home and Garden. Thank you to Conservation Resources and Back To Nature Home and Garden! Visit Conservation Resources, Inc. online at www.ConservationResources.org and Back To Nature Home and Garden at www.BackToNature.net.

Remember, all current GSWA members receive a 10% discount on goods and services from the Back To Nature Home and Garden retail store in Basking Ridge and from their website at www.BackToNature.net. Use the code **GREATSWAMP10** to receive your discount at checkout time and GSWA will receive a donation equal to 5.5% of your total bill. Back To Nature Home and Garden is located at 3055 Valley Road in Basking Ridge, NJ. Call them at 908-350-7506.



BACK TO NATURE FUND

and other wildlife! After the hike, join a National Park Service interpreter around a campfire for some storytelling and history. Find out just how much or how little today's landscape has changed from that of our forefathers two hundred thirty-four years ago!

This event is free of charge. Voluntary donations to the Great Swamp Watershed Association are gratefully accepted.

Great Swamp Moth Exploration Friday, July 5, 7 p.m.

*GSWA Office, 568 Tempe Wick Rd.,
Morristown, NJ*

Join naturalist and photographer Blaine Rothauser for an introduction to moth ecology on Friday, July 5, at 7 p.m. A hands-on outdoor “mothing” program will follow a brief slide presentation and lecture. Mr. Rothauser will set up a sodium-vapor lamp outside of GSWA’s office building on Tempe Wick Road. That light, in turn, will attract moths for observation, identification, and photography.

Participation is strictly limited to 15 people. End time for this event is left to the discretion of the presenter. Please feel free to remain until the presenter concludes his studies. 🌿

*Photographer and naturalist Blaine Rothauser photographed this Promethea silkmoth (*Callosamia promethean*) on a previous “mothing” expedition in the Great Swamp watershed region. ©2009 Blaine Rothauser.*



Teacher Education Workshops, Spring 2013

Learning about the importance of water is a vital part of any student's academic career. Join Great Swamp Watershed Association for each of these hands-on, fun-packed teacher workshops to learn more about integrating water resource education, environmental stewardship, and critical thinking skills into your current curriculum. Workshops are held jointly with Great Swamp National Wildlife Refuge and the Friends of Great Swamp National Wildlife Refuge. Workshops take place onsite at the Great Swamp National Wildlife Refuge inside the Helen C. Fenske Visitor Center located at 32 Pleasant Plains Road in Harding Township, NJ. Each event will include indoor and outdoor experiences. All participants will leave with an activity-packed teaching guide and other useful resources.

The fee for participation in each workshop is \$20/person. Up to 6 professional development credits (PDCs) may be available for attendance at each workshop. Space is limited, so please register online right now at www.GreatSwamp.org. To register by telephone, please call GSWA's Director of Outreach and Education Hazel England at 973-538-3500 x20. For more information, please write to Hazel at hazele@GreatSwamp.org.

Workshop Doubleheader: Project WET & Testing the WATERS Saturday, March 16, 9 a.m.—3 p.m.

Helen C. Fenske Visitor Center, 32 Pleasant Plains Road, Harding Township, NJ

Project WET is a collection of nearly 100 science-based, interdisciplinary activities with teacher-tested, classroom-ready lesson plans for K through 12 students. Activities use the vital importance of water to educate students about diverse topics. The newly updated guide is integrated into new online resources that make learning fun. The *Project WET* teacher's guide is only available to educators who participate in a Project WET workshop. All participants will receive a copy of the guide upon completing the session. Lessons in the guide are correlated to *New Jersey Core Curriculum Content Standards*.

Testing the WATERS! is a workshop based on material from the *Healthy Water, Healthy People* educator's guide and features engaging lessons that introduce and deepen your students' understanding of water resource issues. All activities relate to core content standards, and provide engaging instruction designed to help your students gain real-world science experience and critical problem solving skills. Participants end the workshop with a new understanding of the importance of chemical and biological water quality monitoring and the uses of data

GSWA Invites You to Support our “Wish List”

If you’re wondering how member support is making a difference, here are just a few examples:

- \$25 buys a pond study kit for one classroom
- \$50 buys a stream flow kit — including “rubber duckies” for stream monitoring
- \$100 helps buy native shrubs for restoration of the Conservation Management Area
- \$250 sponsors community outreach and education presentations and teacher workshops
- \$500 helps fund advocacy programs that educate citizens of all ages about the importance of preserving and protecting our limited natural resources
- \$1,000 buys deer exclosure fencing for three acres at the Conservation Management Area



If you would like to make a donation, or encourage your friends and neighbors to become members of GSWA, visit www.GreatSwamp.org or call Steve Reynolds at 973-538-3500, x21.

generated by water testing. They also leave with a copy of the *Healthy Water, Healthy People* guide. Material is well-suited for formal and informal educators teaching in grades 4 through 12, and beyond.

The Wonders of Wetlands (WOW!) **Saturday, May 4 , 9 a.m.—2 p.m.**

Helen C. Fenske Visitor Center, 32 Pleasant Plains Road, Harding Township, NJ

Why is a wetland like a sponge? Can recreating a wetland in a kitchen pan tell you why protecting the soil is critical for water quality? Come to this workshop and learn all the answers to these water- and wildlife-based puzzles. *The Wonders of Wetlands*, also known as WOW!, is an engaging and activity-packed guide for formal and

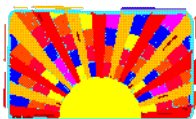
informal educators alike. It provides a resourceful and creative collection of wetland-related activities, information, and ideas that can be integrated into all areas of your curriculum. WOW! has been called, “the most comprehensive introduction to wetland issues and definitions.” The WOW! guide includes more than 50 hands-on, multidisciplinary activities in lesson-plan format, extensive background information about wetlands, ideas for student-action projects, and a wetlands resource guide. This workshop is well-suited for educators teaching in grades K through 8, as well as those who might have access to, or are considering creating their own wetland education site or field trip. 🌿

Start Your Day with GSWA

Great Swamp Watershed Association's (GSWA) Breakfast Briefing speakers series returns in March!

Our seasonal Breakfast Briefing series was developed to help busy professionals stay informed about community environmental issues without taking valuable time away from work or family life. Presentations are kept brief, focus on current environmental topics, and minimize overlap with most traditional business hours. These lecture-and-discussion events are usually held on the second Tuesday of the month from 8 to 9:30 a.m. Exceptions to this schedule are noted in the event descriptions below, so please read them carefully.

Seating is limited. Please register online to attend at www.GreatSwamp.org, or call our *Event Information Hotline* at 973-538-3500 x22 to register by telephone. GSWA members participate free of charge. Non-members are asked to make a voluntary donation of \$10/adult and \$5/child (6 to 17 years old), or \$35/family (includes 5). There is no suggested donation for children 5 years and under. Programs are suitable for all ages. For updates or cancellations, please call our *Event Information Hotline* at 973-538-3500 x22.



Are Our Bats Disappearing? Tuesday, March 12, 8–9:30 a.m.

*GSWA Office, 568 Tempe Wick Rd.,
Morristown, NJ*

On Tuesday, March 12, Great Swamp Watershed Association welcomes **Jennifer Bohrman**, lead biologist for bat research, education, and outreach at the Great Swamp National Wildlife Refuge. Ms. Bohrman led a wild bat inventory and monitoring effort at the Refuge during the summer of 2012 and frequently presents to local communities on the topic of bat conservation. In addition to offering some insight into the impact of White-nose Syndrome on bat populations in the Great Swamp, she will provide audience members with proven tips, techniques, and suggestions for protecting bats in their own back yards.



Hibernating Indiana bats. These federally endangered animals summer in the Great Swamp region. Credit: USFWS/Ann Froschauer

**Passaic River Institute
Tuesday, April 9, 8–9:30 a.m.**

*GSWA Office, 568 Tempe Wick Rd.,
Morristown, NJ*

Dr. Meiyin Wu, Associate Professor of Biology and Molecular Biology and Director of the Passaic River Institute at Montclair State University, stops by to offer some perspective on water issues affecting communities along the Passaic River downstream of Great Swamp.

**What Wildlife Tells Us About How Clean Our Water Is
Tuesday, May 14, 8–9:30 a.m.**

Location to be announced

Macroinvertebrates—known outside of scientific circles as bugs, worms, mollusks and other small, spineless creatures—are useful when it comes to studying water quality and environmental conditions in and around a stream. For instance, dragonflies, aquatic snails, and flatworms can indicate whether the water in a stream is truly clean. **Dr. Lee Pollock**, Professor Emeritus of Biology at Drew University, has studied these small creatures in the Great Swamp watershed for many years. Join the Great Swamp Watershed Association on Tuesday, May 14, from 8 to 9:30 a.m. to hear findings from his 2012 studies, along with his long-term view of environmental trends and what they mean for our local waters. This talk is given free of charge, although voluntary donations to GSWA are gratefully accepted.

State of the Streams in the Great Swamp Watershed

Tuesday, June 11, 8–9:30 a.m.

*GSWA Office, 568 Tempe Wick Rd.,
Morristown, NJ*

Water quality data has been collected from all five streams in the Great Swamp watershed for more than ten years. Over the past year, Great Swamp Watershed Association staff and volunteers have analyzed this chemical, visual, and biological data to see how our streams have changed over time. Results from this project will be published as a report entitled *The State of Our Streams*. On Tuesday, June 11, GSWA Director of Water Quality Programs **Laura Kelm** will present findings from the project that highlight areas of environmental improvement, identify sites for future restoration work, and potentially uncover pollutants that may have gone unnoticed in our watershed. In addition to a review of finding, this briefing will include a discussion of how GSWA's water testing programs might adjust to meet future needs. 🌲

twitter

Follow us at www.twitter.com/gswa

Moths In The Great Swamp Watershed *(continued from page 1)*

hodgepodge of sub-habitat types makes mothing fruitful and fun. You never know—maybe this two-part piece about Light-Ephemeral-Pleasures might get you to take a closer look at your porch light this summer.

It's a shame that misconceptions are so prevalent in nature. Moths tend to get a bad rap—Indian meal and codling moths as agricultural pests, Gypsy moths as the bane of eastern oak forests—surely there is truth to this. But when viewed under the right scientific-optic the ecosystem services moths provide far outweigh the negative aspects of their biology. Moths are beneficial insects—pollinators of crop plants and native flora, food for songbirds, beetles, wasps, mammals, and silk spinners for mankind.

Don't let old movies fool you; moths don't perform terrorist attacks on Japanese cities. With no biting mouthparts or stinging apparatus, no squirting poisons or vengeful pathogens to spread, moths are for the most part as innocuous as it gets in the natural world. They are beauty for beauty's sake. Moths are insects whose majority seeks darkness to accomplish a truncated end to a much longer life history. Lucky is the lepidopterist (a scientist that studies moths and butterflies) who gets a glimpse of the grand-finale version of a moth—the adult stage of a four-stage metamorphosis: egg, larvae (caterpillar), and pupa, (chrysalis stage)—because the

earlier parts of their lives regularly elude our detection.

If your timing is right, and you have the proper tools to attract them, adult moths are ready, willing, and quite frankly eager, to strut their stuff. The timing of their appearance, and the period in which they fly will vary from species to species. For example, the magically-massive, lime-green adult luna moths emerge from a chrysalis in early June to aloft on a breeze to last for but only a snippet in time. Five days on average is all a male Luna has left to dance. His immediate quest is that of the sweet alluring essence

of a female, her personal signature, her pheromone, cast whimsically upon the wind from glands at the tip of the abdomen. From up to seven miles away the male with his oversized, feathered antennae picks up her scattered scent

and proceeds to orchestrate a nuptial-coupling the likes of which would make an Avatar jealous—the entire conjugal visit occurring all within 48 hours of his entrance onto Creation's stage. This final act, his coda, is a spectacle of nature rivaling most others; right under our noses, in wooded parks and suburbia throughout the northeast, barely noticed by us, their bipedal brethren. (Yes, our watershed is home to plenty a luna.) Post-theater, the female lays her eggs on a host tree-twigg where a much longer portion of life history will begin.



Filbertworm moth (Cydia latiferreana).

©2012 Blaine Rothauser

With her part complete the female luna falls, her dead body expeditiously dismembered by soil militia (ants, beetles, mice, and the like) there to churn her back into the system where not a single atom is wasted. The male lingers on for a few more days, until all fat reserves garnered as a leaf-eating machine in the caterpillar days wind down like a dropped basketball at center court. Other moths, like the yellow-collared scape, may linger for a month or longer before a final repose finds it at rest on a forest floor. Still, they too pass unheralded, unsung, but complete in life's history.

It is the staggered flight periods of these animals that make mothing so much fun. One night, out of thin air, a filbertworm moth, a gilded-striped Lilliputian of sheer and utter par excellence may be attracted to the sun-like sodium-vapor lamp used to draw them closer—a week later, in the same spot, a bizarrely-schnozed vagabond crambus will take his master's place in the timing-order of moth emergence. It is never boring. Some

moths with multiple generations, like the bent-lined gray, make many appearances during the year, sometimes with large intervals between visits, but always soliciting my worn-out rejoinder, “Hey man, where ya been bro? I knew you'd come back to say a quick hello/goodbye before the season's over!” Yeah, you start talking funny when you “moth-it” alone in the stygian hours of predawn light. From March through the middle of December a cavalcade of these winged gems will cycle forth from ether's dusk and onto your porch screen. Their visages can purge the hearts and minds of even the staunchest of naturalists.



Stay tuned for the second installment of Blaine's rhapsody on moths and mothing in the Great Swamp watershed in the next issue of Across The Watershed. Part II will focus on moth ecology, species diversity, and mothing experiences at the Great Swamp National Wildlife Refuge and GSWA's own Conservation Management Area (CMA). 🌿

GSWA Experts Available to Speak to Area Groups

Do you wonder, “What is in my water?” or “What can I do to ensure clean water for my children?” These and other questions about water quality, land preservation and local efforts to protect the environment can be answered by GSWA's Speakers Bureau, who will present interesting, hands-on presentations that will educate and inspire members of your local club or group. Call today for more details: (973) 538-3500.

Lessons Learned: Morristown National Historical Park and GSWA Pair Nature and History In Collaborative Programs

by Justin Monetti, Chief of Interpretation, Morristown National Historical Park

The areas of Morris County are teeming with organizations that work closely with each other on collaborative opportunities, and the programs that are being developed with the GWSA and Morristown National Historical Park are a great example of this.

The offices of the Great Swamp Watershed Association are located in a building on the lands of Morristown National Historical Park, a unit of the National Park Service. While this allows the Association to stay close to so many of the water resources that they are protecting, it also puts them in arms reach of lands that have an important historical significance.

Those lands were home to over 10,000 troops of the Continental Army during the winter of 1779-1780. It was during this time that these brave souls endured continual starvation, massive snowfalls, and plaguing bitter cold. With very few lost, due in part to lessons learned during earlier encampments, the army emerged from this brutal environment to continue the fight and win the battles of Springfield and Connecticut Farms that spring.

Today, the park commemorates and interprets those events, and the tenacity of those that fought to keep the army together. At Morristown NHP, our mission is to protect and preserve the resources related to the winter encampment. However, the park has a diversity of resources that allow visitors with different interests to enjoy some part of it in their own way, including more than 1,700 acres of forested land, hiking trails and streams.

The vast majority of programming that is offered by the park focuses on the diverse history of that time from many perspectives.



The Jockey Hollow Unit of Morristown National Historical Park is home to the headwaters of Primrose Brook, one of the five major streams feeding the Great Swamp. Credit: Jim Lukach

Soldier, officer, camp follower, and residents of the Morristown area all had a role, a story to tell, which we continue to keep alive through various interpretive methods. Part of that story focuses on reasons that Washington's Quartermaster, Nathaniel Greene, suggested Jockey Hollow as a camp site: availability of lumber and water resources.

When I met with the Great Swamp Watershed Association last year, it was quickly apparent how their mission of protecting these resources and educating the public was so closely related to that of Morristown NHP. Through discussion with the Association's Director of Education and Outreach, Hazel England, we identified themes where we could connect visitors to both the significance of the natural as well as the historical resources. This convergence

of messages serves to strengthen the importance of this area and appeal to a wider number of people.

As we move into another year, we are looking at a series of programs that GSWA and the NPS can collaborate on that continue offering multiple perspectives where visitors can find a bit of themselves. For example, this spring we are exploring themes related to the water quality within the park. Not only is this important to the health of the watershed, but it would have been a concern for Washington. As we continue to develop these programs, we will strengthen opportunities for visitors to explore these areas and find their own personal connections beyond what we could offer individually. 🌲

ACROSS THE WATERSHED is also available electronically

Help reduce our print and mailing costs by signing up for electronic delivery of future issues of *Across the Watershed* at www.GreatSwamp.org or send an e-mail with your name and address (so we can identify you in our member database) to sreynolds@GreatSwamp.org. By giving GSWA your e-mail address, you'll also receive our monthly e-newsletter, which provides timely

information on upcoming programs and events along with news on what's happening in and around the watershed.

Your e-mail address will be used solely for the purpose of sharing information with you about GSWA-related programs and events. We will not provide your e-mail address to any other person or entity without your permission.

Madison's Tree Nursery Innovation

by Cathie Coultas, GSWA Member and Volunteer

For a number of years, the idea of a tree nursery for the Town of Madison was tossed around, but it never got much further than the doorway of the meeting room. However, with tree damage from storms Irene and Sandy, trees are now a town priority. The beautiful canopy covering our area towns has diminished each year, and the impact from soil erosion and stormwater runoff is becoming an increasing problem. Some short-sighted people say, "You plant a tree, it grows big and falls on your house." That doesn't have to be the case with careful choice of variety, careful choice of location, and proper care.

The parks in Madison, as in many towns, suffered severe damage, and there is little funding to clean up the mess and replant new trees. As a result of this situation, several "green groups," including The Friends of Madison Shade Trees, The Shade Tree Management Board, Madison Advisory Committee on Parks, The Open Space, Recreation and Historic Preservation Committee, and a well-organized and enthusiastic Community Garden Committee, are partnering on a Tree Nursery Project at Madison's new

Community Garden. It is a perfect spot for a tree nursery, with sun, water, and a fence. Our first unbranched tree seedlings, also known as whips, will be planted this spring beginning with 25 small oak trees and 10 shag bark hickories.

Growing hickory trees is of special interest because of their very strong and very deep root system. Our whips will be planted in tubs, placed in a trench, and surrounded with woodchips or mulch to protect them from winter weather. After three to five years, we will relocate the saplings to permanent homes in one of Madison's many parks. "Caregiver" volunteers will maintain the trees for three years until they can survive on their own. We also will protect the trees from deer damage. Local Scouts and families would make ideal caregivers for the project.

Other community gardens in the region might think of setting aside an area for

growing their own small trees. Certain nurseries specialize in the cultivation of whips. Whips are also made available free-of-charge under certain State programs, and by the New Jersey Audubon Society. 🌱



The shagbark hickory (Carya ovata) is native to the eastern U.S. and Canada, and one of several tree species to be grown at Madison's Community Garden.

©2012 njurbanforest.com

From the Desk *(continued from page 3)*

land's ability to act as a critical sponge for stormwater and flood storage.

- We can, and do, improve the management of public and private lands—encouraging watershed-friendly practices such as water retention and the planting and replanting of trees and native plants. Stewardship at our own 60-acre preserve models the practices we preach, restoring forested wetland that will be friendly to our watershed as well as our climate.
- We can, and do, provide environmental education. GSWA conducts public programs on global climate change as it affects New Jersey and our back yards. We educate our children and teach our teachers about the importance of preserving and protecting our environment. We help create the next generation of environmental stewards.
- We can, and do, monitor water quality. GSWA samples the water in the five streams that feed the Great Swamp to accurately monitor their quality and quantity, and then we act when we find problems. Three years ago we discovered persistent pollution in Loantaka Brook. This led to a grant from the Department of Environmental Protection, and a major project to reduce pollution coming from the horses at Seaton Hackney stables that is improving stormwater runoff into the stream.
- We can, and do, encourage people to reduce their water footprints.
- We can, and do, advocate for sensible, sustainable development. We intervene when inappropriate projects are proposed, and we work to improve them.

And what can you do? This is a short list of small steps everyone can take to lessen the negative effects of climate change that we adapted from the Union of Concerned Scientists. Some of them have to do with water—our most direct concern here at GSWA—and some do not. But it's always important to remember that it's all connected. Every small act of consideration helps make a better watershed, a better community, and a better world. Here's the list:

- Become more carbon conscious.
- Make sure your car gets the best gas mileage possible, or even drive a hybrid.
- Look for the Energy Star label when buying appliances.
- Choose clean power.
- Unplug under-utilized appliances such as that extra refrigerator or freezer.
- Get a home energy audit, and make a pledge to reduce your energy use by a goal amount.
- Turn down your thermostat, Sweaters are in!
- Work towards making your property run-off neutral after rain storms.
- Inspire friends and family to reduce their carbon emissions.
- Let our elected officials know that global warming and environmental protection are important to you. 🌱

Like GSWA
and join the cause on



Every Drop Counts! Tips and Tricks to Save Water Inside Your Home: Part I: The Bathroom

by Laura Kelm, GSWA Director of Water Quality Programs, and Mary Fisher, GSWA Intern 2012

What area of your home uses the most water? It's probably not watering the lawn, since around 70% of average household water use takes place inside the home. The answer may surprise you, but the majority of water used in a home is in the bathroom. Showering and toilet usage account for more than 40% of a household's water use, and that's not even considering the water used washing your hands or brushing your teeth.

There are many ways we use water in our daily lives, and plenty of tips and tricks for reducing the amount of water we use. (Bonus: saving water means saving money on your water bill!) Saving water also saves energy—the process of treating water to drinking standards, delivering it to homes and businesses, and then treating the wastewater is a very energy-intensive process. The less water going through the treatment and delivery process, the less energy is used. The less warm or hot water we use in our homes, the less water we need to heat, which also helps reduce energy bills.

Let's get started in the bathroom, where a large chunk of the water use inside our homes takes place.

The Toilet

How old is your toilet? You probably haven't thrown it a birthday party in a while, so it's also a safe bet to say that you really haven't thought a lot about its age before now. Still, it's an important question to consider, especially when you want to

determine how much water gets used every time you flush. Older toilets (pre-1994) can use 3.5 to 7 gallons of water per flush (gpf). Newer standard toilets only use 1.6 gpf. By replacing an old 3.5 gpf toilet with a newer standard model, the average U.S. household of four people might save about 13,870 gallons of water per year. As if a savings like that isn't enough to blow your mind, why not take things one step further? If the same average family of four replaces that newer toilet with a bleeding-edge 1.28 gpf EPA WaterSense model, they might save an extra 2,336 gallons per year. That's an extra \$150 in savings over the toilet's entire lifetime. WaterSense-rated toilets sell for as little as \$100, so the investment is definitely worth investigating. Now, who says toilets aren't exciting?

If you're really attached to your old toilet—and let's face it, many of us are for one reason or another—you can still reap plenty of water savings. All you need to do is STOP THE LEAK! Find out if your toilet is leaking by following these easy steps:

1. Open the tank.
2. Remove any in-tank bowl cleaners that color the water. (You'll want clear water in the bowl and tank before you run this test, so you might need to flush.)
3. Add some dye to the tank. Use food coloring, instant coffee, colored drink mix, or some other harmless, non-toxic tint, but remember to use enough of it to turn the tank water a deep, visible color.



One of these flappers could help you save water. The other one will just drink all of your gin.

4. Leave the dye in the tank for 30 minutes.
(This is a good time to cordon off the bathroom so no one “accidentally” ruins your test.)
5. If any of the dyed water from the tank appears in the toilet bowl after 30 minutes, you have a leak.

Toilet leaks are most often caused by an old flapper that has deteriorated—and, no, we aren’t talking about the good kind of flapper from the 1920s. A new toilet flapper costs less than \$5 and can be installed in 10 minutes.

The Shower

The amount of water used during a shower depends on the length of the shower and an often unknown variable. That variable is not, as you might suspect, related to the presence or absence of a teenager in your home, but is related to the flow rate of the shower head you use. Some shower heads have the flow rate stamped on them. The stamp often appears as a small number followed by the letters “gpm,” or gallons per minute. If there is no visible stamp, assume that most of today’s households contain post-1994 standard showerheads that use

(continued on next page)

Every Drop Counts *(continued from previous page)*

water at a rate of 2.5 gmp. If you have an older showerhead (usually rated at 3 gpm), switching to the new standard model might save 5,840 gallons of water per year. Staggering, isn't it? But wait, there's more! Switching from one of those post-1994 showerheads to one with a WaterSense label—one rated at 2 gpm—might save an additional 5,840 or more gallons of water per year. WaterSense-rated showerheads sell for as little as \$10. You could not ask for a more cost-effective way to save water and money. Or, could you?

You say you're pinching pennies? You say there's a recession on? Well then, here's a great way to save water that won't cost one thin dime. Take a shorter shower. The average U.S. citizen takes an eight-minute

shower. Cut that time down to 5 minutes, and your average U.S. household might save 10,950 gallons of water per year. Better yet, why not combine the two great tastes that taste great together and take your shorter five-minute shower under a cheap-as-chips WaterSense-rated showerhead. You'll use as little as 10 gallons of water per shower that way. Your water-miserly ways in the bathroom can become the stuff of legend (to us at least). And don't forget about all the energy savings from having to heat less water!

The Cliffhanger

Don't miss Part II of our exciting and death-defying series on water conservation inside the home in the next issue of *Across The Watershed*. We'll trek out of the relative safety of the bathroom to conquer the unparalleled heights of the laundry room, and brave the dangers of that dark morass known as the kitchen. All this is part of GSWA's continual effort to help you save water, energy, and some cash.

N.B. – If you're baffled by all this talk of WaterSense-this and Watersense-that, check out the U.S. Environmental Protection Agency's WaterSense website online at www.epa.gov/watersense/. 🌱



2012 Gala Thanks

GSWA thanks all of the underwriters, donors, and attendees who helped us honor Dr. Emile DeVito (pictured) at our 2012 Gala Celebration on October 4, 2012. We had a wonderful evening. We hope you did too! See you at the 2013 Gala on Thursday, October 3, 2013! Credit: Debbie Weisman

GSWA Gets New Water Monitoring Equipment

In addition to collecting water samples for laboratory analysis, GSWA has rented a water quality meter to use during stream monitoring trips. Since a meter can be quite costly to own, renting has worked well during those four times of the year when our Adopt-A-Stream monitoring program is operating. However, as GSWA undertakes more environmental restoration projects, we have started to recognize more of the benefits of having such a device close at hand and ready to be deployed in the field. For example, we will be able to quickly investigate sudden and unexpected water quality concerns, monitor streams on-the-fly during and immediately following rainstorms, and conduct pre- and post-restoration monitoring without incurring significant rental expenses.

GSWA recently received grants from the Hyde & Watson Foundation and the Norcross Wildlife Foundation to purchase a water quality meter and associated supplies. We are currently evaluating our options and hope to find a model that best meets our needs. Our future meter will be capable of measuring temperature, pH, dissolved oxygen, and conductivity. We are also looking at models capable of calculating total dissolved solids from the conductivity measurement. This would give us valuable



GSWA volunteers Roger Edwards (l) and Gene Fox (r) use a rented water quality meter to test water in Penn's Brook, May 2012.

information about the impact of road salt on our streams—a pollutant that has been of great concern in our watershed in recent years.

We are grateful to the Hyde & Watson Foundation and the Norcross Wildlife Foundation for funding this purchase and allowing us to greatly expand our stream monitoring capabilities. 🌲

Save The Date For A Special Event!

The Passaic—An American River With Author Mary Bruno

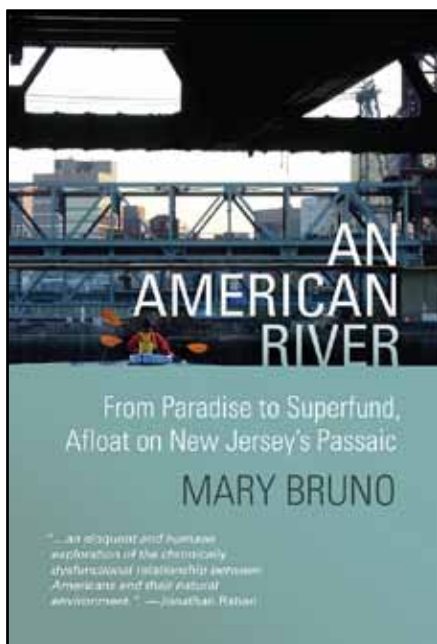
Monday, March 18, 2013 • doors open at 7 p.m.

**Somerset County Environmental Education Center
190 Lord Stirling Road, Basking Ridge, NJ**

New Jersey's Passaic River rises in the near-pristine wetlands of the Great Swamp watershed and ends in a federal superfund site. Author Mary Bruno has kayaked its length in an effort to discover what happened to her hometown river.

On Monday, March 18, at 7:00 p.m., the Great Swamp Watershed Association and the Somerset County Environmental Education Center will host an evening of discussion and reflection on the Passaic and the memoir Mary published about her journey in 2012. The book, *An American River: From Paradise to Superfund, Afloat on New Jersey's Passaic*, invites detours into the river's flood-prone natural history, New Jersey's unique geology, the corrupt practices of the Newark chemical plant that produced Agent Orange and poisoned the river with dioxin, and into the lives of an unforgettable cast of characters who have lived and worked along the Passaic and who are trying, even now, to save it. Part natural history, part personal history, part rollicking adventure, the book is a narrative meditation on the wonder of nature, the enduring ties of family, and the power of water and loss.

Mary Bruno is a former ecological researcher turned writer who has covered a wide variety of issues, from sports and science to art and healthcare, for publications like *Newsweek*, the *Seattle Weekly*, and *New York Woman Magazine*. She has edited and produced online content for *www.ABCNEWS.com*, filled the role of Executive Editor at *Grist* magazine, and was the founding editor of *www.MrShowBiz.com*. She also has served in leadership positions at *www.OnHealth.com* and *www.HealthTrack.com*. Mary currently serves as Editor-in-Chief of *www.Crosscut.com*, a Pacific Northwest news site.



GSWA Announces Changes to its Board of Trustees, Staff


Great Swamp Watershed Association (GSWA) sends a fond farewell and thanks to two outgoing members of its Board of Trustees, **Eric Inglis** and **Astri Baillie**. Our congratulations go out to Astri and former GSWA Chairman Ben Wolkowitz who were both elected to the Council of the Borough of Madison this past November.

Among the staff we say goodbye to our Development Associate, seven-year GSWA veteran **Lisa Testa**, and extend a warm welcome to our new Membership Associate, **Kelly Martin**.

Lisa ended her tenure with us in November 2012 to pursue an opportunity in the field of accounting. Thank you, Lisa, for all you have done for us here at GSWA!



Kelly joined the GSWA team in December 2012, after a truly exceptional turn as a volunteer at our 2012 Gala Celebration. She will be assisting Development Director Stephen Howard and Director of Communications & Membership Steve Reynolds with all aspects of the organization's membership program, as well as other fundraising activities. Please welcome her the next time you drop by our office!

If you have an interest in environmental stewardship, education, and advocacy, and seek an opportunity to provide your support and services as a member of GSWA's Board of Trustees, please contact Executive Director Sally Rubin at 973-538-3500 or write to srubin@GreatSwamp.org. 

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.

Got Some Time? Volunteer!

There are lots of ways to help GSWA protect our waters and our land. Here are some upcoming opportunities for you, your family, and your friends to become volunteers. Please register online at www.GreatSwamp.org if you plan to attend one or all of these events.

Each of our scheduled volunteer events includes outdoor components. Please dress for the weather. Conditions may be wet and muddy. Long pants and sturdy shoes or boots are strongly recommended. Long sleeves are optional, but recommended. Feel free to bring your own water in a reusable water bottle. Volunteers should be 15 years of age or older.

From time to time, GSWA staff will call on volunteers to assist with additional land stewardship, water quality testing, and fundraising tasks. Impromptu calls for volunteers are distributed via email on an “as needed” basis. If you would like to be added to our volunteer email list, or you would like more information about volunteering with GSWA, please call us at 973-538-3500.

Volunteer Work Day at the Conservation Management Area (CMA) Saturday, April 6, 9 a.m.—1 p.m.

*GSWA Conservation Management Area, 1
Tiger Lily Ln., Harding Township, NJ*

Spring has sprung! It's time to volunteer for an outdoor work day at Great Swamp Watershed Association's 53-acre Conservation Management Area (CMA) in Harding, NJ. GSWA needs help on Saturday, April 6—9:00 a.m. to 1:00 p.m.—to maintain and improve access to this secluded natural treasure. Tasks will be varied and may include trail maintenance, invasive plant removal, and cleaning nest boxes for our feathered friends in advance of spring migration. There's still some damage from Hurricane Sandy that needs to be addressed too, so please help us get this public open space ready for new springtime visitors! All tools and supplies provided. Just bring your energy and enthusiasm! New volunteers will be asked to sign a waiver before beginning work.

GSWA volunteers (l to r) Brian Johnson, Robert Beck, Aaron Alaman, and Doug Mill—all on staff at REI in East Hanover—pose atop the new boardwalk bridge they built and placed for us during our Conservation Management Area Volunteer Day on March 24, 2012.



Stream Restoration Project for Volunteers Sunday, May 5, time to be announced

*Loantaka Brook Reservation, 43 South Street,
Morristown, NJ*

Volunteers will focus their efforts on creating a vegetated swale that carries runoff from the nearby parking lot into Loantaka Brook. A swale is a low-lying piece of land where water often collects. In this case, volunteers will add new native plants to the swale, which will slow down and soak up rain water before it reaches Loantaka Brook. This low-impact development (or LID) technique helps prevent water pollution from stormwater runoff. In addition to planting, volunteers will also help remove invasive plant species that have a negative effect on the local environment. Participants should gather at the South Street Recreation Area located at the address given above. Check www.GreatSwamp.org for more details as they become available.

Please be sure to let us know if you change your e-mail address. Send a note with your name, address, and old e-mail address to sreynolds@GreatSwamp.org so you don't miss out on our new monthly e-newsletters.

Stream Assessment Training for Volunteers Sunday, May 19, 9 a.m.—3 p.m.

*GSWA Office, 568 Tempe Wick Rd.,
Morristown, NJ*

Want to get outside and help the Great Swamp Watershed Association (GSWA) protect local waterways? We are looking for volunteers to conduct visual environmental assessments of streams in our watershed. Visual assessments are conducted at stream reaches throughout the region twice each year, and they help us know what is happening along our streams. Visual assessment volunteers record information such as stream depth, width, the presence of streambank erosion, and more! So, if you like spending time outdoors and love the peace of mind that comes along with knowing that you make a real difference to our local environment, attend our volunteer training session and become a GSWA visual assessment volunteer this spring! Training also includes instruction on conducting macroinvertebrate assessments which measure water health by studying populations of bugs, worms, insects, and other small, spineless aquatic wildlife. This training is conducted in partnership with the AmeriCorp's New Jersey Watershed Ambassador Program. 🌿




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



GREAT SWAMP WATERSHED ASSOCIATION

Post Office Box 300
New Vernon, NJ 07976
(973) 538-3500
www.GreatSwamp.org

Non-Profit Org.
US Postage
PAID
Permit #38
Chester, NJ

 Printed on recycled paper.
Please recycle again.