



The Great Swamp Watershed Association

Across the Watershed

Spring-Summer 2015

Protecting our Waters and our Land for more than 30 Years

GSWA's SWaMP Program: Scholastic Success In Hip Waders!

by Kelly Martin, Membership & Education Associate

Each spring and fall, Laura Kelm—the Great Swamp Watershed Association's (GSWA) director of water quality programs—and I venture out with intrepid high school and college students to test the water quality of streams in the Great Swamp Watershed region and further down the Passaic River. This program, known as School Water Monitoring on the Passaic or SWaMP for short, helps train the students in scientific methodology and the use of water-sampling equipment. Once they have

the hang of all the theoretical stuff, we let them loose in the real world to don hip waders, test for a variety of chemical water-quality parameters, perform visual stream assessments, and my personal favorite, search for benthic macroinvertebrate species.

Benthic macroinvertebrates are aquatic animals without backbones that you can see without the aid of a microscope. In general, they are the larval or nymphal stages of certain terrestrial insects, such as mosquitos or dragonflies, and some other fully aquatic animal species, such as leeches and crayfish.

What is so amazing about macroinvertebrates is that each individual species can

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A SWaMP student holds a large crayfish discovered along the banks of the Passaic River at Riverside County Park in Lyndhurst, NJ. What an exciting macroinvertebrate find!. March 2015. Credit: K. Martin/GSWA

From the Desk of the Executive Director



by Sally Rubin

Last spring, the Great Swamp Watershed Association (GSWA) started the *Great Swamp Passaic Municipal Alliance*. The Alliance fosters an ongoing, collaborative discussion of issues that transcend individual municipal borders. The goal is to approach shared concerns and address them in a regional and cost-effective manner by working together. It is an informal networking platform for the exchange of ideas, the sharing of concerns, and the development of solutions among people involved in municipal government.

The first meeting of the Alliance in April 2014 featured planning expert Frank Banisch. Frank's presentation focused on re-visioning surplus office parks, outdated strip malls, and auto-dependent downtowns.

Our next meeting in September 2014 was led by Matt Krauser of Integra Realty Resources who spoke about the role of the appraiser in land preservation.

Our third speaker in November 2014 was Chris Obropta, Ph.D., P.E., extension specialist in water resources with Rutgers Cooperative Extension. Chris discussed the benefits and challenges of addressing flooding and stormwater runoff through community-based projects.

Our final meeting of the year took place in December and featured Jeffrey Otteau, economist, appraiser, and president of Otteau Valuation Group. Jeff's presentation considered the slow pace of economic recovery and the sweeping economic, demographic, and social changes that have reshaped patterns of real estate demand here in New Jersey. His argument zeroed in on the structural causes behind such changes,



Jeffrey Otteau, economist, appraiser, and president of the Otteau Valuation Group, addresses members of the Great Swamp Passaic Municipal Alliance on December 7, 2015. The Geraldine R. Dodge Foundation kindly donated the conference space for this event. Credit: Susan Bloom, Correspondent, Daily Record

the challenges they create, and the effective planning solutions that will drive economic growth in the decade ahead.

Two of Jeff's major points focused on reductions in U.S. manufacturing and technology's assault on jobs. In the first decade of this century, many jobs were lost to technology, including secretarial positions, telephone operators, bookkeepers, and travel agents. This trend will continue as we develop advanced robotics, 3D printing, and more.

Jeff went on to deliver more depressing news. He quoted and explored statistics explaining why New Jersey is the worst state for retirement, has the highest property taxes in the nation, maintains the worst business climate, and has the third weakest job-recovery rate in the U.S. He also noted that our state currently has the highest rate of domestic out-migration.

A look at post-recession job recovery and trends in household income did not do anything to raise the mood in the room. Today, the overall job-recovery rate in the U.S. is at 119%, while remaining at a mere 37% in New Jersey. Over the past year, household income in the U.S. increased by 1.8%, while New Jersey's has actually declined by 7.4%.

Shifting away from the gloomy business outlook, Jeff went on to show how the state's population centers are changing. For the past 50 years there has been a steady outward migration away from cities and toward suburbs, but in a more recent reversal (one that extends beyond New Jersey) suburbs and rural counties have actually lost population to more urban areas. This housing crisis is worsening as more people opt to rent, rather than own, in urban areas,

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Across the Watershed

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Watershed Watch— Environmental Hot Spots

by Sally Rubin, GSWA Executive Director

The *environmental hot spots* described below outline some of the Great Swamp Watershed Association’s (GSWA) advocacy activities throughout the Great Swamp Watershed region over recent months. Where appropriate, we continue to closely monitor each situation.

Morris Township: Seaton Hackney Stables at Loantaka Brook Reservation

The three-year New Jersey Department of Environmental Protection (NJDEP) 319 grant for stormwater improvements at Seaton Hackney Stables concluded last summer. We recently submitted a new proposal to NJDEP for an additional 319 grant that will help us complete the next phase of this project.

An aerial view of the completed vegetated stream buffer along Loantaka Brook at Seaton Hackney Stables. Credit: Gerry Scully, Harding Township, NJ

Long Hill Township: Restore Meyersville

The application to construct a new facility for the Central NJ Volleyball Academy of Flemington at the former Archie’s site in Meyersville has been denied by the Long Hill Township Planning Board. It is unclear whether or not a new revised application will be submitted. The property has been listed for sale.

Long Hill Township: Copper Springs

Long Hill Township has proposed an ordinance modifying the zoning at Copper Springs in Meyersville to create a Recreation District. The proposed ordinance has been sent to the Township’s planning board for comment, and will be discussed at a public hearing before the Township Committee in April.



Chatham Township: Giralda Farms

In December 2014, a 136-acre tract of open space was preserved in Chatham Township at the Giralda Farms Corporate Center. Funding for the \$14.1 million purchase price was provided by the NJDEP Green Acres Program, Chatham Township, the Geraldine R. Dodge Foundation, the F.M. Kirby Foundation, Normandy Real Estate Partners, the Morris County Municipal Utilities Authority (MCMUA), Morris County Park Commission (MCPC), and the Morris County Board of Chosen Freeholders in the form of a grant from the Morris County Preservation Trust. This was the largest grant written in the Trust's history. A true public-private endeavor, preservation of this land will now provide an important wildlife corridor, an opportunity for passive recreation, and a new asset in the fight to protect the quality of water flowing into the Great Swamp National Wildlife Refuge. GSWA looks forward to assisting Chatham Township and the MCPC with the stewardship of this property.

Morris County: Pilgrim Pipeline

Pilgrim Pipeline Holdings, LLC, is proposing construction of a 178-mile pipeline from Albany, NY to Linden, NJ. The pipeline would consist of two underground pipes: one bringing Bakken Shale crude oil to Linden and one bringing refined petroleum products, including fuels, back to Albany. No official application for pipeline construction has been submitted to any state agency, but the new infrastructure is purported to cross the Passaic River at three different locations and pass through 30 towns in five New Jersey counties (Bergen, Passaic, Morris, Middlesex, and Union). New Jersey's legislature, the Morris County Board of Chosen Freeholders, and more than 30 individual towns have passed resolutions opposing the project; however, these resolutions are non-binding. The pipeline was originally intended to follow PSE&G's existing right-of-way but the utility has recently announced that this will not be permitted. Of primary concern about the underground pipeline is the potential for undetected leaks of crude oil or refined petroleum products to pollute groundwater supplies. 

GSWA Experts Available to Speak to Area Groups

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

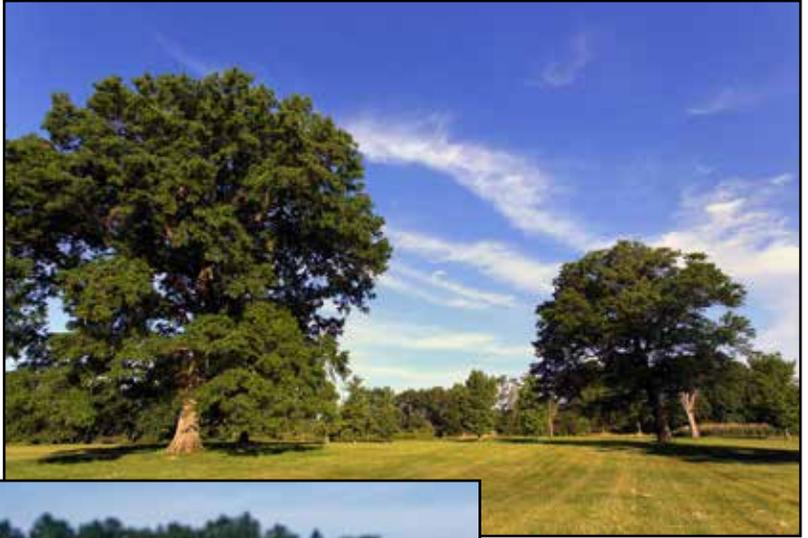
Giralda Farms: An Open Space Gem

The Great Swamp Watershed Association (GSWA) thanks the Open Space Institute (osiny.org) for initiating and coordinating the preservation of 136 acres of open space at Giralda Farms in Chatham Township, NJ.

GSWA was happy to play a part in the acquisition of this property and looks forward to assisting with its stewardship.

The photo spread that follows offer a glimpse of the natural beauty and biodiversity of this newly preserved open space. All the images were provided courtesy of the Open Space Institute and photographer Brett Cole.





Outdoor Programs

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

Swamp Explorers for Kids Sunday, April 19, 10:30 a.m.—Noon

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

Parents can hang back and let the sprouts lead the way during this kid-centric day hike at GSWA's Conservation Management Area in Harding Township.

As Earth Day 2015 approaches, our own nature-nut Kelly Martin will break out the magnifying glasses, binoculars, nets, and other cool teaching tools to help aspiring young explorers find and identify the many types of springtime wildlife found here in the Great Swamp Watershed region.

Recommended for kids four to eight years old. Children must be accompanied by at least one responsible adult.

Attendance is limited to 15 children, so advance registration is strongly recommended. Register online at GreatSwamp.org or call (973) 538-3500 x22.

Full Flower Moon Hike at Great Swamp NWR Saturday, May 2, 7:30—9 p.m.

Wildlife Observation Center at Great Swamp NWR, Long Hill Road, Harding Township, NJ

Do you know why May's full moon is called the *Full Flower Moon*? With spring in full swing and flowers bursting out all over, it's not too hard to guess!

This is an amazing time of year at New Jersey's Great Swamp National Wildlife Refuge (Great Swamp NWR). Fully awake after a long winter's nap, the wetlands along the boardwalks are positively teeming with wildlife and the new green of trees, marsh grasses, and water lilies.

It's easy to connect with the Refuge's many natural wonders during the day, but to experience them at night, with a full moon



Credit: iStockphoto.com/DonaldBowser

rising over the horizon and animal activity at its peak, is something casual visitors rarely get to see.

Fortunately, GSWA has a special-use permit that allows us to enter the Refuge at night, and we can share the privilege with you!

You, your family, and friends are invited to join naturalist Hazel England—GSWA's director of education and outreach—for a special full-moon hike at the Refuge's Wildlife Observation Center off Long Hill Road in Harding Township.

Interested adults and families with children are encouraged to attend.

Participation is FREE, but donations to GSWA are sincerely appreciated. Attendance is limited to 20 individuals, so advance registration is strongly recommended. Register online at GreatSwamp.org or call (973) 538-3500 x22.

4th Annual Great Swamp Scavenger Hunt Saturday, May 9 , 10 a.m.—4 p.m.

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

For a complete description of the Scavenger Hunt, please see page 20.

Advance registration is strongly recommended. Register online at GreatSwamp.org or call (973) 538-3500 x22.

Jockey Hollow Explorers: National & Natural History Hike Sunday, June 14, 5:30—7 p.m.

Morristown NHP, Jockey Hollow Visitor Center, approximately 600 Tempe Wick Road, Morristown, NJ

Enjoy a late-spring hike with a mix of national and natural history provided by your guides Hazel England (GSWA's director of outreach and education) and National Park Service Ranger, historian, and Revolutionary War interpreter Eric Olsen.

Listen to the banter that develops as Hazel points out wildlife, plants, and other natural wonders, while Eric responds in his guise as a Revolutionary-era soldier serving in George Washington's Continental Army.

This is an unusual and eye-opening chance to understand why George Washington thought Jockey Hollow's landscape was perfect for his 1779-80 army encampment. Don't miss it!

Interested adults and families with children are encouraged attend.

Participation is FREE, but donations to GSWA are sincerely appreciated. Space is limited, so advance registration is strongly recommended. Register online at GreatSwamp.org or call (973) 538-3500 x22.

(more programs on next page)



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Outdoor Programs *(continued from previous page)*

Summertime “Mothing” Workshop with Blaine Rothauser Friday, July 10, 8:30–10 p.m.

GSWA Office, 568 Tempe Wick Road,
Morristown, NJ

Join Blaine Rothauser, senior project manager and natural resource specialist at Fairfield-based GZA GeoEnvironmental, Inc., for a fascinating introduction to moth ecology at GSWA’s office on Tempe Wick Road.

For this hands-on, outdoor workshop, Blaine will set up a sodium vapor lamp in the parking area. After a few minutes, an astounding array of moths will appear for you to observe, identify, and photograph. What you see will surprise and amaze you!

Recommended for adults and older children, but suitable for all ages.

Attendance is limited to 15 individuals, so advance registration is strongly recommended. Register online at GreatSwamp.org or call (973) 538-3500 x22.

Note: Although the end time for this event is scheduled for 10 p.m., Blaine may

remain past this time to continue his studies. Please feel free to remain until he has finished.

Important Information About Events

Please register as requested for each program listed above (*see descriptions*). Unless otherwise noted, current GSWA members participate free of charge. Non-members are asked to make a voluntary donation of \$10/adult and \$5/child (6 to 17 years), or \$35/family (includes four or more). There is no suggested donation for children five or under.

Please dress for the weather when attending an outdoor program. Conditions may be wet, muddy, hot, or cold.

Event dates, times, and locations are subject to change. Provide your email address or phone number at registration and GSWA will make every effort to inform you about scheduling changes. Updated scheduling information will also be made available via our *Event Information Hotline* at (973) 538-3500 x22. 📞

ACROSS THE WATERSHED is also available electronically

Help reduce our print and mailing costs by signing up for electronic delivery of future issues of ***Across the Watershed***. Send an e-mail with your name and email address (so we can identify you in our member database) to sreynolds@GreatSwamp.org. By signing up for electronic delivery, you’ll also receive our monthly e-newsletters, which

provide timely information on upcoming programs and events along with news about what’s happening in and around the watershed.

Your e-mail address will only be used to share information about GSWA-related programs and events. We will not provide your e-mail address to any other person or entity without your permission.

How's the Water? GSWA Announces New Water Quality Report Card Program

by Laura Kelm, Director of Water Quality Programs

When I am out at one of the Great Swamp Watershed Association's (GSWA) stream monitoring sites, people often stop by to find out what I am doing. Once I give them some information about our water testing programs, they inevitably ask, "How is the water?"

Answering that question became much easier for me in 2013. That's when we released *State of the Streams in the Great Swamp Watershed*, a report detailing chemical and macroinvertebrate stream-monitoring data collected from 1999 to 2012 by GSWA and the former Ten Towns Committee. That document—available as a PDF at GreatSwamp.org—provided a brand-new, panoramic snapshot of a changing watershed, and also helped us understand long-term water quality trends in a more comprehensive and satisfying way.

While *State of the Streams* represented a major milestone for GSWA's decade-old stream monitoring program, our goal is to build on its success and extend what we have learned as we move forward into the future. In order to make this happen, we are implementing a new water-quality reporting tool known as the *Great Swamp Watershed Report Card*.

The *Report Card* will enhance our efforts to make our stream monitoring data and the conclusions drawn from it more

accessible, easier to understand, and more mindful of changing conditions. We will be using this new tool to grade the different parameters we monitor across all of the watershed's five streams at the same time. This concurrent approach to data collection will help us determine which streams are most impacted by road salt, where we might have problems with pH, where higher levels of *E. coli* bacteria exist, and more.

New stream evaluations will also reference legacy information on overall data patterns we have seen, and give recommendations based on those findings. Report cards issued after our initial publication will note historical trends that will help readers understand how our streams are improving or deteriorating.

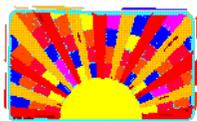
So, keep an eye out for our first-ever *Great Swamp Watershed Report Card* due out later this spring. The report will be published in digital format at GreatSwamp.org, and an announcement will be sent to all those on our e-mail list. (To join the list, visit our website and enter your email address as directed.)

Also, please join us on **May 30 between 10 and 11:30 a.m.** for a very special GSWA *Breakfast Briefing* event where I will go through our report card—featuring data collected in 2014—in greater depth. (For more event details, see *Start Your Day with GSWA* on the next page.) 

Start Your Day with GSWA

Great Swamp Watershed Association's (GSWA) **Breakfast Briefing Speaker Series** has returned for Spring 2015!

Our seasonal **Breakfast Briefings** were developed to help busy professionals stay informed about community environmental



issues without taking valuable time away from work or family life. Presentations are brief, focus on current

environmental topics, and minimize overlap with most traditional business hours. Briefings are usually, although not always, held on the second Tuesday of the month from 8 to 9:30 a.m. **VERY IMPORTANT:** There are two notable scheduling exceptions this season. Our April 9 briefing—aka *Breakfast in the Evening*—will take place on a Thursday at 7 p.m. Our May 30 briefing will take place on a Saturday at 10 a.m. Please read all descriptions carefully.

Breakfast in the Evening: Great Swamp NWR Comprehensive Conservation Plan Update

Thursday, April 9, 7–8:30 p.m.

GSWA Office, 568 Tempe Wick Road,
Morristown, NJ

Join us for a special nighttime edition of our regular *Breakfast Briefing Series* where our featured speaker will be Michael Horne, newly appointed project leader at the Great Swamp National Wildlife Refuge (Great Swamp NWR).

In the spring of 2014, the U.S. Fish & Wildlife Service announced that Great Swamp NWR's Comprehensive Conservation Plan (CCP) would be reviewed and revised before the end of that year. Members of the public—including members of the GSWA community—were invited to comment on all proposed changes prior to the release of the finalized plan in November 2014. Since ratification of the new CCP, Refuge staff have been busy finding ways to successfully implement all of the new land and water management strategies it recommends.

Mike's visit will help us understand how implementation of the new CCP will proceed, what new strengths it will bring to the Refuge, and what, if any, challenges will need to be met in order to achieve success. Highlights will include a discussion of programs aimed at improving habitat for threatened and endangered wildlife, deer management, and enhancing opportunities for public use of Refuge lands.

Seating is limited. Register online at GreatSwamp.org, or call (973) 538-3500 x22.

Lower Passaic Superfund Update Tuesday, May 12, 8–9:30 a.m.

GSWA Office, 568 Tempe Wick Road,
Morristown, NJ

David Kluesner, team leader for community affairs at U.S. Environmental Protection Agency (EPA) Region 2, returns to provide an update on plans for the remediation of hazardous pollution along the last eight miles of the Passaic River.

On April 11, 2014—about 48 hours after David’s last breakfast briefing visit—EPA Region 2 Administrator Judith Enck held a press conference announcing the Agency’s draft plan for addressing contamination along the lower Passaic. Stretching eight miles from Belleville to Newark Bay, this section of river forms part of the Diamond Alkali Superfund site centered on Newark’s Ironbound district.

This time, David will help us understand what has happened to the proposed remediation plan since August 2014 when the public comment period closed. He will let us know when we can expect a finalized plan as well as what other considerations (beyond public commentary) are factoring into its completion.

Seating is limited. Register online at GreatSwamp.org, or call (973) 538-3500 x22.

**A Report Card for the Great Swamp Watershed
Saturday, May 30, 10–11:30 a.m.**

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

Laura Kelm, director of water quality programs at GSWA, will introduce the organization’s brand new watershed report card project.

In 2013, GSWA published *State of the Streams in the Great Swamp Watershed*, a comprehensive report that assembled and analyzed chemical, visual, and biological water-quality data collected for more than a decade along the five main streams feeding the Great Swamp and the Passaic River. The final publication, which is available at GreatSwamp.org, represents a milestone in our understanding of how our watershed has changed over time.

(continued on next page)



A pontoon boat operated by Hackensack Riverkeeper cruises the lower Passaic River. Structures on the far shore of the river mark the site of the one-time Occidental Chemical Corp. chemical manufacturing plant at the heart of the Diamond Alkali Superfund.

Start Your Day *(continued from previous page)*

Based on the success of *State of the Streams*, GSWA has developed a new report card program for the Great Swamp region. This new, annual publication will combine recently collected water quality data with past data in order to provide a more comprehensive barometer of watershed health. It will also help us do a better job of keeping the public informed about emerging issues related to water pollution, land use, and water quality protection in our watershed.

Important Information About Breakfast Briefings

Please register as requested for each program listed above (*see descriptions*). Unless otherwise

noted, GSWA members participate free. Non-members are asked to make a voluntary donation of \$10/adult, \$5/child, or \$35/family (includes four or more). There is no suggested donation for children five or under. Programs are suitable for all ages, but structured for adults.

Event dates, times, and locations are subject to change. Provide your email address or phone number at registration and GSWA will make every effort to inform you about changes and cancelations. Updated scheduling information will also be made available via our *Event Information Hotline* at (973) 538-3500 x22. 🌲

GSWA Invites You to Support our “Wish List”

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

- \$25 buys a pond study kit for one classroom
- \$50 buys a stream flow kit—including rubber duckies for stream monitoring
- \$100 helps buy native shrubs for restoration of the Conservation Management Area
- \$250 sponsors community outreach and education presentations, and teacher workshops



- \$500 helps fund advocacy programs that educate citizens of all ages about the importance of preserving and protecting our limited natural resources
- \$1,000 buys deer exclosure fencing for three acres at the Conservation Management Area



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

SWaMP Program *(continued from page 1)*

tolerate different levels of water pollution. That makes them perfect examples of an immediate connection between a stream's level of biodiversity and the quality of its water.

Let's face facts! The thought of mucking about in a muddy stream catching leeches and mosquito larvae probably seems less than appealing to you. But you would be amazed at how eager students are to find and identify this kind of wildlife, especially when they realize that their work has legitimate scientific value and real-world implications. SWaMP's hands-on approach is effectively engaging students in environmental stewardship, demonstrating the fragility of our water systems, and instilling a greater appreciation for the intricacies of even the tiniest ecosystems. (Much to their own amusement, they also learn the difficult and tragic lesson that no one looks hip in hip waders!)

Each of the 11 schools participating in SWaMP claim a unique testing site. Locations range from the headwaters of the Passaic River in Mendham all the way down to the river mouth in Newark. GSWA compiles all of the students' water-quality data and uploads it into an online database. This gives them the opportunity to compare

their results to historical SWaMP data as well as the results their peers have collected at other sites.

During the fall of 2014, we went out with six schools and colleges, including Chatham High, Gill Saint Bernards, Bernards High, Passaic County Community College, Kent Place, and William Patterson University. We are always looking to expand SWaMP into more high schools and colleges, so if you think your school should become a SWaMP school please give us a call today!

For more information about SWaMP, please email me, Kelly Martin, at kmartin@GreatSwamp.org, or give me a call at (973) 538-3500 x19. 🌿



SWaMP students carefully sift through sediment-laden water in order to collect small macroinvertebrates for counting and further study. Taken along the banks of the Passaic River at Riverside County Park in Lyndhurst, NJ. March 2015. Credit: K. Martin/GSWA

Like Humans, Animals Can Be Grouped By What They Eat

by Jim Northrop, GSWA Volunteer

The diversity of plant and animal life in the Great Swamp region is enormous. Although many have tried, none of us can experience all of it in our lifetimes. In fact, a branch of science called **zoology** attempts an orderly classification of animal life, from the simplest to the most complex.

Although it is easy to see that a bear is an animal and that a pine tree is a plant, some smaller animals and plants are not obviously members of a particular kingdom. Most animals can be distinguished by their ability to move; yet there are microscopic water plants that swim as freely as animals do.

All animals large enough to be seen with the naked eye obtain energy by eating plants or other animals. Surprisingly, a few microscopic animals behave like green plants because they also capture energy from sunlight through the process of photosynthesis. They use the simple chemical compounds they produce for food.

Thus, it seems that a more consistent method is needed to distinguish animals from plants, and to separate one kind of animal from another. One useful way to do this is an analysis of food habits.

The food habits of an animal will give information concerning its physical structure and natural function, its relationship to other animals, and the type of environment in which it lives.

Sometimes a broad category of food habits will cover a wide variety of creatures.

Animal that eat only vegetable matter are called **herbivores**, or plant eaters. Herbivores eat grasses, leaves, twigs, succulent plants, and other types of vegetation. The classification encompasses such different creatures as caterpillars and cows.

Animals that eat the flesh of other animals are called **carnivores**, or meat eaters. Animals as different as lions and ladybird beetles rank in this category. When a cat pounces on a mouse, kills it, and eats it, the cat becomes a **predatory** carnivore. Animals such as the vulture and the hyena are also carnivores, although they usually prefer to feed on dead animals. They are referred to as **scavenger** carnivores. Domestic animals also become scavengers at times; think about a dog rummaging through refuse.

Creatures that eat both animal and vegetable matter, such as human beings and domestic pigs, are called **omnivores**. Certain **aquatic** omnivores, such as clams and oysters, subsist on food so small that they must strain it from the water. However, even whales—some of which can grow to 110 feet in length—filter their food from water. Mouths open, these giants swim around trapping small crustaceans, plankton, and other miniscule food items between thin plates of bone known as baleen (aka whalebone). When the time comes, they close their mouths over their baleen and swallow everything they have caught!



Like blue whales (*Balaenoptera musculus*), the humpback whale (*Megaptera novaeangliae*) is a large filter-feeding omnivore that uses the baleen in its mouth to filter small plants and animal out of sea

water. This humpback's baleen—the bristly material above the whale's tongue—is clearly visible in this amazing photo. Credit: Patrick Keogh ([Flickr.com/photos/patrick_keogh](https://www.flickr.com/photos/patrick_keogh/))

Animals that form a beneficial partnership with other kinds of animals, or a similar partnership with a living plant, are called **symbionts**. If both organisms partnered in a symbiotic arrangement benefit equally, they have a **mutualistic** relationship. If one organism benefits and the other is not harmed by the partnership, they have a **commensal** relationship. If one organism in the partnership thrives at the expense of the other, they have a **parasitic** relationship.

Many termites illustrate **mutualism**. They chew and swallow wood but cannot use nutrients from the wood fiber until it is predigested by other minute animals inhabiting their guts. In turn, these minute

animals cannot obtain the wood fibers they eat without hitching a ride inside a termite's digestive tract.

Certain small insects **parasitize** plants by producing chemicals that cause unnatural swellings on leaves or stems. These deformities, known as **galls**, provide a place for the insects to live as they feed on a plant's sap.

All animals must eat, so an examination of food habits offers one easy way to sort and categorize them. Nevertheless, animals satisfy their need to eat in a staggering number of ways. The result is a system of classification that becomes extraordinarily complex.

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Discount Well-water Testing Returns in April!

by Kelly Martin, Membership & Education Associate

In an effort to improve our understanding of groundwater quality in our region, the Great Swamp Watershed Association (GSWA) has introduced a discount-rate well water testing program for area residents.

The program began in April 2014, with 37 Harding Township well owners taking part. In exchange for a low-cost suite of tests, each participant agreed to let GSWA record their results and combine them all into a database for further analysis.

As we explored trends across our new well-water database, we learned that concentrations of lead and copper most often exceeded New Jersey standards. Rather than signaling a problem with groundwater supplies, these findings most likely indicated problems with individual household infrastructure.

Given the popularity of last April's program, we will be offering discount well testing again beginning on **April 1, 2015**. Once again, we will be partnering with Kemmerer Library Harding Township (KLHT) to facilitate the distribution and return of testing kits; however, instead of restricting participation to Harding Township residents, the program will be open to every household in the Great Swamp

region that receives water from a private well. If you are interested in participating, please read on!

The suite of well-water tests* GSWA offers examine several different water quality parameters. They include measurements of total coliform and *E. coli*, nitrates, manganese, iron, arsenic, and lead. Again, anyone with a private well is eligible to participate provided they are able to comply with the testing regimen described below.

Participants are required to pick up a home water-sampling kit from KLHT—located at 19 Blue Mill Road in New Vernon, NJ—between April 1 and April 29 during the library's regular business hours (see *HardingLibrary.org* for a complete schedule). When you receive your self-guided kit, you will be asked to leave a \$10 security deposit covering the cost of sampling supplies. Your kit **MUST** be used to sample your well water at home on the morning of **Thursday, April 30**, and all samples **MUST** be returned to KLHT between 8 a.m. and noon the same day. (Note: Some tests are time sensitive. Water samples not complying with the timetable above may not return reliable test results.)

What's in Your Water?
Find out with Great Swamp Watershed Association's
Discounted Well Water Testing Program

Here's How it Works:
visit the
Kemmerer Library
19 Blue Mill Road, Harding Township
between
April 1 and April 29
to pick up your well testing kit
Take your sample on **April 30**, bring it back the
same day, and we'll handle the rest!

Basic package begins at
\$125, additional tests
may be added for an extra
charge.

For more information please
call Kelly Martin at
(973) 538-3500 x 19 or
kmartin@greatswamp.org

www.greatswamp.org
This tool can not be used as a part of a real estate transaction.

Wanted! Photos of the Great Swamp Watershed

The Great Swamp Watershed Association (GSWA) needs your help!

Our new *Great Swamp Watershed Report Card*, due out later this spring, needs some livening up. And, your photos are just what we need!

Beautiful landscapes, native animals, or people enjoying the region's water resources are all up for consideration. If you have an image that you think captures the essence of the Great Swamp or the work of GSWA, please send them to us today!

We will give you or the original photographer credit for any photo we publish, but please remember that we may not be able to use every photo we receive. If your photo is chosen, we will ask you to sign a short release agreement. Selected photos may be modified (i.e., corrected for color, cropped, or re-sized), but their essential character will not be altered.

Please send all submissions via email to GSWA's Director of Water Quality Programs Laura Kelm at lkelm@GreatSwamp.org. If your image file is larger than 10 mb, please share it with us via your own online file sharing service, or contact Laura at (973) 538-3500 x16 to arrange for an alternative delivery method. (Sorry, only digital images will be accepted.)

Ideal photo submissions will be a **minimum** of 5"x7" at a resolution of 300 dpi (standard print resolution). Preferred file formats include JPEG/JPG, TIFF/TIF, or PDF. Photoshop files (PSD) may be accepted under certain circumstances, please call for details. (Sorry, no RAW files will be considered.) When emailing or sharing a photo, please consider compressing it into a ZIP folder before sending it along.

Have more questions about the submission or selection processes? Please call Laura as directed above. Good luck and happy snapping!

Our basic, multi-parameter testing suite will cost \$125, which is payable—less your security deposit—when you return your samples. (The same suite of tests would normally cost an individual homeowner more than \$300.) Tests for additional water-quality parameters may be purchased for an additional charge. Please call me, Kelly Martin, at (973) 538-3500 x19 for more details. 🏡

**Important: These tests cannot be used to satisfy the requirements of a real estate transaction.*

Know Someone Who Would Like to Become a Member?

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

Great Swamp Watershed Association's Fourth Annual Great Swamp Scavenger Hunt

What: 4th Annual Great Swamp Scavenger Hunt

When: Saturday, May 9, 10 a.m.–4 p.m.

Where: Check-in and picnic at Helen C. Fenske Visitor Center, Great Swamp National Wildlife Refuge, 32 Pleasant Plains Road, Harding Township, NJ

Cost: FREE, but membership gifts and donations to GSWA are sincerely appreciated.

Calling all would-be explorers, adventurers, and buccaneers! **The Great Swamp Scavenger Hunt is back for another year of outdoor fun!**

Think you know a thing or two about New Jersey's Great Swamp? Then it's time to test your powers of navigation and observation to find out.

Set Sail!

Begin the Hunt just after **10 a.m.** by checking in at the Great Swamp Watershed Association's (GSWA) *Home Base* under the pavilion at the Great Swamp National Wildlife Refuge's Helen C. Fenske Visitor Center. (The Visitor Center is located just inside the Lee's Hill Road park entrance at 32 Pleasant Plains Road in Harding Township, NJ.)

We will provide you with a route to travel, questions to answer, and a list of treasures to find throughout the region. It's your job to navigate to each treasure site, answer the questions and riddles leading to your booty, and return to *Home Base* with all your spoils.

All are encouraged to participate, especially family groups and larger teams.

Challenge the Pirate King!

Remember to hurry back to *Home Base* at 32 Pleasant Plains Road by **3 p.m.** because your day of pilfering booty has earned you a lot of chances to win some special prizes at the *Pirate King's Tricky Tray!*

Grub & Grog

After you bid on your favorite prizes, join GSWA for a free cookout under the pavilion. Don't forget to bring your barbecue enthusiasm, because the more who participate, the more fun everyone will have! We love it when our guests help out with the meal, so please feel free to bring along a covered side dish and serving utensils. (You can share your dish or keep it for yourself.) We will supply the burgers, dogs, and basic soft drinks.

The Particulars

Attendance is FREE, but please consider becoming a member of GSWA at the \$50 level when you register. Or if you prefer, please consider making a contribution in support of this event and many others like it when you register. Suggested amounts: **\$10/adult, \$5/child (6 to 17)**, no suggested donation amount for children 5 or under.



What to Bring: Weather conditions may be hot, cold, muddy, or wet, so please dress for the weather. Sturdy outdoor footwear is strongly recommended. Consider bringing some snacks along for the road, or visiting a local business if you want lunch. Water (in a reusable container) is recommended. **Picnic side dishes, serving utensils, lawn chairs, and picnic cloths are MOST welcome.** (This is a leave-no-trace event.)

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

Ability Level: The Scavenger Hunt is suitable for almost all ages and ability levels. (Strollers are not recommended at some sites.) Great distances (sometimes miles) separate treasure sites, but most are easily reached by car (or bicycle if you are so inclined). You are not required to visit all sites, and may proceed at your own pace along your own route. This is an outdoor event, so you may need to traverse boardwalks, uneven ground, pools of water, mud, etc.

Rescheduling & Cancellations: All events are subject to change or cancellation without notice; however, we will try to contact pre-registered participants via e-mail or telephone when problems arise. In the event of inclement weather, cancellation, or rescheduling, notices will be posted to our *Event Information Hotline* at (973) 538-3500 x22. Please note that GSWA's phone lines are not staffed on weekends or after 5 p.m. on weekdays.

For more details, please speak with a GSWA staff member at (973) 538-3500 or send an email message to events@GreatSwamp.org. 🌲

From the Desk *(continued from page 3)*

and as Baby Boomers begin to sell their larger homes in favor of downsizing. Younger generations either cannot afford the larger suburban homes Boomers once occupied or simply do not want them.

Household demographics in New Jersey are changing too. Birthrates are dropping and the state's population is aging. Sixty percent (60%) of households are now comprised of one or two people, and 70% of households are now childless.

As he went on to discuss New Jersey's real estate market for office space, Jeff's scenarios still showed no improvement. He spelled out how the vacancy rate for office space currently exceeds 18%, why the costs of labor and taxes are so high, and how new technology solutions are continuing to replace traditional office jobs. With corporate mergers and right-sizing on the rise, new approaches to office floor plans being adopted, and more jobs migrating to urban areas, demand for office space has fallen. The result is a chronic oversupply of office space and a significant depression of real estate values.

So, what to do? First and foremost, we need to recognize what is happening. Then we must embrace sustainable planning for the future. This will require us to understand more about the value of adaptive reuse and redevelopment in existing downtowns, and to remain open to the idea of creating denser, mixed-use developments.

Despite the occasional revelation of some hard truths similar to those Jeff presented, our Municipal Alliance meetings have prompted great enthusiasm among attendees. Former Morristown Mayor Jay

DeLaney has contended that “[e]vents like this will make our region an even better place to live and work.” Christine Marion, planning director at the Morris County Division of Planning & Preservation has affirmed that, “[a] regional forum, such as the Municipal Alliance, will allow municipalities to share ideas and will serve as a focus group to help identify and solve specific issues...”

GSWA is pleased to be able to provide this forum for municipal officials to increase their knowledge of timely subjects, and to network with each other. We look forward to organizing several more meetings throughout 2015.

The first Municipal Alliance meeting of 2015 will take place on Friday, April 24. Our featured speaker will be New Jersey State Climatologist Dr. David Robinson. In recent years, our state's climate has been the wettest and the warmest we have experienced in 120 years of observation. Dave will present some of the short and long-term dimensions of New Jersey's changing climate, and help us discuss what we can do to mitigate its effects and maximize our resiliency.

If you think your elected or appointed municipal officials or municipal staff might be interested in attending the Municipal Alliance forum, please show them this article and put them in contact with me! I can be reached through email at srubin@GreatSwamp.org, or by phone at (973) 538-3500. 🌲

Like GSWA
and join the cause on

facebook

Great Swamp Watershed Association's Second Annual Home & Garden Tour

What: 2nd Annual Home & Garden Tour Fundraiser

When: Wednesday, May 20. Check-in between 10 a.m.—Noon. All tour homes close promptly at 3 p.m.

Where: Check-in required at the Madison Public Library, 39 Keep Street, Madison, NJ. Tour homes are located across the Great Swamp Watershed region. (Driving is required).

The Great Swamp Watershed Association's (GSWA) **Home & Garden Tour Fundraiser** returns for a second year on **May 20, 2015**.

Take a day to support GSWA as you find inspiration for your spring planting and decorating, and enjoy the warmth and renewal of this vibrant and colorful season!

This year's tour will be a celebration of the charming historic homes, enchanting gardens, and elegant estates settled in the midst of the quiet and natural beauty of our beloved Great Swamp region.

Purchase your tour admission—

**In advance for the discounted rate of
\$50 per person**

Visit GreatSwamp.org to reserve online, or call (973) 538-3500 x22 to reserve by phone.

-OR-

**At the door for the full rate of
\$60 per person**

All participants must check in with GSWA at the Madison Public Library (39 Keep Street) before beginning the tour. Tour maps and admission wristbands will be distributed at the check-in table from 10 a.m.—noon. Tour homes will open at



10 a.m. and will close promptly at 3 p.m. The tour map you receive contains a suggested (rather than mandatory) route for your travels. Participants are welcome to visit as many or as few tour homes as they like, and in any order or combination they choose.

To register in advance, or for more information, please visit GreatSwamp.org or call GSWA at (973) 538-3500 x22. 🌿

Another Watershed Event!

by Stephen Howard, Director of Development

It was fitting that Bill Koch was the honoree at the Great Swamp Watershed Association's (GSWA) 2014 Gala Celebration at Morristown's Westin Governor Morris Hotel this past October. Bill richly deserved the honor, having served his entire career in the National Wildlife Refuge System and retiring after 33 years as manager and project leader at our own Great Swamp National Wildlife Refuge. Under his leadership the Refuge grew substantially, cleaned up three severely contaminated sites, won a national award from the U.S. Department of the Interior, opened the Helen C. Fenske Visitor Center, and established practices that have made the Refuge a treasured regional resource.

Gathering to honor Bill were nearly 300 friends of GSWA, who enjoyed a cocktail reception, a spectacular silent auction, a tribute to Bill from Highlands Coalition Executive Director and former GSWA Executive Director Julia Somers, and a brief preview

of a new documentary film that, when released, will tell the story of the Refuge's creation. Executive Director Sally Rubin also announced that GSWA will be placing a bench at the Refuge in Bill's honor. A brass plaque on the bench will commemorate his many years of dedicated service.

Gala 2014 also marked the organization's second year of online fundraising using a cool smartphone app. The app encouraged guests to give enthusiastically to our first-ever call for cash, and to bid with exuberance on our many donated auction items. Taken together these efforts alone yielded the organization more than \$50,000!

Overall, Gala 2014 grossed a record \$131,000, and generated a net revenue of \$95,000—all to help underwrite GSWA's many environmental programs.

Stay tuned for our next gala, coming your way in October 2015. 🌲

Bill Koch (left), GSWA's 2014 Gala Celebration honoree and former manager and project leader at Great Swamp NWR, is congratulated by U.S. Congressman Rodney Frelinghuysen (NJ-11). The Congressman served as honorary chair of the event on October 29, 2014. Credit: Warren Westura, Correspondent, Daily Record



by Rick Porter, Director of Institutional Relations

The Great Swamp Watershed Association (GSWA) is proud to announce that it is the recipient of a \$10,000 grant from The Horizon Foundation for New Jersey. We are grateful for the foundation's generous support of our public programs and activities.

The award, which was received in December 2014, will be used this spring to create The Horizon Trail, a new one-mile path through our Conservation Management Area (CMA) on Tiger Lily Lane in Harding Township. Funds will also support maintenance and expansion of the CMA's existing trails, enhancement of the picnic

area, and the installation of signage in new trail areas.

The CMA is a 53-acre natural area containing wetlands, vernal pools, stands of upland forest, and a small tributary of Great Brook called Silver Brook. With the help of generous funders like The Horizon Foundation for New Jersey and a legion of dedicated volunteers, we are able to continue our restoration work at this site; providing more free, public recreation areas that can be used for healthy-living activities such as walking, jogging, hiking, cross-country skiing and more.

Since its inception in 2004, The Horizon Foundation for New Jersey has awarded 1,097 grants totaling more than \$38 million to support New Jersey non-profit organizations like GSWA. 🌲



The Horizon Foundation for New Jersey

What They Eat *(continued from page 17)*

Before your next meal, take some time to appreciate how the human animal satisfies its hunger in comparison to most of the other animals in the Great Swamp Watershed region. Warmer months bring abundance to our wild neighbors, while falling temperatures dwindle their food supply. There is not much they can do

about that annual cycle, but human beings are very different. For the most part, winter does not bring us deprivation or starvation. Our grocery stores, restaurants, and other food establishments simply shift away from local food sources to sources in California, Mexico, or other warm and bountiful locales. 🌲

Introducing the Great Swamp Watershed Association Legacy Circle

As a cherished member of the Great Swamp Watershed Association (GSWA), you know and value the 33 years of work we have done to protect the waters and the land of the Great Swamp Watershed region. We are grateful for your commitment and generosity; we could not have achieved so much without it.

We encourage you to consider increasing the impact of your generosity by planning now for a gift in the future. We have created the **GSWA's Legacy Circle** as an easy way to do that.

Naming GSWA as a beneficiary in your estate plans is the simplest place to start. Taking this one simple step can reduce taxes on your estate while making it possible to give a gift larger than you might be able to make in your lifetime.

Here is some more information—

GSWA's Legacy Circle is an honorary circle created to recognize and thank those who make a bequest or other lifetime gift.

GSWA's Legacy Circle is an opportunity for our friends and supporters to continue ensuring the future of GSWA with a planned gift. A planned gift is more than the distribution of assets accumulated over a lifetime; it is a reflection of your long commitment to protecting the environment here in the Great Swamp Watershed region.

GSWA's Legacy Circle offers you a way to make a larger gift in the future, and not worry about whether or not your gift will affect assets you need during your lifetime.

GSWA's Legacy Circle will recognize your planned gift now, inspiring others to make the same long-term commitment to GSWA's future.

GSWA's Legacy Circle members can make a planned gift through a bequest or another financial tool, including beneficiary designation in insurance policies, retirement accounts, annuities, and bank accounts; charitable remainder or lead trusts; or securities. We strongly recommend that planned gifts be made in consultation with your accountant, lawyer, or financial planning advisor.

GSWA's Legacy Circle is for anyone who supports the important work of GSWA. We deeply appreciate a gift of any size; we value everyone's support!

If you would like information about becoming a member of **GSWA's Legacy Circle**, please call Executive Director Sally Rubin at (973) 538-3500.



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

GSWA Announces Changes to its Board of Trustees, Advisory Council, and Staff

Board of Trustees

The Great Swamp Watershed Association (GSWA) offers thanks to **Jack Schrier** (Mendham) for his recent term of service as a member of our Board of Trustees. Jack completed his term on December 31, 2014.

We are pleased to announce that the Board of Trustees confirmed the addition of three new trustees during their first meeting of 2015. These new appointments bring the complement of our board up to 14 members.

Harding Township resident **Wade Kirby** serves as senior facilitator for The Alternative Board of North Central New Jersey (*tabnj.com*), a chapter of a larger international peer-board and advisory organization dedicated to helping business owners collaborate with one another to solve business problems. Millington resident **Alan Pfeil**, spouse of Kathy Pfeil (below), currently serves as the chairman of Long Hill Township's Planning Board. Millington resident **Kathy Pfeil**, spouse of Alan Pfeil (above), currently serves as president of the Long Hill Township Historical Society. Affiliated with the organization since 1993, the Pfeils have redoubled their commitment to GSWA first by opening their magnificent historical home in Millington for our first-ever home and garden tour fundraiser in May 2014, and now by joining our board. We look forward with great enthusiasm to working closely with all three of our new trustees!



In February 2015, Maplewood resident Rick Porter joined the staff of the Great Swamp Watershed Association as the organization's new director of institutional relations.

Staff

In November 2014, after two years of service, we said goodbye to **Carlos Pomares**, GSWA's first-ever director of institutional relations. We cannot thank Carlos enough for the herculean effort he began to streamline and improve our grant-writing procedures.

We are pleased to announce that the vacancy left by Carlos's departure has been filled! Maplewood resident **Rick Porter** was selected to become our new director of institutional relations in February 2015. Rick joins our team following a successful career as a relationship development manager for several major international banking institutions. In 2000, he turned his energies and talents to the non-profit sector where he has found new success as a highly effective grants manager and event planner.

As a lover of the outdoors and a native of the Canadian Rocky Mountains, Rick is excited to dedicate his experience and enthusiastic interest to the GSWA.

~~~~~  
If you have an interest in environmental stewardship, education, or advocacy, and want to provide your support and services as a member of GSWA's Board of Trustees or Advisory Council, please contact Executive Director Sally Rubin at (973) 538-3500 or send an email message to [srubin@GreatSwamp.org](mailto:srubin@GreatSwamp.org). 



**Great Swamp Watershed Association**

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