



Great Swamp Watershed Association

The Passaic River **WATERKEEPER®** ALLIANCE Affiliate



Across the Watershed

Fall-Winter 2022



Protecting our Waters and our Land for More Than 40 Years

Community Organizes to Create the Mendham Alliance for Preservation and Conservation

By Frank Zammataro, Guest Author

Re-zoning sparks a call for transparency and balance in accelerated growth plan

What do you do when you hit a brick wall at Town Hall? “You get organized!” says Frank Zammataro, Co-founder of the Mendham Alliance for Preservation and Conservation (MAPC). And that’s exactly what happened late last year in Mendham Township!

The impetus started in October 2021 when a “200 Foot” notice was distributed to residents of Mendham Borough and Township as well as bordering residents in Bernardsville. The notice stated that the former equestrian Irene Spring Tree Farm, encompassing 16, ten-acre lots was being rezoned to 5 acre lots, potentially adding 10 additional lots to the development. After pleas from the community to delay the vote to further study the impact on the headwaters of the Passaic River and connective wildlife habitat, the Township Committee dismissed a formal protest petition signed by over 50 residents and voted 4 to 1 to proceed with the 5 acre ordinance. Over time, it became clear that COVID reduced the community’s ability to stay diligently involved with township planning board and committee activities including pivotal changes to the Township’s Master Plan.

In response, the MAPC was officially formed as a charitable, not-for profit corporation, on February 22, 2022 and designated by the IRS to accept tax-exempt donations. The MAPC mission is to provide non-partisan support, advocacy and balance for sustainable land conservation, preservation and stewardship. This includes:



- Helping to ensure the preservation of the rural qualities of the Mendhams;
- The preservation and conservation of the most sensitive areas outlined in the August 2004 Highlands Act;
- Identification of contiguous space that can be preserved in perpetuity;
- Development of new conservation zoning categories which will limit non-restrictive rezoning in the Township and Borough and create valuable sustainable attributes;
- Retain legal, environmental and engineering talent in support of the conservation and preservation goals;

(continued on next page)

Community Organizes to Create MAPC (continued from page 1)

- Seek support from all residents of the Mendhams, as well as neighboring communities that benefit from the Raritan, Passaic and Whippany Rivers, which originate in the Mendhams; and
- Establish a guide which can serve as an aid to incorporate more sustainable qualities in the Mendhams.

So for now, the MAPC is actively monitoring the Spring Tree development with the hope to minimize density and maximize preservation, finding a good balance with the priority to “vigorously” protect the headwaters and critical habitat on and around the properties.

The MAPC has recently established a website <https://savemendham.org> and is seeking to meet with more neighbors who cherish the qualities of the towns and seek to limit un-restrictive development. The main activities of the MAPC will be to identify projects which need organizational and expert support to balance potential growth activities. In addition, the MAPC wants to provide “sustainable thought leadership”, educating all residents and leadership about the best practices emerging across the United States to create sustainable communities. The website will highlight its “Nature Corners”, local

residents with an eye for photography, illustrating the unique and in some cases endangered species in the backyards and woods of the Mendhams. Two founders of the MAPC are leading the way with their contributions:

Marta Longo, a township resident and amateur photographer snapped a photo of a “flying lobster!” Who knew this even existed,

let alone here in Mendham. You can see more at: www.savemendham.org/marta-longo

And an endangered red-shouldered hawk fledgling smiled for Chris Neff, professional photographer and NJ Audubon Communications Director, in Mendham Borough recently. You can see more at: www.savemendham.org/chris-neff

So what do you do when you hit a brick wall at Town

Hall? Frank says “You make lemonade from lemons and rise to the occasion!” The time is now to save the Mendhams, not from growth, but from ignorance. Simply growing any town’s housing without fully addressing the preservation and conservation of its natural resources sets a bad precedent for the future. The MAPC goal is to save the Mendhams for future generations whose “thank you” will never be heard! Think about it! 🌱



Frank Zammataro is a renewable energy entrepreneur with a passion for the environment and sustainability. He serves as the President of the MAPC. Since 2017, he and his wife, Jeannie have operated a small retirement horse farm in Mendham Township.

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 40 years.

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GSWA Presents

The Passaic:

One River One Community

Please view our 4-minute video that takes you on a journey down the Passaic River from its headwaters in Mendham to Newark Bay where the river meets the sea. Learn more about what we do, how we do it, and why we do it.

Visit GreatSwamp.org/OneRiverVideo

From the Desk of the Executive Director

By Sally Rubin, Executive Director

According to the dictionary, a member is a person belonging to a particular group. We are members of families, we are members of the human race, and YOU are also a member of the Great Swamp Watershed Association (GSWA). And for that we are grateful!

But what does being a member actually mean? The tangible benefits of being a GSWA member are that you receive this semi-annual newsletter (thank you for reading it!), and you can attend most of our guided hikes, paddles, DIY workshops, and environmental speaking presentations for free or at a discounted rate. We hope you participate in and enjoy these programs and events.

Your membership also means you are a supporter of not just Great Swamp Watershed Association but of our environment and all the work we do to protect it.

Your support empowers GSWA to advocate on important environmental issues. Recent and ongoing examples are the Community Advisory Group (CAG) for the Rolling Knolls Superfund in Chatham. This group facilitates important community participation in the cleanup process of this contaminated site. Would you rather see this 200-acre site fenced off in perpetuity or would you prefer to see it cleaned up to a standard which would enable it to be annexed to the Great Swamp National Wildlife Refuge and be accessible for everyone? GSWA chairs the CAG which advocates for all of us on this issue.

GSWA also advocates for the preservation of the Drew Forest in Madison. Do you want to see more condominiums in Madison

or do you want this environmentally valuable property preserved for the students of Drew University and the public?

GSWA also advocated for the recent plastic bag ban that was enacted in New Jersey. Do you want more microplastic in our en-

Thank you for being a member of the Great Swamp Watershed Association!

vironment or do you want to reduce plastic waste and improve our fragile environment?

Your support also empowers GSWA to educate the leaders of tomorrow. We provide environmental education for students in their classroom and in their schoolyard. We also bring students to our forested wetland and provide outdoor experiential learning opportunities. High school and college students dig deeper into the environmental field and learn from our professional staff through our internship program. Do you want our students and future leaders to learn about their local environment and the importance of protecting it? Adults and families can participate in GSWA educational programs such as our recent webinar series on the importance of native pollinator plants and our hugely successful native pollinator plant sale last spring. Do you want to see more adult environmental education opportunities?

Your support also empowers us to monitor the waters of the Great Swamp watershed and Passaic River through our water quality monitoring program. We are the only entity testing the waters of the Great Swamp watershed and Passaic River region on a consistent and ongoing basis. Recently purchased

equipment will enable us to test the water in different locations over an extended period of time. This year, we are testing for PFAS. PFAS are ubiquitous forever chemicals and known carcinogens which persist in the water supply. Do you want GSWA to continue to monitor the water of the Great Swamp and Passaic River region and be a watchdog for water quality issues as they arise?

It is only through your support and MEMBERSHIP that we are able to do what we do. Knowing how many people care about our environment and support GSWA inspires us every day to work hard. With your continued support, we pledge to continue to be the guardian of the watershed now and for the future. 🌱

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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 srubin@GreatSwamp.org so you don't miss out on our new monthly e-newsletters.

Upcoming Programs and Events

For more information on upcoming events and to register, visit ***GreatSwamp.org*** or call **973-538-3500**.

Most events are free or a reduced rate for GSWA members. Registration is required for all GSWA events.

Harvest Moon Night Hike Friday, September 9, 6:30 - 8:30 PM

*Great Swamp National Wildlife Refuge -
Wildlife Observation Center (WOC)
Long Hill Road, Harding Township, NJ*

With autumn just around the corner, this is a spectacular time of year to get outside for a night hike. Come enjoy the beauty of the full “Harvest Moon” over the water at the WOC (Wildlife Observation Center). A full moon this time of year is typically called the Harvest Moon because the angle of the moon’s orbit relative to the Earth’s horizon is at its minimum, causing the full moon to rise above the horizon much faster than usual. This once helped farmers bring in the harvest late into the night. For us, it means we will have a bright night sky to light the way as we traverse the beautiful trails of the Refuge. GSWA Members: FREE, Non-members: suggested donation of \$10 for adults/\$5 for children 6-17. Registration is required at *GreatSwamp.org* or call 973-538-3500.

Boonton Falls “Little Niagara” Hike Saturday, September 10, 10 AM - 12 Noon

*Boonton Farmers Market or Canal Side Park,
Plane Street Parking Lot, Boonton, NJ*

Here’s an awesome hiking experience close to home! Come see (and hear) about one of New Jersey’s amazing hidden treasures, the Boonton Falls. The Boonton area is rich in history, so we’ll discuss how the falls and the

Rockaway River made Boonton an ideal location for the now abandoned New Jersey Iron Company in the 1830’s. The Morris Canal transport system moved the manufactured nail rods and bar iron through the tri-state area. Come experience all this and more! GSWA Members: FREE, Non-members: \$10 for adults/\$5 for children 6-17. Registration is required at *GreatSwamp.org* or call 973-538-3500.

Breakfast Briefing: “Black Gold” for Your Garden... Composting Simplified Tuesday, September 13, 8 - 9:30 AM

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

Put some pep into your garden’s step with compost made from your table scraps and outdoor material like leaves and lawn clippings. Compost is organic matter that has been decomposed. Through the compost recycling process, various organic materials, otherwise regarded as waste products, can be added to the garden or lawn as a soil conditioner. The addition of compost will build a better-quality soil for your trees, shrubs, plants, and vegetables. Led by Master Gardener, Cheri Wilczek, this program will outline what compost is, its benefits, how to start and build a compost bin, materials to avoid in adding to a compost pile, tips for success, and troubleshooting this process. Let’s get started on making our own “Black Gold” today!

A light breakfast will be served followed by the presentation and Q&A session. GSWA members: FREE, Non-members: \$10 for adults/\$5 for children 6-17. Registration is required at GreatSwamp.org or call 973-538-3500.

Stream Assessment Training - FREE
Saturday, September 17, 9:30AM - 12:30PM

Parsippany Troy Hills Library, 449 Halsey Road, Parsippany, NJ

Take a moment to really look at one of your local streams. At first glance, it may look completely fine. But to the trained eye, it could be a very different situation. How can you tell? This FREE, half-day/two-part training session will show you how to gain a better understanding of stream health. An indoor classroom session teaches you how to conduct visual and biological stream assessments and recognize environmental factors that may impact a stream. An outdoor session lets you practice your new-found skills at a local stream site. By the afternoon, you will be fully trained in visual stream assessment and ready to conduct your own. Whether you opt to become a GSWA Stream Team volunteer or simply wish to gain some insight, this training session is for you! Registration is required at GreatSwamp.org or call 973-538-3500.

Fall Colors Paddle
Saturday, October 1, two paddles:
10 AM-12 Noon & 12:30-2:30 PM

Great Piece Meadows (exact location TBA)

Experience the spectacular change of colors from the water! A central portion of the Passaic River, the preserved area of Great Piece Meadows, is known for its slow, quiet twists and turns. It's home to wildlife such as great blue heron, salamanders, turtles, mink, muskrat and more. Children 8 and up are

welcome. All participants 15 and under must be accompanied by a parent. There are 7 spots available per session – only 2 spots per registration. All participants must be able to swim, be comfortable on the water, and wear clothes and footwear that can (and will) get wet and muddy. Life vests will be provided. GSWA members: \$30 each, non-members: \$40 each. Register at GreatSwamp.org or call 973-538-3500.

Community Stewardship at the CMA
Monday, October 10, 9 AM - 1 PM

GSWA Conservation Management Area (CMA), 91 Tiger Lily Ln., Harding Twp., NJ

Are you looking for someplace to put all that elbow grease? Don't mind a little dirt under your nails? Join us for a morning of stewarding the land at our 73-acre Conservation Management Area. It takes many hands to keep our CMA in good shape. Work includes clearing and mulching trails, building boardwalks, removing invasive plants and more. Come get in on the action and leave with a sense of accomplishment! Register at GreatSwamp.org or call 973-538-3500.

Community Yard Sale
(Madison & The Chathams)
Saturday, October 15, 9 AM - 2 PM

Declutter your home before the snow begins falling. This yard sale is open to all residents of Madison and The Chathams. Register by Oct. 12 to have your address and a list of your sale items appear on a digital, printable map. The map will be linked to the GSWA website and publicized far and wide to potential shoppers. Registration Fee: \$10 tax-deductible donation to benefit GSWA. No additional permit needed. **Everyone else**, mark your calendar for October 15 to get out and shop sustainably at this amazing three-town-wide yard sale! Be sure to check

GreatSwamp.org Friday, October 14, at 9AM for a digital map of all yard sale participants. The map will also be published in local media and on town sites.

Fall Colors Hike
Saturday, October 22, 10 AM - 12 Noon

High Mountain Park Preserve, Wayne, NJ

High Mountain Park Preserve features stunning, panoramic, summit views of New York City and northern New Jersey, and waterfalls. The changing leaves will provide a colorful backdrop to these amazing sights. The Preserve is home to rare and threatened plants and wildlife, including mountain mint and northern long-eared bats, as well as common local species like flying squirrels, wild turkeys, chipmunks, and white-tailed deer. Join us for a rigorous hike with some intermediate sections. GSWA Members: FREE, Non-members: \$10 for adults/\$5 for children 6-17. Registration is required at *GreatSwamp.org* or call 973-538-3500.

Breakfast Briefing: Drew Forest Update
Tuesday, November 8, 8:00-9:30 AM

GSWA Headquarters, 568 Tempe Wick Rd., Morristown, NJ

As you may know, the 53-acre Drew Forest, located on the Drew University campus in Madison, NJ, is in jeopardy of being sold and disappearing forever. The Drew Forest sits within four watersheds, benefiting the community, wildlife, and ecosystem. Among the many benefits it offers, most importantly, The Forest overlies the Buried Valley Aquifer, a sole source aquifer that supplies drinking water to Madison, Chatham Borough, East Hanover, and Florham Park. Join us for an important update led by Friends of The Drew Forest, a volunteer organization created by environmental leaders from Madison and neighboring towns, dedicated

community volunteers and Drew alumni. A light breakfast will be served followed by the presentation and a Q&A session. GSWA Members: FREE, Non-members: \$10 for adults/\$5 for children 6-17. Registration is required at *GreatSwamp.org* or call 973-538-3500.

Nature Detective Discovery Hike
Thursday, November 10, 10 AM - 12 Noon
(Teachers' Convention Day)

Great Swamp National Wildlife Refuge, Bluebird Parking Lot

Pleasant Plains Tour Road, Basking Ridge, NJ

What's hiding under those freshly fallen leaves? What's going on in the trees? Let's do some detective work and make some discoveries together! The Great Swamp National Wildlife Refuge is the perfect place to set off in hot pursuit of the region's most-wanted autumn wildlife. Come learn how to identify animals from their tracks, scats (yes, poop) and other clues. Spy on secret hideouts used by birds, insects, and other woodland creatures. Discover the dining preferences of deer, raccoons, and even coyotes by putting a magnifying glass to some scat. All this detective work is easier than you think. And let's face it, it's fun being outdoors in the fall! Recommended for all, but especially children 5 to 12 years old. GSWA Members: FREE, Non-members: suggested donation of \$10 for adults/\$5 for children 6-17. Registration is required at *GreatSwamp.org* or call 973-538-3500.

Veteran's Day Paddle
Friday, November 11 - 2 paddles available:
10 AM - 12 Noon & 12:30 -2:30 pm

Paterson, NJ (specific location TBD)

Veteran's Day is a wonderful day to get out on the water and reflect on how lucky we are to have what we have, thanks to those

who fought for our country. Enjoy a peaceful paddle with a small group of people as we explore a different side of Paterson. Children 8 and up are welcome. All participants 15 and under must be accompanied by a parent. There are 7 spots available per session – only 2 spots per registration. All participants must be able to swim, be comfortable on the water, and wear clothes and footwear that can (and will) get wet and muddy. Life vests will be provided. GSWA members: \$30 each, non-members: \$40 each. Register at GreatSwamp.org or call 973-538-3500.

Fall Community Cleanup at the CMA Sunday, November 20, 9:30 AM - 1 PM

GSWA Conservation Management Area (CMA), 90 Tiger Lily Ln., Harding Twp., NJ
Here come the holidays and, oh, the calories we will consume. Let's lean into the spirit of giving together and get some pre-holiday exercise along the way. We could use your help putting our 73-acre wetlands reserve (aka, our Conservation Management Area) to bed for the winter. There's no shortage of things to accomplish on our honey-do list and a crisp, autumn morning is a great time to get outside and get your hands dirty. We will provide you with all the tools you need to participate for as long as you like! Register at GreatSwamp.org or call 973-538-3500.

New Moon Hike Tuesday, November 22, 5:30-7:30 PM

GSWA Conservation Management Area (CMA), 90 Tiger Lily Ln., Harding Twp., NJ
Come explore the stars and hike the trails of the Conservation Management Area under a new moon when the stars are at their brightest! A new moon is the first lunar phase, which means it will not be visible at all. But don't worry, just because it's dark out doesn't mean the inhabitants of the woods have gone

to sleep. During this guided hike, we will take advantage of the quiet, crisp autumn air by listening for the nighttime creatures of Harding Township like owls, raccoon, and possums. Dress for the weather - waterproof boots are recommended. GSWA Members: FREE, Non-members: \$10 for adults/\$5 for children 6-17. Registration is required at GreatSwamp.org or call 973-538-3500.

Holiday Cookies - Make & Decorate Tuesday, November 29, 6-7:30 PM

GSWA Headquarters, 568 Tempe Wick Rd., Morristown, NJ

Jump-start on your holiday baking at this 2-part, DIY cookie workshop! It's sure to put you in the holiday spirit. First you will channel your inner artist and decorate some pre-baked, whimsical, woodland creature cookies. While they are setting, Hazel and Sandra, GSWA's resident bakers, will step you through making two different types of cookie dough to take home and bake at your leisure. All you need to bring is your creativity, we will provide the rest. And if the first batch of cookies doesn't make it home, no one needs to know. You will have a good supply of dough to make more cookies at home! Feel free to BYO holiday cheer to this festive cookie event. GSWA Members: \$30, Non-members: \$35. Space is limited so register today at GreatSwamp.org or call 973-538-3500.

DIY Winter Wreath Workshop - Outside Thursday, December 8, two options: 5-6:30 PM & 7-8:30 PM

GSWA Headquarters, 568 Tempe Wick Rd., Morristown, NJ

It's not winter until the wreath is on the door. Put on your warm clothes and come craft a homemade winter wreath made from native evergreens and other native plants. You'll

decorate your masterpiece with pinecones, berries, and other items found in nature. While your creativity blossoms, you'll learn more about the natural items being used in this craft. Hot cider will be served. Price: \$35 - covers everything you need to leave with a finished piece that's ready to hang on your door or give as a gift. Two sessions to choose from: 5-6:30 PM & 7-8:30 PM. Registration is required. Register at GreatSwamp.org or call 973-538-3500.

Winter Solstice Hike **Wednesday, December 21, 6-7:30 PM**

Location TBD

Bundle up and let's celebrate the first day of winter, known as the winter solstice, with an evening hike. Winter solstice is the day with the fewest hours of sunlight in the whole year, making it the shortest day of the year. Good news - the days begin to grow longer once again, so it only gets brighter from here! And with the new moon just two days away, the stars in the winter sky will be shining brightly. Be sure to dress for the weather and wear your warm socks for this crisp, invigorating night hike. GSWA Members: FREE, Non-members: \$10 for adults/\$5 for children 6-17. Registration is required at GreatSwamp.org or call 973-538-3500.

Full Wolf Moon Night Hike **Thursday, January 5, 6-7:30 PM**

Primrose Farm at the Harding Land Trust, appx. 15 Brook Drive South, Harding Twp., NJ
Enjoy a leisurely early-winter stroll through the restored wildflower meadow at this night

hike. The January full moon, known as the "wolf moon" is named for the fact that wolves tend to howl more often during the winter season, which is always when this full moon occurs. The moon will guide us through this relaxing winter hike and if there happens to be snow on the ground, we can look for tracks and other signs of the critters who call Primrose Farm home. Dress for the weather and be sure to wear appropriate footwear. GSWA Members: FREE, Non-members: suggested donation of \$10 for adults/\$5 for children 6-17. Registration is required at GreatSwamp.org or call 973-538-3500.

Lunch & Learn - Water Quality & Watershed Friendly Living - Zoom Webinars **January 10, 17, 24, & 31 - 1:00-2:00 PM**

Grab your lunch and join us Tuesday afternoons in January for our FREE lunch & learn Zoom webinars. At each session, GSWA's water quality and environmental education staff will focus on different environmental topics, teaching us all how to live our daily lives in a more watershed friendly way. For example, if you are planning a dinner with a protein that's in the freezer, instead of defrosting in the sink with running water, consider placing it in the refrigerator a few days in advance to allow it to thaw out. This method of thawing also allows the meat to defrost evenly and consistently. Join us for as many sessions as you like to learn more tips and tricks on watershed friendly living. Registration is required to receive the Zoom link. Register at GreatSwamp.org or call 973-538-3500. 🌲

Check GreatSwamp.org/events/ for additional events. Never miss out on our educational events by signing-up for our e-newsletter at GreatSwamp.org

Great Swamp Great Music Festival – Five Years In!

By Val Thorpe, Director of Communications and Membership

It happened again. We somehow managed to pick the hottest day of Spring for our 5th Annual Great Swamp Great Music festival held on May 22 at Giralda Farms, Chatham Twp. Heat and humidity aside, it was a fabulous day of top-notch entertainment, plenty of good food and drink, lots of unique merchandise for sale, and family fun.

The gates opened at 11:00 AM with pre-show music from **Nick Amling & The Life-line**. Nick also provided solo performances between bands to keep the music flowing all afternoon. New to the festival this year, NYC comedian and New Jersey native, **Max Antonucci**, did a fantastic job emceeing the event! Also new to our festival, **The Refuge Dogs** and **The Step Brothers Band** showed the crowd how they get it done. Returning favorites, **Lenox Underground** and **Not Enough Jeffs**, kept the audience on their feet to close out the show. As always, we greatly appreciate all our performers who donated their time and talent.

New Jersey American Water was on-site providing much-appreciated free potable water and reusable water bottles to the crowd. To assist with the plastic bag ban, we also handed out free reusable shopping bags compliments of **the DellaPelles, The Bernardsville Centre** and **ShopRite of Chatham**. Washington House of Basking Ridge once again loaned us their antique

fire truck to serve as our signature bar backdrop. Closing out the event, our 50/50 raffle winner was awarded \$692!

We are grateful for the support of our **sponsors** who are committed to GSWA and to clean water for everyone: Atlantic Health System • Community Foundation of New Jersey • Delta Dental of New Jersey • Adrienne & Dillard Kirby • Peapack-Gladstone Bank • Athleta • A.M. Higley • Gwenn & Tony DellaPelle • EA Boniakowski Insurance • Glenmede Investment and Wealth Management • Investors Bank • Matt & Agi Krauser • Senlac Ridge Partners • Valley Bank • Debra & John Apruzzese • Reed & Adrienne Auerbach • Lynn & Ralph Jones • Lindabury, McCormick, Estabrook & Cooper, P.C. • Pipe Works Home Services • PSEG • RegentAtlantic • Turpin Real Estate. Also thanks to: Interstate Waste Services • Washington House Restaurant • Window Trends of Morris Plains • Harding Twp. Department of Public Works.

See you next year! 🌲



Board of Trustees and Advisory Council Updates

By Sally Rubin, Executive Director

We recently welcomed new members to our Board of Trustees. **Todd Hyde**, a recent retiree, spent most of his career as a corporate Environmental, Health, and Safety (EHS) attorney. Admitted to the New Jersey Bar and the Bar of the Supreme Court of the United States, his in-house practice handled complex EHS compliance and regulatory issues and led efforts to develop and implement compliance and sustainability programs. Todd served on the Chatham Township Environmental Committee for six years and is a current Elks Club member. He also gives back by assisting with corporate pro-bono programs through the Legal Aid Society. In his spare time, Todd like to travel and play golf, tennis, and paddle tennis.



Todd Hyde

We also welcomed **Stacey Valentine** to the Board of Trustees last fall. Stacey is a partner at Avelino Law, LLP, working with A. Jude Avelino to lead the Trusts and Estates practice group. A graduate of Colgate University and Washington & Lee University School of Law, Stacey assists individuals and families in achieving their wealth planning goals. She handles income, estate, inheritance, gift, and



Stacey Valentine

generation-skipping transfer tax issues, and helps clients maximize the benefits of charitable giving. Stacey is a member of the New Jersey State Bar Association, the New York State Bar Association, and the Morris County Bar Association and serves on the Board of Estate Planning Council of Northern New Jersey, the Board of the Women's Association for the Morristown Medical Center, and the Board of the Morristown Club. Stacey and her partner Jude welcomed their new baby Archie this summer. Congratulations Stacey and Jude!

Advisory Council updates

GSWA is pleased to announce that **Roger Jones**, **Judith Hazlewood**, and **Fred Castenschoid** have joined the GSWA Advisory Council. Roger Jones has worked in the banking industry for 20 years and is currently Vice President Territory Sales Manager for Valley National Bank Morristown/Whippany. Judith Hazlewood recently retired after 33 years at McKinsey & Company where she was a Senior Partner and member of their Shareholders Council. Judith served as head of McKinsey's people function in charge of HR and talent and is a broad business-oriented problem solver. Fred Castenschoid was born and raised in Harding where his family still owns and operates a Christmas Tree Farm. Fred recently retired from Storr Tractor Company and he and his wife Martha live in Califon. Both Fred and Martha's parents were involved in the original fight to stop the jetport. Welcome to Roger, Judith, and Fred. 🌲

GSWA Virtual Source to Sea Challenge Wrap-up

By Lynne Applebaum, Director of Institutional Relations

Well, we completed our first Virtual Source to Sea Challenge, and it was a rousing success! We received great feedback from many participants, who enjoyed working at their own pace with so many options for completing their miles. It was a wonderful opportunity



to educate the participants about the geography of the river and the work that we do to support its health, while supporting their own health in this fun,

physical, self-guided challenge. Every time the participants completed 10 miles of the challenge, they received an email which in-

cluded a fact about their location on the river and about GSWA's work. They were also able to see their progress on an interactive map with a lighthearted graphic of a heron with a hat on!

The challenge was 65 days long, running from March 2022 to May 2022. 154 people ran, biked, rolled, walked, swam, or found other ways to get the 80 miles of the Passaic River in before the deadline of May 15th. Participation exceeded our expectations and we hope that everyone enjoyed themselves getting some exercise and learning about GSWA and the river we protect!

Stay tuned for upcoming info about our next challenge this winter. Get your snowshoes ready! 🦶

Hot Spots

By Sally Rubin, Executive Director

Rolling Knolls Landfill Superfund Update

This past spring, the Potential Responsible Parties (PRP) requested permission to make a presentation to the Rolling Knolls Community Advisory Group (CAG). However, the meeting was cancelled at the last minute at the request of the PRPs and has not been rescheduled. We anticipate that the EPA will make a presentation to the CAG this fall on the results of some PFAS testing. There is no new anticipated release date of the Feasibility Study.

On April 29, 2022, Congresswoman Mikie Sherrill sent a letter to both the EPA and US Fish & Wildlife (FWS). The letter expressed concern about the site and requested that the agencies make “meaning-

ful progress on a remediation plan that will protect wildlife and their habitats as well as my constituents in New Jersey’s 11th Congressional District.” The Congresswoman requested that the agencies collaborate with each other and the local community. She further requested that EPA overlay their sampling data with the recent FWS sampling, update the human exposure model to account for human exposure more realistically from regular passive recreational use of the site, and evaluate the FWS preferred alternative remedy. The letter and many other relevant documents are available on the GSWA website at www.greatswamp.org/take-action/rolling-knolls/. 🦶

A Donor Story, Cynthia Robinson

By Nancy Rago, Membership and Social Media Manager

On behalf of the Great Swamp Watershed Association, I offer appreciation for the support of Cynthia Robinson because she cared about the environment and open space preservation. In reading Cynthia's obituary, I was truly impressed by what this woman accomplished in her 91 years. Throughout her life, she gave her time and talent to many Morris County environmental, preservation and social organizations.

As a child, Cynthia enjoyed summers at her grandfather's orchard in Pennsylvania. I got the sense that the farm began her love of nature, horticulture, and the environment. In Cynthia's adult life, there are many examples showcasing her belief in citizen participation and involvement. She was truly a "talk the talk / walk the walk" person.

Cynthia's love of horticulture was shown in her genuine passion for gardening and flowers. She was a member of the Garden Club of Morristown for 60 years. The Garden Club of Morristown has a rich history of their members taking on many local and New Jersey preservation projects, from Frelinghuysen Arboretum in Morris Township to the Morven Museum & Garden in Princeton.



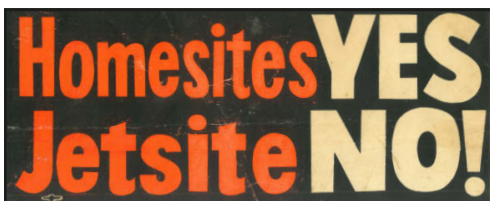
Joan Larson, Kim Dougherty, Cindy Yeaw, Cynthia Robinson. Photo Credit: Garden Club of Morristown, The First Hundred Years: 1913 - 2013.

Another example of Cynthia giving her time and talent was the research and re-creation of a colonial herb garden, the Tempe Wick Garden, when she worked with the National Park Service in Jockey Hollow, Morristown.



Wick Farm - Jockey Hollow

Most notably, Cynthia Robinson believed in protecting the ecological wonder of the Great Swamp watershed and was active in the battle against the Port Authority. She was part of the local effort to fight and stop the plan to make the Great Swamp area into a major jetport. With Helen Fenske and Grace Hand organizing the Great Swamp Committee, the



grassroot efforts of these concerned citizens took almost a decade but their actions were eventually victorious, and the Port Authority abandoned the plan! Permanent protection was provided to the Great Swamp National Wildlife Refuge through the Federal Wilder-

ness Act. Cynthia appeared in the documentary film by Scott Morris, "Saving the Great Swamp: Battle to Defeat the Jetport". This aquifer and wildlife victory of preserving the Great Swamp from harmful human plans is an inspirational environmental news story.

Land preservation was another passion of Cynthia. She was a driving force to preserve the historic Tunis-Ellicks House. Parts of the house were originally in the Great Swamp Refuge area and moved to its current New Vernon location. It is a living example of the 1800's farming community in the area and the historic garden has 120 varieties of herbs and perennials. The Tunis-Ellicks House is on the State and National Register of Historic Places.

Once again in 1981, a grassroots group of concerned citizens came together and founded the Great Swamp Watershed Association (GSWA) to protect the Great Swamp from a new and imposing threat...development around the watershed. GSWA began its history of advocating for intelligent and environmentally friendly land use and development around the watershed. Today the organization is the steward to a 73-acre natural area in Harding Township, our Conservation Management Area (CMA). GSWA is a mission-driven organization as it continues to protect and improve the health of the Great Swamp headwaters, and the water routes along the Passaic River to its final flow into Newark Bay.

Cynthia Robinson's life reminds me of the many ways to make a difference in our world and community. Personally, I

have tried to live my life by getting involved in things that are meaningful to me. I have been involved with local arts organizations, participate in Rockaway River clean-ups in my town, volunteer at my church, and donate blood regularly. My desire to give my time and talent to a cause that I believe in, led me to my job at this environmental non-profit. I have the privilege to see how GSWA's programs and events are beneficial to its members, the local community, and the many school children we educate.

I can see how the participation of our volunteer members is essential to the running of the organization. GSWA is thankful to these individuals who generously give their time and talent...from our board and advisory council members who keep us focused, to our committed regular group of volunteers who help create and maintain the trails at our CMA, to our Stream Team volunteers who assist with our water quality mission to monitor the watershed streams. GSWA is also thankful to the local garden clubs, environmental commissions and other community partners who help organize, publicize, and deliver logistical support to our annual Native Pollinator Plant Sale.

In closing, I would like to offer my condolences to Cynthia's children on their mother's passing. Cynthia Robinson's contribution to the many Morris County organizations made her life noteworthy. May Cynthia's efforts be felt by current and future generations. GSWA is truly grateful for her support through annual membership and participation at our Gala and other events. 🌿



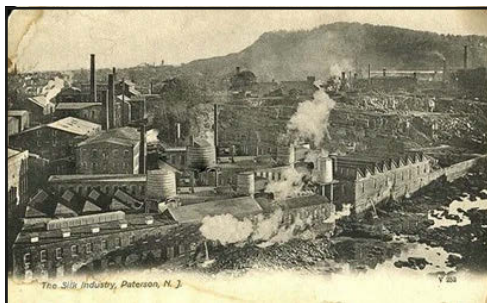
*Cynthia McLean
Margetts Robinson*

Great Swamp Watershed Association's Next Leap Down the Passaic

By Sandra LaVigne, Director of Water Quality Programs

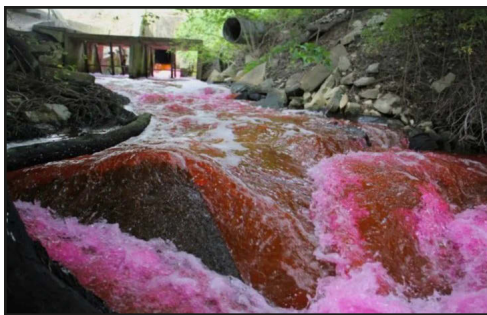
As we approach the end of 2022, GSWA will have completed the third year of our second downriver expansion of our water quality monitoring program along the Passaic River. In 2017, with the development of our new Mission Statement, GSWA made the commitment to encompass the entirety of the Passaic River within our water quality efforts. After almost forty years of protecting and monitoring the headwaters of the river, our Board of Trustees and staff made the commitment to work to protect the entire length of the river for generations to come. Part of this expansion included beginning to collect water quality data below Millington Gorge, our historical end point. Our first data collection expansion (2017 – 2019) brought us as far as Livingston and the second (2020 – 2022) went as far as Little Falls. Starting in 2023 we will begin our third expansion which will encompass the river as far as Dundee Dam. This expansion will take us down to Garfield on the east side of the river and Clifton on the west side. This section of the river is dominated by the City of Paterson as the river loops around the outside of the city nearly surrounding it.

The history of this area of the Passaic River is really the history of Paterson and the Great Falls that inspired an industrial revolution. Alexander Hamilton, one of our famous founding fathers, saw the potential that the seventy-seven-foot-high falls and the power of the river held for industry in the newly formed United States. In 1791, Hamilton along with a group called the Society for Useful Manufactures, conceived the plan for Paterson to be the hub for the industrial revolution.



Silk Industry Photo Courtesy of Silk City Style

The photo of the early silk factories seen here gives an indication of what type of impact that one plan had on this mighty river.



*River in Asia dyed by textile effluent
Courtesy of Planet Custodian*

Even in this picture from the 1800's you can see the factories dumping the chemicals and by-products from production right into the river. In later years, the river would change color from day to day depending on what dye was being used. Though the EPA and water protection regulations have put a stop to this in the US, you can still see the impacts in other countries where regulations are not as stringent.

As the city progressed and manufacturing began to move away, the river still played a large role in powering the Paterson. In 1914, the hydroelectric plant was built to harness

the power of the river more efficiently and provide power not only to the manufacturers but to the residents as well. Then in the 1940's, the city continued its infrastructure improvements and installed a sewer system. Paterson chose a combined sewer system where both the sewage from homes and businesses and that from the storm drains in the streets combine as they flow to the sewage treatment plant. The design includes 23 outfalls or overflows which, when the system is overwhelmed as when a heavy rainfall causes flooding, deposit partially untreated wastewater directly into the Passaic. This is known as a Combined Sewer Overflow (CSO).

All of these factors played into the choosing of our new sampling sites for our third Passaic River Expansion. As we begin to explore the impacts of industry, energy and wastewater on the Passaic River, we will be evolving our chemistry sampling to look at a wider set of parameters. While the EPA and the NJDEP have created regulations that reduce the impacts of pollution on the waters of NJ rivers, many issues continue to cause environmental stress on our rivers. In Paterson, the issue of the CSOs is being addressed

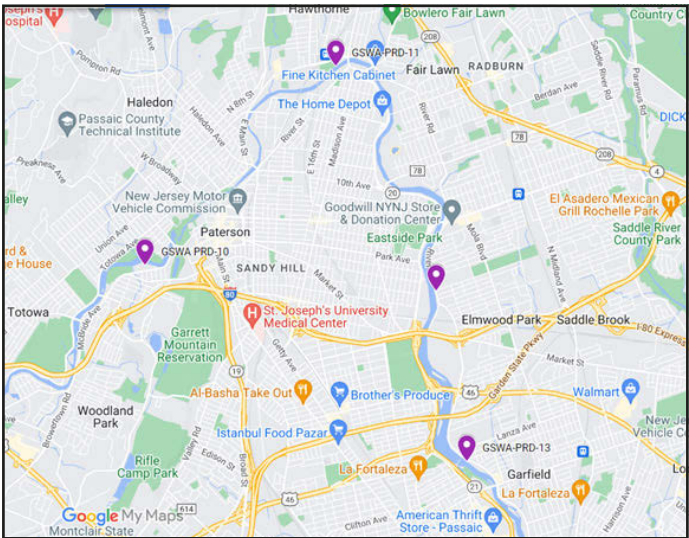
in a Long Plan Control Plan (LTCP) required by the EPA to reduce the number of overflows and the amount of untreated wastewater entering the river. Our sampling data can help NJDEP and other agencies to better understand the main impacts affecting the river and what issues should be addressed first.

On the map you can see our four new sampling locations. These are areas

where we can access the river by wading or with our kayaks, allowing for the most accurate sampling results.

- GSWA PRD10 – This site, located behind the Paterson Fire Department will give us data on the inputs of Molly Ann Brook and the areas of Haeldon and Wayne.
- GSWA PRD11 – This area will capture the northern area of Paterson as well as inputs from Goffle Brook which runs through Hawthorne
- GSWA PRD12 – This site captures the entirety of the industrial areas of Paterson and also Elmwood Park
- GSWA PRD13 – This final site, located just below Dundee Dam, will allow us to look at the impacts of the dam on river ecology and the final inputs from the areas of Clifton and Garfield.

We look forward to our next expansion and all the history and water quality data we will gather. While we expand downstream, we also continue to closely monitor our historic regions of the Great Swamp Sub Watershed and all the regions of the Passaic River that we have already worked in. 🌲



Climate Resiliency at the Conservation Management Area

By Hazel England, Director of Education & Outreach, Land Steward

As I write this, summer 2022's intense heat has given way to summer 2022's drought. New Jersey is poised, or has entered, drought conditions (depending on your zip code) with hosepipe bans, conservation restrictions and stressed plants and animals these conditions produce. One aspect of a changing and increasingly extreme climate is that rainfall has become both more intense and more sporadic. A look at the Rutgers State Climatologist's webpage (thanks Dave Robinson, State Climatologist and GSWA trustee!) shows records for temperatures, rainfall, and lack of rainfall are all piling up over the last couple of years. From the wettest twelve months in 2019, to the driest November and December in 2021, and whether record breaking or not, anyone who endured the last month's extreme heat and humidity can tell that all things both weather and climate related are amping up both at home and across the planet. While these changing conditions are hard to address on a local level and are just beginning to be addressed at the national level with the recent signing of President Biden's Inflation Reduction Act and Climate Bill, at our 73-acre Conservation Management Area (CMA), we are trying to make the environment there a more climate resilient one.

During the restoration conducted as part of a federally funded NRCS program which began two years ago, an additional 320,000 square feet of vernal pool habitat was created. This consisted of depressions or scrapes being dug into the wetland soils at the site to increase the water holding capacity there and provide valuable habitat for spring breed-

ing amphibians. If you have taken a walk at the site any time in the last two years (and we hope that you have!), you will not have failed to notice these wetter conditions. Pools of water where no pools used to be, standing water over large parts of the wetland floodplain forest, and streams and runnels throughout the property full for many months. We are thrilled that the restoration so rapidly began storing so much additional water and survived the conditions of flood after the torrential rains of Hurricane Ida last September, but these changes have not come without additional headaches.

Our property had an extensive existing trail system, built lovingly by community and corporate volunteers over many years, and it was not possible to re-route all these trails, as many passed across what had previously been the highest ground in the area. The restoration caused many of these trails to become waterlogged, forcing us into a wooden boardwalk building frenzy over the last 24 months! Since the restoration was completed in November 2020, we have built more than 1600 feet of new boardwalk, or raised existing boardwalk for a higher, dry foot experience while hiking the trails.

Now that conditions are so dry, a hike through the property may make one wonder why we ever needed so much boardwalk, as the trails are baked hard and dry, and water levels are as low as they have been in two years! What we are doing is making the property more resilient to a range of environmental conditions, able to be navigated after rain or during drought. These additional boardwalks, laid down at the entrance trails to the

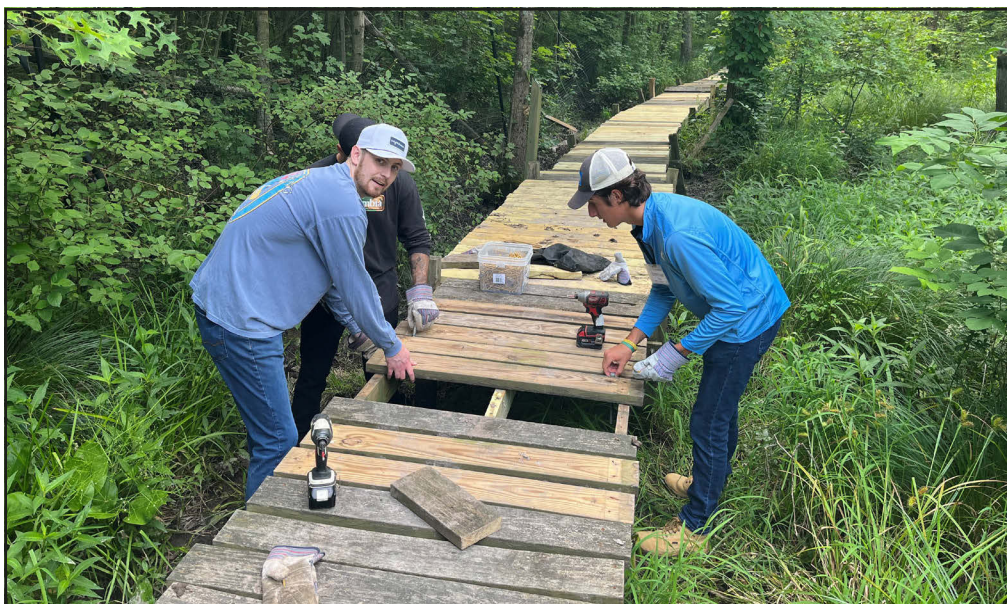
property, allow hikers to navigate to the drier and more diverse and peaceful rear sections, including our red trail which links to the other sections of the CMA Silver Brook trail.

This summer we undertook a huge renovation of our raised boardwalk at the rear of the property over a section of the incredibly beautiful red trail marsh. Volunteers all summer have painstakingly carried hundreds of 12-foot-long planks out the half mile to the original boardwalk, to be used to replace rotted support beams or cut up for boardwalk treads. Each “Stewardship Friday” this summer, no matter the temperatures, we have hauled out our saws, screws, and drills to foot by foot restore this raised section of boardwalk. We can finally see the end is in sight for this huge restoration along a four-hundred-foot length section of boardwalk. This project is nearing completion just in time for a busy fall of field school and college programming at the site. We already have more than 16 field days on the books for our beloved CMA this fall, and all these repairs, renovations and resiliency

hardening projects ensure that we can use the site year-round for our educational as well as recreational needs.

We have also begun to create brand new trails throughout the 20-acre recently acquired Lamorgese parcel of the property, battling huge multiflora rose thickets and dense patches of invasive species to create sensible linkage trails that allow hikers to explore the entire property, cross the Silver Brook and enter the furthest reaches of the trail system. These are long term projects that will take many months if not years to fully complete. But they will allow hikers seeking respite from summer’s heat, or those seeking to splash through winter’s rains, the opportunity to hike at our CMA, and see our carbon sequestering forest hard at work, doing its best to store as much CO₂ as possible in this ever-changing New Jersey climate.

Check out our new, updated trail map on our CMA webpage, www.greatswamp.org/conservation-management-area, or pick up a copy at either of the kiosks at the CMA trailheads on Tiger Lily Lane. 🌿



2022 Gala Celebration

Mark your calendar! Our Gala Celebration and Silent Auction will be held on Tuesday, **October 18**, at the **Brooklake Country Club** in Florham Park, NJ. This is our biggest fundraiser of the year!

Join us for an evening filled with good food and drink, spirited mingling, browsing our popular silent auction, and an important presentation by our Gala keynote speaker, Olivia Carpenter Glenn, Chief of Staff and Senior Advisor for Equity in Region 2 of the US Environmental Protection Agency (EPA).

This year's theme, Environmental Justice, shines a light on the inequity that exists in our country, even in New Jersey, when it comes to clean water and a healthy environment.

OCTOBER 18, 2022 - BROOKLAKE COUNTRY CLUB
5 PM VIP RECEPTION | 6 PM COCKTAILS & SILENT AUCTION
For Tickets, Wine Packages & Advertising, and Un

Upstream

on & Silent Auction



COUNTRY CLUB, FLORHAM PARK, NJ

AUCTION | 7:30 PM DINNER & KEYNOTE SPEAKER

Underwriting Opportunities, visit GreatSwamp.org

From the Financial Corner

By Sue Levine, Director of Finance

Our fiscal year ended on June 30, 2022, and I am happy to report that we again achieved operational revenues of over \$1.0 million (M). Our operational expenses were also just over \$1.0M resulting in breakeven results which were in line with our annual budget. Unfortunately, the stock market was not as favorable, and our Board designated reserve was down for the year by \$0.3M. As a result, net assets declined by \$0.3 M.

We started the year off with our largest fundraiser, the October Gala, with results better than budgeted. Although it was smaller than prior years due to Covid concerns, it still resulted in net earnings of more than \$114 Thousand (K).

We faced some ups and downs on revenue with Corporations, Foundations and Trustee Giving coming in lower than budget, offset by Major Donors, the Music Fest and the Native Pollinator Plant Program coming in better than budget. The Native Plant Program continues to be a significant mission

success and the team and volunteer hard work were highlighted in the results. We held our 5th annual Music Fest, which was again challenged by weather, but still resulted in net earnings of \$30K.

On the expense side, again some ups and downs. Although the Capital Campaign remains a strategic goal, we have put the process on hold until we have more information regarding relocating our office to somewhere we will own. Therefore, amounts budgeted for the Capital Campaign have not been spent.

The team at the Conservation Management Area were incredibly busy this season with boardwalk repairs and tackling invasive species, as a result, those expenses were also higher.

Coming out of Covid, the entire team brought in a successful fiscal year 2022, and 2023 is shaping up to be even better now that the schools are ready to incorporate more in-person environmental education. 🌲

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.

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.

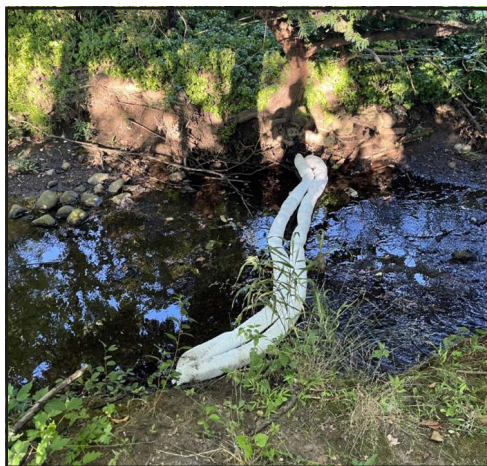
Quick Response from Local Municipalities Helps to Protect our Waters

By Sandra LaVigne, Director of Water Quality Programs

Early in August 2022 two local community members reached out to GSWA on two separate environmental issues. The first event was a report of an oil spill in the headwaters of Loantaka Brook near Woodland Ave in Morris Township. A local member of the community alerted GSWA to the spill and we immediately went out to confirm that there was an issue. We surveyed the area around Woodland Ave, both upstream and down, and confirmed that an oily substance, most likely diesel fuel, was spreading downstream from the area of a culvert upstream. GSWA Director of Water Quality, Sandra LaVigne, alerted the Morris Township municipal offices located adjacent to the location of the spill. They immediately jumped into action. The Fire department was notified and the Morris County Hazmat team

some signs in the stream along Fanok Rd. but not as far down as Kitchell Lake.

GSWA also notified NJDEP through the alert line and began an incident ticket. We also contacted local Morris Township Police



Absorbent sponges deployed along Loantaka Brook to collect the oil from the river



*Morris County Hazmat Response Team
Photo by Ginger VanRyzin*

was on the scene within the hour. GSWA staff member Ginger VanRyzin stayed on the scene and continued to investigate how far the spill had spread downstream. She found

and Hazmat. With the amazing, quick response from our local, county, and state environmental hazardous spill teams, absorbent barriers have been set up to prevent further spread of the spill and to clean up the existing oils.

The second issue brought to the attention of GSWA was an illegal draw on a tributary of Indian Grave Brook in Bernards Township. While New Jersey is experiencing drought conditions and many communities have restrictions on using household water to water gardens and lawns, it is important to remember that our local streams, especially the smaller streams in the headwater regions, are also experiencing drought and stressful environmental (continued on page 24)


GSWA Environmental Education Program Receives Support from Wells Fargo

By Lynne Applebaum, Director of Institutional Relations

GSWA is so fortunate to receive grant support from funders such as Wells Fargo, who recognize our environmental education programming with students and adults across the Passaic River region as essential for the preservation of its waters and lands. GSWA's unique and impactful STEM based environmental education programs and activities focus on providing students with an understanding and awareness of the need to protect the environment. Students acquire the knowledge, motivation, and tools to take actions that will help improve their local environment. During the 2021-2022 school year, GSWA's education team taught students and families from around the Passaic River region, including Paterson, Newark, Wayne, Madison, and numerous others. Programs ranged from SWaMP (School Water Monitoring on the Passaic) to Outdoor Learning Experiences at our Conservation Management Area, to

our educational webinars leading up to the Native Pollinator Plant Sale, to educational hikes and kayak tours.

"The health of our environment and the quality of our watersheds is something that affects every community here in northern New Jersey," said Tomas Porturas, Senior Social Impact & Sustainability Specialist at Wells Fargo. "Whether you live in a rural, suburban, or urban area near the Passaic River, it is important that we teach the next generation of students the value of stewardship. Wells Fargo is a proud sponsor of the Great Swamp Watershed Association's educational programs, which gives young people hands-on learning experiences about protecting our local environment."


GSWA is grateful to Wells Fargo for its support of these educational programs and looks forward to another great upcoming school year. 

Quick Response from Local Municipalities *(continued from page 23)*

conditions. Another local resident contacted GSWA to alert us to the wrongful use of stream water for lawn watering. A resident had set up a system that drew directly from the stream to water a large lawn pulling gallons of water from the stream and further stressing the wildlife that lives within and around the stream. GSWA contacted the local police department who immediately went

out and informed the resident that this was not allowed and stopped the practice.

Again, our local enforcement agencies have helped to keep our streams clean and healthy for everyone.

GSWA is proud to be a resource for our local community members when they see something of concern in our waters or environment. 

Introducing Sarah Hunt

I joined GSWA this March as an Education, Land Steward, and Water Quality Associate. The work is as varied as my title and I love that it keeps me on my feet and learning new things! Working outdoors to restore and protect our land has been a wonderful experience and I look forward to diving in as we get back to more in-person education this fall.

While I've always loved the outdoors, my bachelor's degree is in Industrial Design. In between my computer-heavy school years, I spent my summers working on farms, hiking, and camping. As soon as I graduated in 2019, I was spending all my free time in the woods learning about fungi, native plants, and our effects on the environment. I started working with a local gardener, then with a native plant landscaper, and eventually began my own work maintaining these areas.

In 2021, I returned to school part time, studying biology in hopes of shifting my career towards environmental science. At the same time, I started volunteering with GSWA building boardwalks, controlling invasive species, and collecting water samples along the Passaic. Little did I know that within the year there would be a job opening! I jumped at the opportunity, and I'm so grateful to have been brought aboard by the program staff team.

I'm passionate about fostering more productive and accessible land, so working in



Sarah Hunt

our 73 acre Conservation Management Area is always rewarding. Even more rewarding is sharing the trails with school children as we teach them about our local environment and the importance of green spaces. I'm amazed by the group of volunteers that join us in the rewarding work of restoring and maintaining this land.

As I continue to learn from my knowledgeable and passionate coworkers, I'm excited to share my own skills and excitement in each program and project we take on – and grateful for my role here at GSWA! 🌲

Know Someone Who Would Like to Become a Member?

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

What is a Forest Worth?

By Claire Whitcomb, Guest Author, chair of the Madison Environmental Commission and member of the steering committee of Friends of the Drew Forest

That's a question I get asked a lot as a volunteer for Friends of the Drew Forest, a nonprofit working to save a rare, 53-acre intact forest on the Drew University campus. The forest is at serious risk of high-density development. A lawsuit between Drew University and the Borough of Madison is in progress, and the question of "what is the Forest worth" has now become a legal concern rooted in affordable housing issues.

To give voice to the ecological value of the 53 acres, Friends of the Drew Forest worked with Ed Lloyd, a well-respected environmental attorney, to file an *amicus* or "friend of the court" brief. In addition, it retained Davey Resource Group, one of the leading environmental consultants in New Jersey, to conduct an in-depth environmental review of the 53 acres. Donations, mostly unsolicited, over

the past year and a half enabled us to take this step.

The report from the Davey Resource Group states that the Forest "has limited development potential but extremely high value as a preserved open space." It details the Forest's importance as a recharge zone for the Buried Valley Aquifer, a sole-source aquifer for Madison residents and additional towns. It documents its irreplaceable large trees, explains the Forest's role as "identified habitat" for the federally endangered Indiana bat and goes into depth on specific wetlands, open space waters and steep slopes where development would face significant legal and permitting hurdles.

It states that Drew University has been a significant partner in the Forest's fourteen-year restoration. The U.S. Fish and Wildlife Service, which contracted with the University in this restoration effort, wrote in a letter to Drew in April 2021, "Although our 10-year contract with the University had ended, it was the understanding that the funds were only being provided to restore the forest for the long-term."

The report, with its maps and citations, adds depth and detail to the letters and resolutions from a marquee list of New Jersey environmental groups: the Great Swamp Watershed Association, Environment NJ, Sierra Club NJ, the Native Plant Society of New Jersey, the Highlands Coalition and many more.

Six towns have passed resolutions in favor of preserving the Forest—Madison, Chatham Borough, Chatham Township, Parsippany, Morristown and Morris Township. Their reasons (*continued on page 27*)



Students 2 Science Fall Dates are Booked!

By Ginger Van Ryzin, Education, Land Steward and Water Quality Associate

We are thrilled to announce that GSWA will be once again partnering with Students 2 Science to bring educational opportunities to underserved students in Orange and Paterson high schools. Students 2 Science, or S2S, is a non-profit educational organization dedicated to bringing high-quality STEM education to disadvantaged communities in New Jersey. After a two-year hiatus from the COVID-19 shutdown, our educational staff have booked nine full days of educational activities in the fall and nine more in the coming spring to get students engaged and learning about the natural sciences at our Conservation Management Area. Throughout the program, students will learn how to determine the value and health of a freshwater ecosystem. Each day, students will learn three types of environmental analysis: assessing the health and quality of a stream, analyzing soils, and con-



Students 2 Science



Sandra LaVigne, Director of Water Quality, teaching a previous S2S class from 2019 how to identify macroinvertebrates

ducting an ecosystem services survey. At the end of the day, we hope that the students will take away that not all scientists work in labs with white coats, but in some cases, they are out in the swamp looking at what organisms are living in a stream! 🌿

What is a Forest Worth? *(continued from page 26)*

echo the Davey Resource Group's findings on aquifer recharge and interconnections to neighboring parks.

The Great Swamp didn't get saved quickly or easily. Preserving wildlife habitat and open spaces in our individual towns takes grassroots diligence and broad collaboration. But our children, along with the migratory

birds, the salamanders and turtles sunning themselves on logs, will thank us.

To read the amicus brief and the Davey Resource Group Report, go to www.friendsofthedrewforest.com/environmentalreports. A self-guided trail guide to the Drew Forest can be downloaded at www.friendsofthedrewforest.com/visit. 🌿

Jane Kendall, Advisory Council

By Wade Kirby, Director of Development

Advisory Council member Jane Kendall's life has been an odyssey. Jane began her career in corporate America, then moved to Europe where she did organizational and leadership development consulting throughout the continent. She developed an affiliation with the Center for Creative Leadership in Brussels, which continued when she returned to the US in 1993. After September 11, Jane led a foundation-funded effort to explore individual coping mechanisms that could help coach people suffering from catastrophic loss.

Jane is no stranger to environmental preservation and has been a supporter of the Great Swamp Watershed Association since 1996. Jane's late husband David Dietz was involved in the Harding Township Environmental Commission and helped Jane develop an awareness of, and commitment to, the need to proactively support environmental issues. She joined the Friends of the Great Swamp National Wildlife Refuge, and then GSWA. Executive Director Sally Rubin approached her about joining the Board of Trustees where she served two terms. Having built the Leadership Center at The New School in New York, Jane's expertise was a great asset to the board. She has spoken on leadership, organizational change, and creative thinking globally. She continues to coach leaders and leadership teams.

She remains committed to advancing proactive environmental education and advocacy. Jane considers the mission of GSWA to be vital: protecting water resources for millions of people in New Jersey! The diversity of challenges along the Passaic River, from source to sea, create complex opportunities

for developing an awareness of, and advancing, GSWA's work. But indeed, the bigger the base to work with, the broader the perspectives and creativity. Jane is very supportive of our downstream expansion. She *loved* the documentary "American River" and feels that it is an excellent resource for addressing the challenges that we face. And working with children all along the Passaic communities is strategically important...teaching them to become advocates for our very precious water supply. It is a HUMAN RIGHT to have clean water. Jane suggests that GSWA becoming a Passaic River WATERKEEPER* Alliance Affiliate is enabling it to become a player on the world stage, addressing global issues. It is clearly a reason for new people to become involved in GSWA.

She hopes we will eventually have a touring boat, such as the Hackensack Riverkeeper has, which would enhance interest downstream where navigable. This would create high visibility and provide an educational resource in areas with dense urban populations. Additionally, it could attract new corporate and foundation funding. Jane thought our "Virtual Source to Sea Challenge" was a great idea. She took the challenge which she feels created a greater awareness of the river's attributes...and was a *healthy, enjoyable activity* for both young and old! Jane encourages schools along the Passaic to participate in future years.

Jane would tell a GSWA prospective member that having clean water is imperative to live. We can either be a part of the problem or seize opportunity to protect our natural resources. Involvement with GSWA either as a volunteer, a financial (continued on page 31)

Frances Schultz, Advisory Council

By Wade Kirby, Director of Development

A lifelong environmentalist, Advisory Council member Frances Schultz is a member of the Rachel Carson “Silent Spring” earth conscious generation. Upon entering college, Fran had no idea what she wanted to do, but earned a degree in geology and then a master’s degree with a specialization in hydro geology and aqueous geochemistry to be exact! This is a study of the way water moves through rocks and the chemistry of water in the environment. Fran then went on to write her master’s thesis on pyrite formation associated with acid mine drainage. She got a job as an environmental consultant right out of graduate school in 1983 and has been doing it ever since. She admits the industry has changed enormously since then. For example, in 1983 remediation technologies for soil consisted of digging up hazardous material and burying it where it is less damaging. For water, all that was available was a method called, “air stripping” to remove the volatile organic compounds or filtration running the water through sand or carbon, resulting in cleaner water coming out the other side. There are many more treatment choices now including some that break the chemicals into basic elements like oxygen, and carbon. Cleaning up contaminated sites is imperative for having clean water and having clean water to drink is a fundamental human right. Fran says this is what led her to what she is now doing for the Great Swamp Watershed Association. She had seen flyers for GSWA over the years but never knew much about it. Her business, GEI Consultants, Inc., was hired to provide technical assistance to the CAG (Community Advisory Group) working on the Rolling Knolls super-

fund site. Fran had a meeting with Sally Rubin regarding the mission of GSWA and she was “enchanted.” She became very interested in what GSWA was doing in the community and for the Passaic River watershed as she was working on additional projects in Paterson along the Passaic River.

Fran likes to canoe and she has seen and smelled the river’s consistent improvement since 1988. She thoroughly enjoyed the documentary film, “American River.” She lives in Little Falls admitting that the river smells *so much better now!* She encourages a trip to the Great Falls in downtown Paterson. Fran feels that cleaning up Rolling Knolls is important to GSWA’s future. This act will spread the message along with other organizations interested to protect the Passaic and educate people. Water quality monitoring is unique to GSWA, as is the building and installation of rain gardens; a most beneficial improvement for property owners. Recognizing plants in the area, both suitable for certain water conditions and aesthetic in appearance, is also a vital part of GSWA’s work. Turbidity in the river following rainstorms due to certain residential landscaping preferences that should be changed Fran feels is a valuable educational component unique to GSWA.

Our rivers are an important part of our lives serving a vital role in the ecosystem crucial to our own health and wellbeing. GSWA *gets things done!* Another documentary film, “Saving the Great Swamp/Battle to Defeat the Jetport” created an awareness of that historic victory during the 1960’s and made Fran aware of the significance of the Great Swamp. Having learned of GSWA’s guided hikes and educational (continued on page 31)

First-time Gardening – I’ve Seen Better but Hey, Not Bad

By Val Thorpe, Director of Communications and Membership

As my second spring in my new home approached, I found myself ready to consider putting a garden or two in my yard. I am not known for having a green thumb and in all my years have never had a garden. As the GSWA native pollinator plant sale approached, I decided it was time. I purchased a sunny kit and a shade kit without any thought of where to plant since there were no established garden beds on my property.

I proudly picked up my plant plugs and brought them home. Immediately, I felt a sense of responsibility to keep these little things alive. But, how? My calendar was packed, and I needed time to dig up the grass to make a bed. The plant plugs were still in the little containers they came in and I was watering them daily but growing

spot in my back yard that needed attention, dug up the grass, and planted my plugs 12 to 18-inches apart, as the instructions stated. Luckily, they had all survived the 3 weeks in the cramped quarters of their original containers!

As I watered my garden for the first time, I felt a sense of relief and pride. They all looked so... happy(?) all stretched out in their new home. As the stressful weeks leading up to our music festival in May approached, I took comfort in my morning ritual of turning on the hose (with an adjustable nozzle, of course – every good gardener needs one) and watching the gentle spray darken the mulch. Did I mention I mulched?! And I called out to my yard, “Pollinators, come and get it!”

In addition to the sunny pollinator garden in my back yard, I also dug up an area in the front yard and planted the shade plugs. A few days later, I felt compelled to pull my car over and purchase wispy looking tomato, chive, and basil seedlings from a young girl who was selling them down the street. My



concerned. My co-worker and our resident plant expert, Hazel England, said, “Just get them in the ground and you can always transplant them later.” So, one hot afternoon in mid-May, I finally found an ugly

neighbor took one look at the chives and said, “You’ll be lucky to get enough for one baked potato by the end of summer.”

Three months later, I’m excited to share that all the plants are still alive and thriving.

ing! The back garden really flourished to the point that I had to cut some down a bit (again, based on the instructions I had received with my kit.) It also became apparent that I had not made this garden big enough, so it's not as aesthetically pleasing as I had hoped. But when the weather cools, I will expand it and transplant some further out.

Things that make you say, hmmm... Something has been dining on my basil. Beetles perhaps. I'll investigate that and try again next year. My front (shade) garden is not growing nearly as fast as my back (sunny) garden. I understand it will burst onto the scene at some point as it matures year-over-year. I'll be patient.

Small victories (to date)... One of the cardinal flowers bloomed a brilliant red. One purple coneflower currently has a



cone that looks like it will do something soon. My salads now have fresh tomatoes that I cultivated myself. My chive plant took off. A hummingbird flitted past me the other day. Bumblebees have been buzzing around the gardens. And as I type, there are two beautiful monarch caterpillars enjoying my swamp milkweed.

In summary, I am loving being a first-time gardener and cannot wait to see how this season wraps up. Next year, I plan to purchase a sunny expansion kit from our plant sale and who knows? Maybe I'll also grow potatoes to go with all my chives!

Now it's your turn. Please share your native pollinator garden pictures and stories with us. Email me at vthorpe@GreatSwamp.org. 🌿

Jane Kendall, Advisory Council *(continued from page 28)*

supporter, or both is a gratifying experience where you are making a life-sustaining contribution to society. Fundamental but exciting!

Forever adding value to our community, Jane has been a photographer for many years. Her book, "Rural Harding: Fleeting Glimpses" highlights the rural nature of the area and is a call to action to preserve it. 100% of the

profits go to non-profit organizations.

Jane co-founded the Friends of the Kemmerer Library in Harding Township. She has been on the Board and the Advisory Council for Nourish NJ, was a board member of the Center for Musical Excellence, and is currently an Executive Board member for the American & Foreign Christian Union. 🌿

Frances Schultz, Advisory Council *(continued from page 29)*

activities, Fran would advise anyone interested to *get involved*. People are much more likely to give of their time as volunteers, and their resources as members and donors if they are

participating and enjoying the interaction. Fran has tremendous admiration and respect for GSWA, and GSWA is certainly grateful for her dedication to us. 🌿

Secret Life of Crayfish

By Ginger Van Ryzin, Education, Land Steward and Water Quality Associate

If you ever spent time in steams during the summer, whether it be hiking or finding a cool place to spend the heat of the summer day, you may have noticed a crayfish or two scuttle by, spooked of your moving feet.



Red Swamp crayfish.
Drawing credit: Rosa Martinez

Or perhaps you have eaten crayfish before, either at a Cajun crawfish boil or during a Swedish crayfish party, where hundreds of

crayfish are cooked up for people to enjoy. Have you ever taken a minute and wondered, what is it like to be a crayfish? Well today is your lucky day, because in this article we will be exploring all things crayfish!

The study of crayfish is called Astacology, coming from the crayfish superfamily name Astacoidea. Crayfish are found throughout the world, with the only exceptions Africa and Antarctica. In the US, there are about 450 species of crayfish, eight of which are present or potentially present in New Jersey. Very little research has been conducted on crayfish populations in New Jersey and although eight species of crayfish have been reported in the past, it does not mean they are still here today. One species, the devil's crayfish, is so uncommon that their population size is unknown to this day.

Crayfish can be found throughout the Great Swamp Watershed and the greater Passaic Watershed, living at the bottom of rocky streams, lakes, and ponds. These freshwater crustaceans are opportunistic omni-

vores—meaning they will eat anything they can find—from plants to insects, fish, and in some cases other crayfish! Being a bottom-dweller means crayfish are low on the food chains and are a staple meal to many predators. Mammals such as otters and mink, wading birds like herons and egrets, as well as larger species of fish and turtles will consume crayfish; all of which are found throughout the Passaic Watershed.

During winter, crayfish burrow down in the mud and enter a dormant state where they slow down. Once the warm spring air



Camouflaged adult virile crayfish

begins to warm the water, it signals to the crayfish that it is mating season yet again. Some species also mate in the fall, but no matter if mating occurs in the spring or the fall the eggs will not be laid until springtime. Surprisingly, crayfish are great mothers despite being a crustacean. Once the eggs are laid, the mother keeps her eggs in her swimmerets (located under their tail) for about a month until the eggs are ready to hatch. After hatching, the baby crayfish will continue to stay with the mother for two to three weeks



Photo Credit: Jim Rathert



A young crayfish, about 1 month old

until they are slightly bigger than a cooked grain of rice. Then, the baby will let go of the mother and they will live independently until it is their time to partake in mating season.

Just like any other organism, species of crayfish can be invasive when introduced to a new ecosystem. Non-native crayfish introduced in New Jersey become invasive since they are much more aggressive than their native counterparts. While the native crayfish uses camouflage and flight to escape a predator, the invasive species will stand their ground and fight their aggressor. Predators in New Jersey are unaccustomed to their meal fighting back, so in the end they typically leave the invasive crayfish alone and look

for other prey. These crayfish are introduced into new waters through fisherman who use crayfish as live bait and inevitably, the crayfish bait escape and begin a new population in a new stream. Fishermen who do use live bait are encouraged to bring the remaining bait home rather than dumping them into the stream when done fishing.

Crayfish cannot tolerate very polluted waters, so it is important to keep our waterways as clean as possible. So, next time you are by your local stream or river, clean up any trash you see, and you just might see a crayfish scuttle by! 🌿

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 or virtual presentations that will educate and inspire members of your local club or group. Please contact Hazel England, Director of Education & Outreach at (973) 538-3500 or hazele@greatswamp.org.

Plants for Pollinators – Yes Please!

By Hazel England, Director of Education & Outreach, Land Steward

Our second annual Plants for Pollinators sale, held in conjunction with our many community partners was a great success by all metrics. Learning from feedback we gained from our first year's sale, we made changes and improvements for this year, in addition to adding 60% more plants than last year's program. We offered 28 individual native plant species and six different kits to meet a range of typical yard conditions. This year we also had kits for shade, rain gardens, and sunny sites. We expanded the range of single species we sold and offered signs and hats as part of the sale.

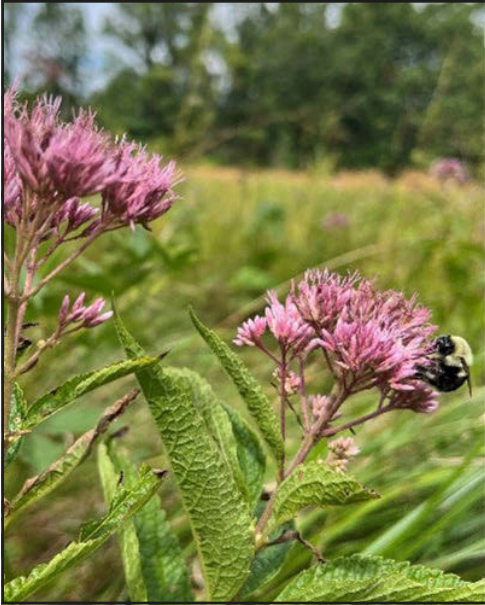
We offered a monthly newsletter – 'Make way for Pollinators' – filled with useful information to help native gardeners plan, learn, and connect with high quality native plant information. Past editions of the newsletter and a growing array of pollinator resources can be accessed at <https://www.greatswamp.org/native-plant-sale/garden-resources/> year round. We hope these will serve as a go to resource for our growing cadre of pollinator gardeners.



Plants for pollinator hat designed by Isabel DeVito

Our informative webinars, offered monthly leading up to the sale, were viewed by more than 760 attendees. Compare this to the solitary webinar we presented in our first pilot year with 150 participants, and it is hard not to be excited that so many area residents are intent on learning more about growing native plants and supporting declining pollinator communities. While the program directly meets GSWA's mission and ties into our long running Watershed Friendly Living program, with the aim of increasing biodiversity around the watershed, it also proved an important fundraiser for GSWA, and some of our urban, underserved schools we work with downstream will directly benefit from this. Indeed, sales were so brisk in the first couple of hours that our computer server had a hard time keeping up with the volume – how great that swamp milkweed and butterflyweed can attract the type of buying frenzy of concert tickets! The initial 3 days of sales had a combined 343 orders and \$39,270 in sales, and we sold to 640 different customers by sale's end!

Far more importantly, the plant sale has been a great way for GSWA to connect with community partners throughout the Passaic River watershed. This year we worked with 26 partner organizations, up from 17 last year. Our partners included municipal environmental commissions and green teams, locally focused nonprofits, and NJ native plant chapters. Through this network, we spread word of the sale far and wide, through a variety of social media means, garner the many volunteers needed to effectively run a program and sale of this size, and generate community and connectedness focused



Bumble bee nectaring on Joe Pye weed

on an issue close to all our hearts. All told, more than 22,000 plant plugs made their way into area gardens, parks, and schools, up from the 14,000 we were so excited to sell the first year. From our first, hastily enacted sale last year, we have increased the plant sale in all dimensions!! If you haven't yet joined the Native Plant growing wave, contact us to have your name added to our pollinators' database, where you will receive information and resources to help you plan for the sale next year – and yes, we will be stocking more shade and wet loving plants in response to the overwhelming demand!

Whether you purchased plants from us or not, during the heights of summer's heat, you will hopefully be noticing a ton of flying insects right now. My own yard is filled with butterflies, moths, hummingbirds and

bees of all colors, shapes and sizes and many other beasties that seem to love the many plants in bloom. If you are not a trained entomologist, you might be wondering what the heck some of these flying beauties are, including the hummingbird moth, which looks part hummingbird, part lobster tail, but is in fact all insect! If you are unsure of how to identify the species you see, there are several online and good book resources that can help beginners become expert pollinator spotters. Below are a couple of my personal go-to resources:

Pollinators of Native Plants – Attract, Observe and Identify Pollinators and Beneficial Insects with Native Plants, by Heather Holm (Pollination Press) is a great guide, filled with glossy pictures and cross-linked lists. You can start with the flower you have and see what insects visit upon it or find your flier and see which plants it visits. Good natural history information is presented on these species too.

A fabulous online resource comes from The U.S. Department of Agriculture Forest Service, www.fs.usda.gov/wildflowers/pollinators/index.shtml. This mine of information is searchable but includes the major groupings of flying pollinators of all types (not just New Jersey specific ones) and includes pollinator of the month information.

Xerces society, www.xerces.org/ has huge amounts of information on all things invertebrate, including downloadable PDF guides to bumblebees [www.xerces.org/sites/default/files/2018-05/12-052_01_Eastern_Bumble_Bee.pdf] and lots of other useful identification information. 🌱

Take a Dip – Meet New Jersey’s Semi-Aquatic Mammals

By Sarah Hunt, Education, Land Steward and Water Quality Associate

GSWA works all along the Passaic River and its headwaters to monitor water quality. Our staff and volunteers see all kinds of wildlife while sampling- let’s learn about some of the mammals that live on and near the water in New Jersey.

Raccoons are the semi-aquatic species we all know! Here in New Jersey, they thrive both in the crowded urban areas and in the more rural parts of the garden state. These 10-20lb omnivores eat nuts, seeds, insects, frogs, and crayfish – making wooded wetlands a buffet for them. Their muddy pawprints are often seen along our boardwalk at the Conservation Management Area. Often thought to “wash” their food, the action of dipping their meal and paws in the water is actually called “dousing” and is done to increase their tactile ability. Their paws are highly sensitive and dipping them in water allows them to better visualize what they’re holding- an important trait for a nocturnal animal! Although *Procyon lotor* – the common raccoon – is native in New Jersey, the highly adaptable animal is considered invasive in much of Europe and in Japan.

Beavers – *Castor canadensis* – are known as ecosystem engineers, significantly altering the landscape in a way that creates new habitat and increases biodiversity. They are the world’s second largest rodent, weighing 25-70lbs with an herbivorous diet of aquatic plants as well as bark, leaves, and even young twigs of trees. Trapping and habitat loss decimated the state’s beaver population until legal protection for the paddle-tailed mammal was passed in 1903. Today, beavers maintain a healthy population in New Jersey. Keep an eye out for gnawed and felled trees, paths in bank vegetation, and large stick lodges in the water, and you might just spot one yourself.

Sometimes mistaken for beaver while swimming, the much smaller **muskrat** – *Onychomys leucogaster* – also creates lodges in the water. Their lodges are more likely to be made out of mud and small herbaceous matter like cattails and reeds. Weighing only 1.5-4.5lbs, these rodents have a lesser effect on their environment than the beaver but can still change the habitat of a stream by creating their small lodges, digging into undercut banks, and eating large amounts of aquatic plants. Their name comes from the musky scent they secrete to mark their presence in an area.

The remaining semi-aquatic mammals in New Jersey belong to the weasel family (*Mustelidae*), named for the glands which allow them to project an odorous substance as a territorial marker or defense mechanism. River otters, mink, long and short tailed weasels, and fishers are all mustelids native to New Jersey, and all are primarily carnivorous. They range from living mainly in water, to using water as an area to find prey, but all of them are capable swimmers. Ranging from common to rare, some of these species are hardly ever seen by people. The fact that many of them are crepuscular or nocturnal makes them even harder to spot, but if you spend a lot of time by clean rivers in wooded areas, you might just see one!

River otters were once widespread throughout the country’s waterways, but now the total population of *Lontra canadensis* is estimated to be 100,000. Although there is still limited trapping of the 10-30lb animals, habitat loss is their biggest threat. River otters need clean water with a wide range of prey to thrive, so highly polluted and disrupted rivers don’t provide them with everything they need. Luckily, the highly social animals have made a comeback and are now considered a species

of “Least Concern” regarding protection. Still, the elusive creatures are an important indicator of our water health, and we should continue to be mindful of the habitat they

need. If you see piles of clam shells along riverbanks, you may be seeing signs of otters.

The **American mink** – *Mustela vison* – is known as a fierce hunter, capable of climbing trees and swimming underwater to catch prey. Their population in New Jersey is stable, and while they are not rare, their habits make them hard to spot. Mature mink have few natural predators because of their ability to hide and defend themselves. Despite their solitary behavior, mink communicate with purrs, barks, hisses, and growls as well as chemical signaling.

Long-tailed weasels – *Mustela frenata* – control rodent and rabbit populations, and hunt mainly terrestrial animals. Still, they are generally found near freshwater where prey is more abundant and their ability to both swim and climb gives them an advantage. They weigh only 0.5-1lb, but are capable of hunting much larger prey on their own. If disturbed they are known to make loud chirping sounds.

Less common in New Jersey is the **short-tailed weasel** or ermine – *Mustela erminea* – are known for their pure white winter coat, a trait that distinguishes them from the long-



River Otter. Drawing credit: Rosa Martinez

tailed weasel. New Jersey is at the southern end of their range. Weighing a scant 0.15-0.45lbs, these mustelids will cache excess food for later use, hunting everything from voles

and mice to red squirrels and young hares.

After clearing of forests and unregulated trapping by early European settlers, **fishers** – *Martes pennanti* – were forced out of New Jersey for over 100 years. In 2006, the first confirmed sighting came from a Sussex County trail camera, and more reports from North Jersey have slowly rolled in since then. The species is still considered rare in our state. Weighing between 4 and 13lbs, fishers are fierce hunters, though not of fish as their name implies. As one of few predators of porcupine and lynx, fishers set themselves apart from other semi-aquatic mammals. Although they don't regularly hunt aquatic species like their cousins do, they are capable swimmers and tend to stay near water in forests.

Semi-aquatic mammals may seem rare due to their behavior, but if you spend time on the water and learn to understand their habits and signs, you might be lucky enough to see some of these interesting animals. Most of these species need healthy ecosystems with clean water and plenty of prey to thrive, so taking care of them also protects our own needs for a healthy waterway. 🌿

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/volunteer/).

Please send an email to volunteer@GreatSwamp.org if you would like to volunteer.

Protecting our Waters from Hitchhikers!

By Sandra LaVigne, Director of Water Quality Programs

We hear lots of talk about invasive species these days – spotted lantern fly, Japanese Barberry, mile-a-minute vine. As a water quality specialist, I want to bring some of our aquatic invasives to your attention and talk a little about what we can all do to prevent them from spreading. We have many types of aquatic invasive species plants. Water chestnut (*Trapa natans*) is a floating plant that spreads quickly across shallow water bodies such as Kitchell Lake and parts of the Great Swamp National Wildlife Refuge (GSNWR). Didymo

or Rock Snot (*Didymosphenia geminata*) is a type of diatom or algae that quickly covers rock surfaces in streams and has been documented in the Delaware River at Delaware Water Gap. The New Zealand Mudsail (*Potamopyrgus antipodarum*) is a tiny gilled snail that is problematic because it can reproduce asexually very rapidly producing up to 40 million offspring within a three year period. Just like their terrestrial counterparts, these very different species all have something in common – they can be inadvertently transported by humans to new locations, invading new and previously pristine habitats. The seeds from the water chestnut plant are very pointy and can stick into the bottom of a pair of boots or waders. These seeds are viable in the water

for up to 15 years (and possibly longer) so if they catch a ride on your boots, they can start a whole new colony in the next spot you visit. Didymo has the ability to survive out of the water for hours at a time. If you are moving from one area to another, even if your boots dry out a little, it is likely that you could introduce this hitchhiker to your next spot if you aren't careful. Finally, the tiny mudsnail

can easily hide in the crevices and lugs of boots and survive out of the water for days at a time.

Even if you are just moving from one section of a

stream to a different area of the same stream you can be helping to spread these invaders faster than they would on their own. The algae are only likely to move downstream from their current location. But if you walk in one area of the stream and then move

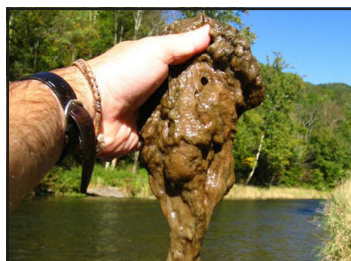
UP-stream from that location you can be bringing the didymo with you to a previously unaffected location. The mudsnails, though they reproduce in large numbers, do not, on their own, move very far from where they start. If you carry one along on your tackle to a

different area of the stream you can introduce a whole new population, and because they can reproduce asexually it only takes one to start the process.

So what can you do to help stop the



Water Chestnut - Courtesy of NYDEC



Didymo (rock snot) - Courtesy of PADEP



Mudsnail. Drawing credit: Rosa Martinez

spread? Here are some helpful tips that everyone can follow –

- Carefully clean equipment between locations, especially when switching from one river or lake to another that isn't connected. Be sure to check boot lugs and tiny cracks or crevices in tackle to ensure that no hitchhikers are overlooked while cleaning.
- For waders and tackle such as nets, you can soak them in an ammonia based, industrial strength solution (an example is Super HDQ Neutral) mixed in water at a ratio 6 oz of ammonia to a gallon of water. They should soak for at least 10 minutes and be thoroughly scrubbed with a brush while looking for any signs of algae or snails or other organic matter. Finally rinse them well with water from a safe, non-invasive bearing source of water. If you are in the field, this can be water brought from home, or if you are home between sites, you can use a hose.
- Another option is to soak your gear in water over 140F for at least 10 minutes, again while scrubbing and removing any hitchhikers or organic matter.
- You can also completely dry your equipment for a minimum of 10 DAYS. Many of the hitchhikers like snails and seeds from invasive plants can survive for a few days out of the water and still be viable. As always, before setting them to dry you should be sure to brush off any organic matter or organisms.
- One last solution that works for the snails in particular is to place equipment in the freezer overnight – a minimum of eight hours.

- Selecting equipment that is less likely to carry invasives can also help
 - Be sure NOT to use boots with felt soles on them. Though lug soles can be hard to clean, felt bottomed boots can harbor algae spores, seeds and larvae for extended periods of time and are very hard to get clean.
 - Choose nets with larger holes that can easily be examined and cleaned in the above manners.

We all love our outdoor spaces. Enjoying some time fishing in your favorite spot is a great way to connect with the water. To ensure we are all able to continue to enjoy for generations to come be sure to protect our waters from hitchhikers! 🌲

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