



**Great Swamp Watershed Association**

The Passaic River **WATERKEEPER®** ALLIANCE Affiliate

# Across the Watershed

**Fall-Winter 2016**

*Protecting our Waters and our Land for More Than 35 Years*

## Build It and They Will Come

### A Story of Unfolding Stewardship over a Decade in the Making!

*by Hazel England, Director of Education, Outreach, and Land Stewardship*

Looking back recently over more than twelve years of stewardship carried out at Great Swamp Watershed Association's Conservation Management Area (CMA), I realized that I have written numerous newsletter articles detailing 'exciting new developments,' and 'happy announcements of work finished' at GSWA's flagship 53-acre property in Harding, NJ! From the excitement of finally completing the fencing of 23 acres of forested wetlands in the fall

of 2005, with a majority of volunteer hours, to creating the 300-plus feet of elevated marsh boardwalk trail in 2008, to restoring and enhancing vernal pools for wildlife; to adding interpretive signs and kiosks at the trailheads, there have been many chances to announce exciting completions of new projects in more than a decade of management and stewardship at the property.

In retrospect, many of these newsletter articles could have been summarized by

*(continued on page 4)*



*A group of kids from Cornerstone Family Programs in Morristown enjoys a day of educational programming at the CMA.*

# From the Desk of the Executive Director



by Sally Rubin

**G**reat Swamp Watershed Association has been busier than usual this past spring and summer — we’ve been creating a new website, which will be unveiled this winter, continuing the process to become an Accredited Land Trust, which will enhance the credibility of our organization by committing us to the highest ethical and operating standards and practices, and we’ve been in deep discussions of mission and vision expansion, looking downstream on the Passaic for opportunities where we can help.

These discussions of downstream expansion began in March, when we hosted and facilitated a stakeholders’ meeting with many of the organizations who work along the Passaic. Representatives from Hackensack Riverkeeper, Highlands Council, Ironbound Community Corporation, Morris County Park Commission, New Jersey Conservation Foundation, NY/NJ Baykeeper, Passaic Valley Sewerage Commission, PSE&G, Rutgers Cooperative Extension Water Resources Program, and Trust for Public Land, among others, all joined in on the conversation. We discussed the most pressing threats to the Passaic River, how various organizations are addressing those threats, and identified opportunities for improvement. Our goal was to evaluate whether the Passaic River would benefit from GSWA’s involvement downstream.

The discussions revealed that there was a need for increased environmental education, stream monitoring, advocacy, and outreach, along the Passaic. This finding led to a series of strategic planning meetings of the GSWA Board of Trustees, resulting in the following new mission and vision:

## **OUR NEW MISSION**

The Great Swamp Watershed Association is dedicated to protecting and improving the water resources of the Passaic River region, from the Great Swamp headwaters to Newark Bay, for present and future generations. Through education, advocacy, science, land preservation and stewardship, in collaboration with partners, we work to instill our communities with an awareness of water’s effect on health and the beauty of the environment, from source to sea.

## **OUR NEW VISION**

We support a “One River, One Community” vision for the many rural, suburban, and urban communities along the Passaic River, for a future in which all of the region’s citizens understand that the health of the watershed is integrally connected to the quality of their daily lives. We imagine a time in which residents, businesses, and governments along the Passaic work actively and cooperatively to protect and promote clean, safe water, and in turn are rewarded with a bountiful environment that supplies

healthy water for drinking and recreation, provides controls for flooding and erosion, supports abundant vegetation and wildlife, and forever inspires with its natural beauty.

As part of this expansion, and as recommended by the stakeholder meeting, GSWA applied to become The Passaic River **WATERKEEPER® ALLIANCE** Affiliate and on July 28, we were officially accepted into the **WATERKEEPER® ALLIANCE** Affiliate program.

Being the Passaic River **WATERKEEPER® ALLIANCE** Affiliate will facilitate expansion of our impactful and highly regarded scientific water quality monitoring, education, outreach, and advocacy programs downstream. We view our new role as being the Voice of the River, a natural fit for GSWA, which has spent the past 35 years protecting the headwaters of the Passaic.

But fear not, Great Swamp Watershed! Though we are expanding our mission, we are not changing it. We will continue to steward our land, conduct water quality monitoring and improvement projects, provide educational and outreach programs, and advocate on appropriate issues in the Great Swamp region. In fact, we have expanded our program staff by 60% this year to ensure that we continue to deliver the stellar programs you've come to recognize in the region we have worked in for so long. 🌲



## Across the Watershed

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

GSWA is a member-supported non-profit organization that has been protecting the waters and the land of the Great Swamp Watershed for more than 35 years.

**Editor:** Sally Rubin

**Designer:** Ann Campbell

### Contributors:

Hazel England  
 Ari Kaufman  
 Sandra LaVigne  
 Sue Levine  
 Kelly Martin  
 Chris Mezzacappa  
 John Neale  
 Kristina Necovska  
 Rick Porter  
 Debbie Rice  
 Dan Ross  
 Sally Rubin

### In This Issue:

Build It and They Will Come	1
From the Executive Director	2
Working on the Website	7
Outdoor Programs	8
Crafting Workshops	11
The Autumn Weather is Calling	12
Speaker Series	14
2016 Gala Celebration	16
WOW, Your Bugs are so Much Bigger	18
Creating Environmental Problem Solvers	20
Stakeholder Notification/Public Notice	22
Testing for Lead in Drinking Water	23
From the Financial Corner	23
Down to the River We Ride	24
Household Cleaners	25
Holiday Cordial Tasting Party	26
Changes in Water Quality	28
Welcome Kristina Necovska	29
Plastics in Our Waterways	30

## **Build It and They Will Come** *(continued from page 1)*

the much briefer and pithier statement — *'build it and they will come.'*

**Build** fence around 30 acres of upland and wetland forest habitat to exclude voracious deer, and “they,” the native forest understory shrubs and tree seedlings of tulip poplar, oaks, hickories and blueberries, protected from deer browse by an eight-foot-high fence, are able to gradually regenerate the complex understory that this type of forest should contain. A walk at the CMA no longer allows views through the understory of several hundred feet, but showcases the dense and growing understory of a regenerating, primarily native forest. It is so unusual to have such a large piece of deer-protected forest that botanists from Raritan Valley Community College are using the site for plot sampling of plant biodiversity as a comparison site in a Piedmont study of native forests and the impacts of deer, and ecology students from Drew University use the site in an annual survey of small mammal populations in the region.

**Build** simple wooden bench seating areas with untold hours of volunteer labor, and outdoor teaching areas are created allowing for expanded public programs on subjects ranging from native and invasive plant identification, New Jersey forest ecology, night noise hikes to listen for owls, and wetland hydrology classes to occur at the property. It is much easier to teach effectively when students are gathered around and able to see, rather than strung out along a narrow trail. This is evidenced by the long and growing list of schools, community groups and colleges that have visited the property for GSWA-led programming over the last year. Hundreds of students from Rutgers, William Paterson and Fairleigh Dickenson University, Bloomfield and Passaic County Community Colleges and area high schools and elementary schools, enjoyed a variety of programming at the site over the year. Highlights included 50 young second and third grade students from the Cornerstone program in Morristown, who visited twice over the summer for healthy, energizing nature hikes around the property, and learned hands-on about the creatures that live in the CMA streams and planted native perennials along their banks. Other notable visitors were six (count 'em) AP Environmental Science classes of Chatham High Schoolers who each spent a full day measuring tree biodiversity and collecting



*Kids prepare pots for native plants during an educational program with Cornerstone Family Programs in Morristown.*



*Kids from Cornerstone Family Programs show off their painted pots during an educational program.*

chemical and biological data as they experienced firsthand terrestrial ecology and aquatic field skills, while gathering data for further study back in their classroom. The list of those who have visited is diverse and growing, but we always welcome visitors — contact Hazel at [hazele@greatswamp.org](mailto:hazele@greatswamp.org) if you are interested in a tour or program at the CMA (see box at right for a full list of those who visited this year).

**Build** thousands of feet of boardwalk, miles of mulched trail and keep adding more mileage with innovative trail expansions and hikers, dog walkers and students of all ages will come! They utilize our well-marked loop trails for engaging ecological lessons, casual Sunday hikes or vigorous calorie-burning exercising sessions. We are able to conduct more of our public programming at the CMA, but are often pleasantly surprised to drive up to the site and find a group of cross country runners who have decided to run there, or a couple walking their dogs (on leash of course), enjoying the ability to take their pup for a walk while they enjoy the scenery and exercise at the same time.

### Groups that visited the CMA this year:

- Fairleigh Dickinson University: General Ecology, Land Management
- Drew University: Small Mammal Surveys
- William Paterson University: Wetlands Hydrology
- Bloomfield College: General Ecology
- Chatham High School: Water Monitoring and Vegetation Studies
- Madison Recreational Program
- Sundance School, North Plainfield
- Garden Club of Madison
- Garden Club of Morristown
- Rutgers University: Wetlands Hydrology and Fence Vegetation Surveys
- Harding School: Birding Programs
- Cornerstone Family Programs: General Ecology, Macroinvertebrate Studies
- Bayonne School Summer Program: Ecology Hike

**Build** back the diversity of native plants that should be present with back-breaking volunteer-led re-plantings of thousands of tiny, fragile seedlings and shrubs, and remove the much larger, seemingly invincible invasive ones that should not, and the complex assemblage of birds, insects and small mammals able to live and breed at the CMA forest grows ever larger and more varied. Enhancing vernal pools at the site over the last three years to deepen them and plug outflows with fallen tree material and berms has kept water present in these

*(continued on next page)*

## **Build It and They Will Come** *(continued from previous page)*

spring-fed shallow pools for a critical few days longer in the spring, allowing wood frogs, spring peepers and chorus frogs to effectively complete their breeding cycle before the pools dry out. Our annual vernal pool explorations at the site held in late March and April often yield sights of vocalizing spring peepers, breeding wood frogs, and multiple egg masses of these tiny amphibians who call the CMA ponds home to entranced participants in our nighttime vernal pool adventures.

**Build** a network of helpers. The backbone of our network is our core of seemingly tireless volunteers who enable us to lead larger corporate and community groups and who work alone and in small groups in the hot, wet and cold of all twelve months' conditions. (You know who you are, but we couldn't do what we do without you, and I thank you for your continued work at the property.) We've built a network of ecological experts we can rely on for input and advice to enable our stewardship decisions to be

built on best practices available, and to utilize new and innovative solutions to managing a property with volunteers. Our corporate partners who, clad in brightly-sloganed T shirts like a group of colorful ants, swarm the property for a day to perform the most energetic of stewardship tasks, which could be anything from barrowing yards of mulch to carrying lumber long distances to build new and repair old boardwalks. Partners this year have included returning team members from Goldman Sachs Community TeamWorks, New Jersey American Water Company employees, BASF Science Academy High School students from throughout North America, Northern New Jersey Geocachers, and Madison and Pingry High Schoolers gaining hands-on field experience while they benefit from community service hours.

As you can see the 'build it' covers many aspects of the value of the CMA, and the 'they' is manifold, but the overall result is a developing gem of ecological management, expanding biodiversity, and a great example of leveraging the work of volunteers into concrete, physical improvements at the property. WE hope you will 'come' and see for yourself the strides we have made there this year! 🌲



*Director of Water Quality Programs, Sandra LaVigne, teaches kids about stream habitat during an educational program.*

## Working on the Website

This summer, GSWA began the process of having a new website designed and built. The website will make it easier for users to find water quality information, upcoming events, and other watershed news. We look forward to unveiling the new website this winter!



Members of the website committee, left to right: Sally Rubin, Kelly Martin, John Neale, Sue Kessel, and Web Developer Ben Shulkin. Board Chair Matt Krauser listens in the background. Not pictured: Ann Campbell.

### Interested in volunteering?

If you are interested in getting actively involved in efforts to protect and preserve the watershed, GSWA has a number of volunteer opportunities (see [GreatSwamp.org/how-you-can-help/volunteer-opportunities/](http://GreatSwamp.org/how-you-can-help/volunteer-opportunities/)).

Please send an email to [volunteer@GreatSwamp.org](mailto:volunteer@GreatSwamp.org) if you would like to volunteer!

# Outdoor Programs

**D**o you want to explore the Great Swamp region? Then join the Great Swamp Watershed Association (GSWA) for one of our outdoor programs this fall and winter. These programs are fun, informative, and accessible for people of all ages and skill levels (unless otherwise noted). We'll see you outside!

## **Shades of Autumn Hike**

**Sunday, September 25, 11 a.m.—12:30 p.m.**

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

Join GSWA Education Associate Dan Ross as he leads a fun-filled hike along the Horizon Trail at the CMA and learn about why deciduous trees lose their leaves in the fall, why they change colors and other interesting facts along the way! Make sure to keep your eyes peeled for squirrels and chipmunks collecting nuts for the coming months, and observe the forest changing as it prepares for the cooler months to come. Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org) or call (973) 538-3500.

## **Columbus Day Explorers**

**Monday, October 10, 10 a.m.—noon**

*Giralda Farms Preserve, Woodland Avenue,  
Chatham Township (next to St. Huberts)*

Embrace your inner Columbus and explore Giralda Farms in Chatham Township with GSWA. Hikers will have the chance to create some fall crafts before hitting the trails. Once the hike begins, your guides, GSWA's

Director of Education and Outreach Hazel England and GSWA Education Associate Dan Ross, will teach you how to look for signs of wildlife that are getting ready for winter or migrating through. Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org) or call (973) 538-3500.

## **Enchanted Hike**

**Saturday, October 29, 3:30 - 5 p.m.**

*Jockey Hollow National Historical Park  
580 Tempe Wick Road, Morristown*

As the shadows lengthen and the day's light grows shorter, enjoy some warm apple cider along a late afternoon hike as NPS Park Historian Eric Olsen and GSWA Education Associate Dan Ross tell seasonal stories about the origins of the Jack O' Lantern, old time superstitions, and explore other



*A volunteer builds a boardwalk at the CMA*



tales and folklore to the backdrop of historic Jockey Hollow. You might just want to bring along your own lantern to ward off any evil spirits that might be lingering nearby! Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org) or call (973) 538-3500.

**Volunteer Workday – Straightening up the CMA Sunday, November 20, 8:30 a.m. – 12:30 p.m.**

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

Help us maintain and improve access to our 55-acre Conservation Management Area (CMA) located in Harding Township, while burning off some calories before the gluttonous winter holidays. This natural gem includes areas of upland forest, swamp, and wetlands. Tasks will include trail maintenance, fence repair, and invasive plant removal, (there will also be lighter tasks available). Bring your best holiday-season energy and enthusiasm! Conditions may be wet and muddy. Long pants and sturdy shoes or boots are essential. We'll bring the coffee and donuts to fuel our work. Must be 12 years or older to participate. Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org) or call (973) 538-3500.

**Downstream Adventures: South Mountain Reservation Sunday, November 27, 10 a.m. – 1 p.m.**

*South Mountain Reservation  
Meeting Location TBD*

Make a pilgrimage to South Mountain Reservation and join GSWA Education Associate Dan Ross in burning off some excess calories after the holiday binge. We'll enjoy the scenery of this beautiful

Essex County Park, explore the trail system and catch some native wildlife making preparations for the long cold months to follow. You truly won't want to miss this installment of our downstream adventures! Please note: This is a difficult hike of over 4 miles and considerable elevation. Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org) or call (973) 538-3500.



*Credit Hazel England*

**“Members Only” Behind the Scenes Hike Sunday, December 4, 10 a.m. – noon**

*Great Swamp National Wildlife Refuge  
Bluebird Lot, approx. 756 Pleasant Plains  
Road, Basking Ridge*

Go behind the scenes at the Great Swamp National Wildlife Refuge to places that are not open to the public during this special members-only hike. GSWA Director of Education and Outreach Hazel England will show you some of the natural wonders

*(continued on next page)*

## Outdoor Programs *(continued from previous page)*

that are squirreled away behind the scenes at the refuge. Warm clothing and waterproof footwear — especially hiking boots — are strongly recommended for this hike. Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org) or call (973) 538-3500.

### **Winter Nature Detectives Hike** **Sunday, January 8, 2017, 10 a.m. – noon**

*Great Swamp National Wildlife Refuge  
Orange Trail – Approx. 77 Meyersville Road,  
Green Village*

Set off in hot pursuit of the region's most-wanted wintertime wildlife on this nature detective discovery hike at Great Swamp National Wildlife Refuge. Learn how to identify animals from their tracks, scats and other leave behind clues. Spy on secret hideouts used by birds, wintering insects, and other woodland creatures. Unmask the dining preferences of deer, raccoons, and even coyotes by putting the magnifying glass to some scat. All this detective work

is easier than you think, plus it's fun being outdoors in the winter! Recommended for all, but especially children 5 to 12 years old. Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org) or call (973) 538-3500.

### **Important Information About Events**

Please register as requested for each program listed here (*see descriptions*). Unless otherwise noted, current GSWA members participate free of charge. Nonmembers are asked to make a recommended donation of \$10/adult and \$5/child. There is no recommended donation for children five or under. Please dress for the weather when attending an outdoor program. Conditions may be wet, muddy, hot, or cold.

Event dates, times, and locations are subject to change. Provide your email address or phone number at registration and GSWA will make every effort to inform you about scheduling changes. 🌲

## **Have You Considered Including GSWA in Your Estate Plans?**

Designating the Great Swamp Watershed Association as a beneficiary in your will is a sure way to continue your support for our work and sustain it long into the future. It could also be a way to make a much larger gift than is possible during your lifetime.

Specific language in your will should of course be reviewed with your attorney. For more information on GSWA's Planned Giving program, please contact Sally Rubin, Executive Director at (973) 538-3500 or [srubin@greatswamp.org](mailto:srubin@greatswamp.org).

Do you already have GSWA named as beneficiary in your will? Please let us know, we would love to thank you and recognize your support in our next newsletter. *Perhaps your commitment can be an inspiration for others to do the same.*

## **Autumn Crafting with Native Plants Workshop** **Wednesday, November 16, 6–7:30 p.m.**

*GSWA Headquarters, 568 Tempe Wick Road, Morristown, NJ*

Native plants not only provide critical food and habitats for our birds and woodland animals, but they can also bring a pop of color and décor to your living room or porch for the holidays too! All too often invasive plants such as oriental bittersweet are selected for decorative purposes and they can then spread their berries and seeds, increasing their reach even further! Learn how to make beautiful arrangements using only native plant materials in this fun workshop and bring home a decorative piece for the holidays! There's a \$10 fee to participate in this event, regardless of membership. Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org), or call (973) 538-3500.

## **December Holiday Crafting: Holiday Candles** **Wednesday, December 7, 6–7:30 p.m.**

*GSWA Headquarters, 568 Tempe Wick Road, Morristown, NJ*

Join Education Associate Dan Ross for a fun-filled DIY workshop at GSWA's office. Learn how to make your very own holiday themed candles, and bring home this rustic keepsake that will be sure to light up your holiday gatherings, or to be given as a creative and unique gift. There's a \$10 fee to participate in this event, regardless of membership. Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org), or call (973) 538-3500. 🌲

Like GSWA  
and join the cause on

facebook.

### **GSWA Experts Available to Speak to Area Groups**

Do you wonder, "What is in my water?" or "What can I do to keep water clean for my children?" These and other questions about water quality, land preservation, and local efforts to protect the environment can be answered by the Great Swamp Watershed Association (GSWA). GSWA speakers give interesting, hands-on presentations that will educate and inspire members of your local club or group. Call (973) 538-3500 for more details.

# The Autumn Weather is Calling!

by Dan Ross, Education Associate

As the air grows brisk, and the days get shorter, there's no better time to get outside and immerse yourself in nature! The sights and sounds of autumn are all around us; from the changing colors of the tree canopy to the noticeable scurry of woodland animals preparing for the long harsh months ahead. Yet amidst the hustle and bustle of nature, something seems to be missing, or gone awry, as if nature has moved on without us.

All too often the iconic scenes of children playing in leaf piles, or climbing to the top branches for the biggest juiciest apple, have disappeared from the landscape. Trails go unexplored, forts go unassembled, bugs are left to their own devices. Rocks and logs remain in place, sheltering newts and salamanders from prying eyes, and streams gurgle along undisturbed. No, there hasn't been a tragic shortage of children in the world, but rather a disconnect between their attention spans and the fascination and wonderful excitement that only nature can offer.

The term "nature deficit disorder" was first coined by Richard Louv, author of "Last Child in the Woods," and it alludes to the fact that people, most notably children, are spending far less time outdoors, which he believes has resulted in a wide range of behavioral problems. Children are growing into young adults with asthma, allergies, and a complete disregard for the outdoors. In some small way, the magic and excitement of nature has been extinguished.

While these correlations have not been accepted by the medical and mental health fields, and you won't find the phrase in any clinical mental health manuals, at least anecdotally, I think we can all recall fond memories of childhood playing outdoors and embracing nature and feeling more in touch with the changing of the seasons.

In fact, according to the latest polls, Americans spend nearly 90% of their time indoors, and on average about an hour or more, each day, staring mindlessly at our cellular devices. When children do venture outside, it is often as they are on their way to sports practice, or another form of structured activity, and far less likely to be exploring the wood or streams.

Without even considering the obvious negative impacts this likely has had on our health, this complete disconnection with the outside world has created a sense of apathy and disinterest in our environment and the plants and animals that call this planet home. Sure there are now phone apps which are aimed at increasing physical activity outdoors, such as a very popular game where the goal is to "catch 'em all". But this still falls tragically short of actually getting kids outdoors once again, exploring and staying out until the streetlights come on.

Undeniably times have changed, and technology isn't going anywhere anytime soon, but perhaps it's truly critical, now more than ever, to rediscover nature and all of its wonders before they are lost to an indifferent generation.

At GSWA, we are dedicated to educating the public on water quality issues, intelligent land use decisions, and threats to the health and well-being of the environment. We have expanded our education and outreach department to include even more outdoor educational programming, hikes, and opportunities to get out and reconnect with nature. We urge you to join us in celebrating

nature and discovering the power of the great outdoors, the videogames can wait! For information on upcoming hikes and events, check us out at [GreatSwamp.org](http://GreatSwamp.org). 🌲

twitter

Follow us at [www.twitter.com/gswa](http://www.twitter.com/gswa)

*A trail at the CMA. Credit John Neale*



# Speaker Series

## **Breakfast Briefing: Environmentally Friendly Fertilizer** **Tuesday, October 4, 8-9:30 a.m.**

*Back to Nature Home & Garden*  
3055 Valley Road, Basking Ridge, NJ

Fertilizers are a traditional method of replenishing missing nutrients to the soil to enhance the growth of plants and trees. However, commonly used synthetic fertilizers are causing more harm than good. Not only are synthetic fertilizers dangerous to the health of our children and pets, their use has serious environmental repercussions. Join us as we discuss the far reaching and long lasting effects that synthetic fertilizers are having on our environment with Anthony Sblendorio, Founder of Back to Nature Home & Garden in Basking Ridge, NJ. As a nationally recognized social entrepreneur and one of the pioneers of sustainable and regenerative design in NJ, Mr. Sblendorio and Back to Nature are committed to the eradication of synthetic fertilizer use. As a show of this commitment, Mr. Sblendorio invites each attendee to bring a bag of synthetic fertilizer that they're currently using in their garden and to exchange it for a bag organic fertilizer for free. (One bag for each attendee of this program.) GSWA thanks Back to Nature Home & Garden for hosting this event. Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org), or call (973) 538-3500.

*Credit Ari Kaufman*

## **Evening Briefing: Overabundant Deer and Invasive Plants** **Tuesday, November 15, 7-9 p.m.**

*GSWA Headquarters, 568 Tempe Wick Road,*  
*Morristown, NJ*

What effect do the combination of deer and invasive plants have on New Jersey's forests? What impact on tree regeneration or tick populations do different deer management programs have? Dr. Jay F. Kelly, Associate Professor of Biology and Environmental Science at Raritan Valley Community College, will discuss the results of a three year study he conducted in partnership with NJ Audubon on the effects of deer and invasive plants in central New Jersey. More than 100 forests were studied in the Piedmont region of the Raritan Watershed, assessing the effectiveness of a variety of deer management strategies, from enclosures to hunting. Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org), or call (973) 538-3500.



**Stream Assessment Training**  
**Saturday, November 19, 10 a.m.-1 p.m.**

*Longhill Township Library, 917 Valley Rd,  
Long Hill, NJ*

If you are interested in becoming a stream monitoring volunteer or just learning more about stream health, this is the training for you! An early-morning indoor classroom session helps you learn how to conduct a visual stream assessment and recognize environmental factors that may impact stream health. A late-morning outdoor session helps you practice your new-found skills at a local stream site. By afternoon, you will be a fully trained visual-stream assessment volunteer ready to conduct a new assessment next spring! Bring your own boots and a dry pair of shoes. Tools and supplies are provided. Preferred volunteers are 15 or older.

Includes indoor & outdoor sessions. Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org), or call (973) 538-3500.

**Breakfast Briefing: GSWA Annual Water Quality Report Card**  
**Tuesday, December 13, 8-9:30 a.m.**

*GSWA Headquarters, 568 Tempe Wick Road,  
Morristown, NJ*

Curious to learn the health of the streams in the watershed? Join us for an informative breakfast briefing with GSWA Director of Water Quality Sandra LaVigne as she discusses the results of her 2015 stream sampling via the annual Great Swamp Water Quality Report Card. Sandra will also discuss the plans for moving downstream in 2017. After the completion of the Adopt a Stream



*Volunteers practice their techniques at a stream team training session.*

Program with the three-year assessment of Primrose Brook and Black Brook in 2016, we will be looking forward to new endeavors throughout the watershed and downstream. Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org), or call (973) 538-3500.

**Breakfast Briefing: Environmentally Sound Cleaning Products**  
**Tuesday, January 10, 2017, 8-9:30 a.m.**

*Location TBD*

Whitevinegar, bakingsoda, lemonjuice ... no, not the ingredients in a salad dressing, but the basis of many environmentally safe cleaning products! Learn more about what ingredients in daily personal and household cleaning products you need to be wary of, how not all environmental labeled products are created equally and why you should be concerned. Common ingredients in many household products can have detrimental environmental impacts on you, the local environment and our regional water supply. Leave with some DIY cleaning product recipes and some homemade cleaning products to start you off! Registration required. Register online at [GreatSwamp.org](http://GreatSwamp.org), or call (973) 538-3500. 🌱

# 2016 Gala Celebration “One River, One Community”

by Debbie Rice, Office Manager and Event Coordinator

**G**reat Swamp Watershed Association will hold its annual Gala Celebration on **Thursday, October 20, 2016, at Brooklake Country Club** in Florham Park, New Jersey. Our annual membership meeting will take place immediately before the Gala at 5:30 p.m. All members are invited to the annual meeting, regardless of attendance at the Gala. The Gala cocktail hour and silent auction will begin at 6 p.m. Dinner and presentations begin at 7:30 p.m.

GSWA is proud to announce that it is expanding its efforts downstream, to include the Passaic River from source to sea. As part of this expansion, GSWA has joined the **WATERKEEPER® ALLIANCE** as The Passaic River **WATERKEEPER® ALLIANCE** Affiliate. Therefore, it is our pleasure to honor the other New Jersey Waterkeepers at this year’s Gala Celebration.



## Hackensack Riverkeeper and Captain Bill Sheehan

Hackensack Riverkeeper’s mission is to provide representation for the natural living resources of the Hackensack River. Through environmental advocacy, education, and conservation programs, their goal is to protect and defend the environmental quality of the ecosystem of the estuary, river and watershed, and the quality of life for people and creatures inhabiting the Hackensack River watershed.



## NY/NJ Baykeeper and Debbie Mans

NY/NJ Baykeeper’s mission is to protect, preserve, and restore the ecological integrity and productivity of the estuary. They fight to protect the health of the Hudson-Raritan estuary through advocacy campaigns, legal actions, and boat programs. They shape and enforce water quality, land use, and coastal policies that impact the estuary, and actively patrol the waterways to identify and stop polluters.



## Annual Membership Meeting

**Thursday, October 20, 5:30-6:00 p.m.**

**Brooklake Country Club, 139 Brooklake Road, Florham Park, NJ**

Whether you are attending our annual Gala Celebration later the same evening, or just interested in catching up with all that has happened at the Great Swamp Watershed Association over the past year, please join us for our annual membership meeting on October 20 at Brooklake Country Club in Florham Park, immediately prior to our Gala Celebration. Executive Director, Sally Rubin, will offer some short remarks and field any questions you might have during this brief 30-minute meeting.

Advanced registration is not required for attendance at the meeting. All attendees should hold a current membership with GSWA. To check your membership status, please call us at (973) 538-3500.



### Raritan Riverkeeper and Bill Schultz

Raritan Riverkeeper is a program within NY/NJ Baykeeper whose mission is to be the citizen guardian of the Raritan River. They stop polluters, champion public access, and influence land-use decisions. They pursue opportunities for land preservation and habitat restoration, and advocate for the Raritan River's environmental importance, as well as its value as a recreational and cultural resource.

We hope you will join us to celebrate our 35th anniversary and new expanded mission. Tickets are available online at *GreatSwamp.org*. While you're there, check out our spectacular online Gala auction, as well!. 🌲



**GSWA is blogging at**  
<http://GreatSwamp.org/blog>

# “WOW, Your Bugs are so Much Bigger Than Ours”

by Rick Porter, Director of Institutional Relations

**T**his quote comes from one of the stories we love to tell about the impact our environmental education programs are having on children:

*Last fall our Director of Communications, Kelly Martin, was working with our environmental education staff on a water quality program with a middle school class at the Paterson Great Falls National Historical Park. Along with the usual scientific paraphernalia, she brought samples of macro-invertebrates (tiny bugs) from streams in the Great Swamp watershed to compare with those the students had taken from the Passaic River in the park. One 10 year-old child loudly exclaimed to her, “Wow, your bugs are so much bigger than ours!” Kelly’s explanation was a lesson unto itself, fascinating to the kids, and bringing home the message of how the river changes, upstream to downstream, and how location can be a major factor in the health of our rivers and streams.*

GSWA’s environmental education programs, like the one in which Kelly was participating, have always been at the core of our important work to build awareness of issues that affect the health and natural

beauty of our watershed and downstream areas of the Passaic River. As we begin to expand our mission, caring for the river from the Great Swamp headwaters to Newark Bay, it is vital that our unique and impactful education programs are available to children and adults in communities all along the Passaic.

While we have already conducted select programming in Paterson, NJ, it is one of our initial expansion target cities. A city of some 150,000 residents, the 3rd largest in New Jersey, and second only in the U.S. to New York City in population density of cities over 100,000 people, Paterson is very diverse racially, ethnically, and economically. The Passaic River literally flows right through the city, and it is one of more than twenty (20) Combined Sewer Overflow

*GSWA Director of Communications Kelly Martin explains the significance of macroinvertebrates to a group of girls at Paterson’s Great Falls National Historical Park.*



(CSO) communities in New Jersey where stormwater and sewage mix together, exceeding sewer treatment capacities during peak flows, which pollutes the river.

Paterson SMART (Stormwater Management and Resource Training) was formed in early 2015. GSWA has been an active member since the early days of this group of dedicated stakeholders who are committed to using green infrastructure projects to provide solutions to stormwater management issues in Paterson, such as the CSO problem. Through this group, we have partnered with Rutgers Cooperative Extension Water Resources Program, another SMART member, to provide the environmental education component of a Rutgers' project at three Paterson schools that will replace impervious surfaces near the river with rain gardens.

It is exciting to announce that this part of our educational expansion plans in Paterson

schools will get underway this fall, 2016. We have received our first foundation grant dedicated to this project, and we are sincerely thankful to The Passaic County Children's Fund at the Community Foundation of New Jersey for their generous support. Their \$3,580 grant award of August 23, 2016 will help provide both in-class and in the field, education programs to the approximate 500 middle and high school students in Paterson who will initially be involved in the rain garden projects.

We look forward to bringing you updates on this project throughout the school year, and we again thank The Passaic County Children's Fund at the Community Foundation of New Jersey for helping GSWA bring its valuable environmental programs to the children of Paterson, some of whom will no doubt be the environmental leaders of tomorrow. 🌲

**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 [GreatSwamp.org](http://GreatSwamp.org) for more information.

# The Value of Creating Environmental Problem Solvers

by Hazel England, Director of Education, Outreach, and Land Stewardship

As you'll learn from the various articles contained in this newsletter, GSWA is expanding — both the geographical and educational reach of our programs. As we expand, the number of schools we reach multiplies considerably. It therefore becomes critical to make our resources maximally effective to those schools and educational institutions with whom we work.

Our educational programs take many forms, and in a typical week, might include us working with groups as diverse as kindergarteners to college students. A recent glance at our calendar might show us out of the office and working with:

- High Schoolers along the length of the Passaic taking part in our hands on SWaMP water quality monitoring programs.
- Elementary through college students gathered around our 3D model of the Passaic River learning first-hand about the sources of their drinking water and what non-point source pollutants within their local environment can influence water quality.
- High School forensics and chemistry students realizing the real world relationship of the various elements on the periodic table they must learn, such as Lead, Chlorine, and Hydrogen, and the impacts those same elements can have when they show up and interact



A Group of students from Madison High school explore macroinvertebrate during a SWaMP program.

- in different forms in drinking water in places such as Flint, Michigan.
- A group of 45 Paterson High School students attending a Passaic County Community College Summer Institute on water quality, learning about water quality issues in their own community through hands on sampling, field trips to the source of their river, and in class discussion and analysis.
- Meeting with High School educators to develop engaging new content on green infrastructure solutions — such as the construction of drainage basins and rain gardens that work within High School science curriculums, and which can help address combined sewer and flooding issues in downstream communities.

The common thread that underscores all of our programming is that a wide range of water issues matter.

We always take the approach that students need to develop their critical thinking skills to first understand local water issues, and how these issues are personally relevant to the students' own communities, whether they be rural, suburban or urban. Armed with scientifically based knowledge as the starting point, students begin to brainstorm solutions to the various water issues they learn about. Initially, their suggestions might not be the most realistic or feasible, so students then refine, discuss, investigate, and improve them.

For example, a Mendham third grader learned that oil leaking from poorly maintained cars contributed to non-point source pollution finding its way into streams. He initially suggested that all cars should be replaced every two years! A gentle redirection that this might not prove feasible, and would be expensive, allowed the student to come up with a proper car maintenance brochure for residents instead!

Similarly, a group of Paterson students brainstorming solutions to an environmental issue they had learned about in their week of intensive water quality programming with us, had a solution to the high nitrogen and *E. coli* levels present in their sampling area emanating from goose droppings. Students initially proposed that community service groups could pick up the droppings by hand,

to reduce the impact on nearby Molly Ann Brook. Further thinking and discussion about the reality of dealing with a wildlife problem from this end — so to speak — enabled these learners to realize that their initial solutions might not be the most realistic, or the best approach. Through further group discussion and problem solving, they then arrived at a more real world solution themselves. Students decided that controlling the goose population by manipulating the habitat to make it less desirable for geese might be a more feasible and palatable option.

Organically, these two examples highlight the value of a STEM learning approach — using Science, Technology, Engineering and Math skills to develop science based thinking in today's learners. The new Next Generation Science Standards

*(continued on next page)*



*GSWA Director of Communications Kelly Martin helps Chatham High School students identify macroinvertebrates found at Stanley Park in Summit.*

# Stakeholder Notification/ Public Notice

The land trust accreditation program recognizes land conservation organizations that meet national quality standards for protecting important natural places and habitats forever. Great Swamp Watershed Association is pleased to announce it is applying for accreditation. A public comment period is now open.

The Land Trust Accreditation Commission, an independent program of the Land Trust Alliance, conducts an extensive review of each applicant's policies and programs. GSWA recognizes the importance to have sound policies and procedures to better protect and improve the land and water resources of the Passaic River region. Becoming accredited by the Land Trust Alliance will formalize our organization's approach for land preservation to ensure the conservation and stewardship of our natural resources in the Passaic River region.

The Commission invites public input and accepts signed, written comments on pending applications. Comments must relate to how Great Swamp Watershed Association complies with national quality standards. These standards address the ethical and technical operation of a land trust. For the full list of standards see [landtrustaccreditation.org/help-and-resources/indicator-practices](http://landtrustaccreditation.org/help-and-resources/indicator-practices).

To learn more about the accreditation program and to submit a comment, visit [landtrustaccreditation.org](http://landtrustaccreditation.org), or email your comment to [info@landtrustaccreditation.org](mailto:info@landtrustaccreditation.org). Comments may also be faxed or mailed to the Land Trust Accreditation Commission, Attn: Public Comments: (fax) 518-587-3183; (mail) 112 Spring Street, Suite 204, Saratoga Springs, NY 12866.

Comments on Great Swamp Watershed Association's application will be most useful by November 11, 2016. 🌲

---

## Creating Environmental Problem Solvers *(continued from previous page)*

(NGSS) helps further encourage this type of solutions based thinking.

GSWA educators help students to come up with their own engineering or environmentally based solutions to environmental problems, thereby solving real world issues creatively. Given that today's high school and college students could be tomorrow's mayors, planning board members, or Wall Street decision

makers, enabling students to develop strong foundational critical thinking and science skills helps to create the next generation of fearless and effective problem solvers — whether in rural and suburban upstream Passaic municipalities, or urban, downstream ones.

This enables every program we conduct to be the most effective it can be. 🌲

# Testing for Lead in Drinking Water

by Kelly Martin, Director of Communications and Marketing

In March, GSWA completed its third year of private well water testing. For a discounted rate, participants could test their well for a variety of parameters, including bacteria, nitrate, arsenic, lead, and copper, among others. This year, in light of the tragedies that occurred in Flint, Michigan and, closer to home, in the Newark school system, GSWA expanded the program to include lead and copper testing for individuals on public water.

Of the over 50 individuals that participated in the program this year, five had lead in their water over the recommended limit. Three of those five individuals receive their

water from public water supply. This is not necessarily an indication that there is lead in the public water, but more likely that the individuals' homes contain lead piping or solder that is leaching into the water between the water main and the tap. These findings underscore how important it is to test your water, even if you are receiving regular reports from your water company.

GSWA will continue its water testing program in the spring of 2017. If you're interested in participating, please contact Kelly Martin at [kmartin@GreatSwamp.org](mailto:kmartin@GreatSwamp.org) to have your email added to the alert list. 🌿

---

## From the Financial Corner

by Sue Levine, Director of Finance & Human Resources

GSWA had a terrific fiscal year ending June 30, 2016, starting with a successful annual gala and finishing with strong foundation support, major donor support, and trustee donations. Although the audit will not be completed until November, I can share with you that we exceeded our budgeted goals and achieved a record income from standard operations of \$640,000 and a positive net income. Each year we draw 4% from our endowment fund for operations, I

am delighted to report we did not need those funds for operations this year but instead set \$40,000 aside as board restricted for future projects and programs. Our Endowment Fund adjusted for this was at \$966,000 at the end of the fiscal year. The increase in income has allowed us to expand our programs within the watershed as well as add some new and exciting projects downstream, continuing our dedicated efforts to protect the waters of the Passaic River, source to sea. 🌿

# “Down to the River We Ride”

by Kristina Necovska, Membership Associate

**W**e in Jersey have what is called a “car culture”, and oh do we drive. Our unofficial state poet, “the Boss”, certainly incorporated this experience into his music. In fact, most of us from the suburbs can relate to aimlessly wandering the roads of this state at one time or another, because when you’re 17 and penniless, you easily exhaust the options of hanging out in parking lots and diners.

Since getting my driver’s license, I’ve covered thousands of miles — and most of them were, you guessed it, in New Jersey! From birding in Cape May, to those inevitable traffic lock-downs on the Turnpike, to getting lost in Newark before the ubiquity of GPS navigation (and still a little bit after) ... just when I think I’ve seen it all, I find some interesting and breathtaking places, no, not the Wawa — they’re all public parks!

As you may have already read, we are excited to announce that we’ve been named the Passaic River **WATERKEEPER®** ALLIANCE Affiliate. We’d love to take you down the river to some places you may not have explored yet. We are offering a new series of hikes and events called “Downstream Adventures”, designed to explore parts of the Passaic that might be new to some of you. You are surely

familiar with parks within our watershed, but have you explored Garret Mountain or gone birdwatching at Great Piece Meadows?

Join us on our ride down to the river to explore and appreciate what we’ve got:

**Garret Mountain.** Located in Woodland Park near William Paterson University, it provides lovely views of Northern New Jersey and the NYC skyline. From boating to horseback riding, there is certainly lots to do in this 568 acre park. While you’re here, you can visit the gorgeous Lambert Castle housing in its historical opulence a museum, a library, and an observation tower for viewing the skyline. Garret Mountain was the first site of our “Downstream Adventures” hike series, on September 14.

**Paterson Great Falls National Historical Park.** Located just a few miles from Garret Mountain, are Paterson’s Great Falls. One of the more spectacular views of the Passaic

*(continued on page 26)*



Paterson's Great Falls.  
Credit Chris Mezzacappa



# Cleaning House on Household Cleaners

by Hazel England, Director of Education, Outreach, and Land Stewardship

If you have ever tried to find out exactly what specific ingredients are in the various household cleaning products you buy on a regular basis, you will quickly learn how difficult it can be. Even cleaners labelled as ‘eco-friendly’, ‘green’, or ‘natural’ often contain harsh chemicals that are hazardous to our health, can cause reproductive changes in other species, or cause other health and environmental problems.

Here’s a test — open the cupboard where you keep your cleaning supplies and take a look at the variety of products stored there... If the bottle doesn’t have a label with all the product ingredients listed, put it to one side. Chances are, the bulk of your products will fall into this group. The Environmental Working Group (EWG), an organization which provides consumers with accurate information on the environmental impact of ingredients to help them make informed product choices, has recently highlighted this lack of transparency in household cleaning products.

In an analysis of several thousand cleaning products across many cleaning categories, EWG found that almost half of the products got a “poor” rating on ingredient disclosure. It is hard to make an informed choice whether you want to use a particular product if you can’t tell what ingredients it contains!

Almost three quarters of the products surveyed contained ingredients with links to respiratory complaints, including those being known asthma irritants. One fifth

caused moderate to high concern in the survey because their ingredients have been linked to endocrine or reproductive effects. Many of the harsher chemicals found in common cleaning products tend to persist in waterways, as they are only partly removed or broken down in the wastewater treatment process, persisting in water, and causing toxic effects to aquatic life.

So what’s the solution for a clean home which is also an environmentally healthy home?

Sure, cleaning products made by companies like Seventh Generation, which leads the way in open labelling and not using harsh, harmful chemicals, is one option, but not all “green” products scored well on EWG’s tests — including the Method range of cleaners. Consumers can check out the full listing of more than 2,500 products reviewed and assessed at EWG’s Website: [ewg.org/guides/cleaners/content/findings](http://ewg.org/guides/cleaners/content/findings).

Another environmentally sound option is to start making your own, much cheaper, and equally effective cleaners, using known and harmless ingredients such as vinegar, baking soda and borax — much like your grandma made and used many moons ago!

GSWA will present more on this topic at our January 10 Breakfast Briefing, which will focus on the implications of specific ingredients and the creation of a variety of homemade cleaning remedies. Until then, why not try the following recipe:

*(continued on page 27)*

## Holiday Cordial Tasting Party

Great Swamp Watershed Association (GSWA) is hosting a winter cordial tasting mixer on December 1, and you're invited!

Whether you're new to GSWA or you have some friends you want to introduce to us, this is a great, low-key way to learn more about the organization's 35-year legacy of environmental stewardship, education, and advocacy in the Great Swamp region. We'll also tell you things about New Jersey's Great Swamp and our expansion into the Passaic from source to sea!

We'll be sampling a variety of delicious cordials, with an assortment of delectable cheeses and hors d'oeuvres. An environmental themed trivia game will give guests the chance to mingle and win some of Kelly & Sally's famous chocolate covered pretzels.

**There is no charge for members to attend this informal celebration, but each registrant must bring along at least one nonmember friend as their "price of admission."** Larger groups are encouraged. (Members who do not bring nonmembers will be asked for a \$25 contribution).

An anonymous donor has pledged to contribute **\$25** to GSWA for each new person introduced to the organization at the tasting. The same donor has also **pledged to match**, dollar-for-dollar up to \$5,000, any and all contributions made to GSWA during the event, so bring as many friends as you can gather!

**Reservations are required**, and you **must be 21 or older to attend**. The location of this event is to be determined. RSVP online at [GreatSwamp.org](http://GreatSwamp.org), or by calling 973-538-3500.

### Down to the River *(continued from page 24)*

River, this is a great location for a hike after partaking in the culinary offerings of the nearby urban areas. The falls and Chasm bridge can be viewed from both above and below, at the water level. It even received a bit of national coverage by being featured in *The Sopranos* when a hapless criminal was thrown off the bridge and into the falls!

**South Mountain Reservation.** Located in nearby Roseland, you are probably familiar with the bounty of recreational activities this preserve offers. There is indeed something

to do all year round; from dog parks, to boating, and of course hiking. South Mountain Reservation will be the second "Downstream Adventures" hike location on **Sunday, November 27** (register online at [GreatSwamp.org](http://GreatSwamp.org)).

**Great Piece Meadows.** Along with the Great Swamp, Great Piece Meadows, Troy Meadows and the smaller, Hatfield Swamp are the remnants of the Glacial Lake Passaic. Nestled against the serene backwaters of the Passaic, Great Piece Meadows provides



Meet the GSWA Crew: from left to right: Rick Porter, Director, Institutional Relations; Sue Levine, Director, Finance and Human Resources; Sally Rubin, Executive Director; Hazel England, Director, Education, Outreach, and Land Stewardship; Kristina Necovska, Membership Associate; Sandra LaVigne, Director, Water Quality Programs; Debbie Rice, Office Manager and Event Coordinator; Sam Mezzacappa, Baby; Kelly Martin (Mezzacappa), Director, Communications and Marketing; Dan Ross, Education Associate.

more habitat to hike or boat through to see migratory songbirds or waterfowl or rare plants like tufted loosestrife.

These are only some of the ample parks and preserved areas available to us in our little corner of north Jersey. Our commitment to preservation and education extends down as far as the river can take us, because after all, it is all part of the same system. 🌿

### **Household Cleaners** *(continued from page 25)*

To make an effective all-purpose cleaner: Mix 1/2 cup white vinegar and 1/4 cup baking soda (or 2 teaspoons borax) into 1/2 gallon (2 liters) warm water. Store in a spray bottle — you can add a couple of drops of eucalyptus or rosemary essential oils to make a scented cleaner, and a couple drops of food dye if you need to clearly mark the product. Use for removal of stains on bathroom fixtures, windows, mirrors, etc. 🌿

## Changes in Water Quality... so to speak!

**L**aura Kelm, Director of Water Quality, left us this past spring after five years with GSWA. Laura and her husband Paul relocated to Maryland to be closer to family. Laura was a dedicated and integral part of our program staff and we wish her (and Paul!) all the best on their new adventures!

GSWA bids farewell to Laura Kelm and welcomes Sandra LaVigne, our new Director of Water Quality.



Letter from Sandra:

First I would like to thank GSWA for welcoming me to their family. I joined the staff as Director of Water Quality Programs in March of this year and was privileged to work with the outgoing Director, Laura Kelm, for over a month before she moved on. Prior to joining GSWA, I worked for over eight years as a water quality specialist and restoration ecologist with Allied Biological in Hackettstown, NJ. My experience there included water quality monitoring and program design, aquatic and terrestrial vegetation surveys, fish surveys, and restoration projects. I also worked closely with seasonal interns and ran outreach educational programs. A native of northern New Jersey, I attended Cook College, Rutgers University, where I completed my undergraduate work in Ecology, with a minor in Environmental Education and my master's work in Restoration Ecology with a concentration in wetland restoration. I bring a love of the environment and a strong commitment to protect it to my new job. It was my early experiences hiking and camping with my family that encouraged me to pursue a career in environmental science and I hope, through my work with GSWA, to encourage a new generation of environmental activists. As we grow with our downstream expansion and new water quality plans, I look forward working with all our great volunteers and staff and to growing our GSWA family and spreading our message. Thank you for giving me the opportunity to be a part of GSWA.

*Sandra*

## Welcome Kristina Necovska - New Membership Associate

I am so happy to join the staff here at GSWA. I am responsible for our membership services, and tackling anything else that comes my way! A lifelong naturalist and birder, I learned early on that being responsible for the environment takes lifelong dedication. This led me to become involved in citizen science initiatives both in my undergraduate education and personally — working on such projects as surveying for invasive plants, vernal habitat monitoring, migratory bird counts, and lately, stream monitoring for GSWA.

I earned my BA at Muhlenberg College and this year completed an environmental science-focused GIS (Geographic Information Systems) certification from Penn State. My final project was used to aid a UNDP (United Nations Development Program) initiative in my native Macedonia to develop watershed modelling software used in stream monitoring in the Prespa region.

Prior to joining GSWA, I worked in STEM (Science Technology Engineering Mathematics) advocacy for girls at a CUNY



affiliate publishing house, The Feminist Press. More recently, I served as web content manager at TapIT NYC, a NYC-based non-profit focused on clean water issues facing urban environments. I am happy to be working alongside such dedicated people in protecting the natural resources closest to us by making New Jersey a greener place. 🌲

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 [knecovska@GreatSwamp.org](mailto:knecovska@GreatSwamp.org) so you don't miss out on our monthly e-newsletters.

# Plastics in our Waterways

by Sandra LaVigne, Director of Water Quality

Plastics make our lives simpler, better, right? We use them to create cases for our computers, keep our food fresh and carry portable beverages: water, sports drinks, soda. In recent years, we have begun to realize the environmental impacts this non-biodegradable convenience can have on our waters. In many areas plastic shopping bags are being replaced by reusable ones or recycled paper bags and people know to cut up those pesky plastic soda rings before disposing of them. Many people support cleanups of local parks and rivers and collect the scattered plastic bottles and bags that have blown or been washed into our area. These things do help; but that is just on the surface, just what we can see.

Microplastics are defined as any particle of plastic smaller than 5mm in size. Environmental impacts from microplastics have a wide scope; they are embedded in the silt and sediment of our waterbodies. They come from a myriad of sources and make their way into our waters through runoff, waste water effluent, and breakdown from larger plastics. One of the most common sources of plastic contamination is the microbeads that are found in many cleaning products. It has been reported that approximately 800 trillion microbeads wash down drains each day in the United States. The impact on our environment was so wide spread that, on May 23, 2015, Governor Christie signed a bill to ban the production of microbeads as of January 1, 2018 and ban

the sale of them in the state as of January 1, 2020. However, although New Jersey was one of the first states to take affirmative action, on December 18, 2015, President Obama signed a bill with stricter goals; banning production on July 1, 2017, and banning the sale of products with microbeads as of January 1, 2018. This source reduction will greatly benefit our waters moving forward.

Another source that is harder to address is microfiber. Microfibers are fibers released from textiles like garments and blankets made of synthetic materials: nylon, fleece, polyester, acrylic and rayon. When these items are washed, they shed microfibers into the waste water that cannot easily be removed. Waste water treatment plants are not equipped to filter out these tiny particles of plastic. One study showed that a single fleece jacket releases an average of 1.7 grams of fibers into the waste water stream with each wash. A city of 100,000 people could produce enough microfibers through laundry per day to equal approximately 15,000 plastic bags. Currently there is no legislation to address the issue of microfibers.

Microplastics, both microbeads and microfibers, are taken up by aquatic wildlife as food. Fish see the microbeads and think they are a food source, and filter feeders, such as clams, filter the microfibers present in the water and sediments. These plastics cannot be digested and eventually the fish can starve due to plastic filling the stomach. Microfibers have also been found in the muscle tissues



of these organisms, posing a problem as it moves up the food chain to both larger organisms in the aquatic systems and to humans.

So what can we do? Here at GSWA,

we are currently working on plans to sample our waters to determine the quantity of microplastics in our region. Public awareness is the first step to creating positive solutions. We encourage everyone to make smart choice as consumers; purchasing power can help to change manufacturing policies. Here are a few simple suggestions for things you can do to reduce your microplastic use:

- Bring reusable bags when you shop. Not just at the supermarket but where ever you shop.
- Use a reusable drink container for water and sports drinks on the go.

- Buy textiles made from natural fibers — cotton, silk, linen, wool.
- Drink from the cup! Choose not to use plastic straws.
- Recycle and compost. Reduce plastic garbage bag use by recycling paper and cardboard and composting your food waste.
- Recycle all plastics. If you must use plastic containers, be sure they are properly disposed of in a recycling bin. 🌲

### **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 [GreatSwamp.org](http://GreatSwamp.org) or send an e-mail with your name and address (so we can identify you in our member database) to [knecovska@GreatSwamp.org](mailto:knecovska@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.



## **Great Swamp Watershed Association**

The Passaic River **WATERKEEPER**® ALLIANCE Affiliate

Post Office Box 300

New Vernon, NJ 07976

(973) 538-3500

[www.GreatSwamp.org](http://www.GreatSwamp.org)

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



*Printed on recycled paper.  
Please recycle again.*