



# Musconetcong River News

Winter 2018

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Asbury, New Jersey

## Wild & Scenic Act Celebrates Golden Anniversary

*By: Paul Kenney, River Manager, National Park Service*

The National Park Service is celebrating the 50th anniversary of the National Wild and Scenic Rivers Act this year. The law, enacted in 1968, protects just one-tenth of one percent of the Nation's river miles, and is seen as a counterbalance to damming rivers or placing flow-impeding infrastructure in them. The Musconetcong River was added to the list of National Wild and Scenic Rivers in December of 2006. The Musconetcong legislation recognizes that the river is to be managed in partnership with local governments. This partnership approach is also reinforced by a River Management Plan that recognizes and respects local river management for a national purpose.

The MWA is the National Park Service's primary partner on the Musconetcong River. The partnership has contributed to river restoration projects, the introduction of education programs, water quality testing, research, and a host of environmental and cultural protection actions that help maintain the Musconetcong's river values.

The Musconetcong River is designated because of its "outstandingly remarkable" river values. The Musky's outstandingly remarkable values include scenery and water quality. Historic Districts like Imlaydale, Finesville, Asbury, the Morris Canal, and the Plenge site, a paleo-Indian settlement area in Warren County, are also considered outstandingly remarkable. A number of individual historic structures, including the Musconetcong River Resource Center and Asbury Mill, along the river are identified in the River Management Plan for protection as well.

In terms of river recreation, the Musconetcong River is the most heavily stocked trout stream in New Jersey. Apart from the tens of thousands of annually stocked trout, native species of Brook Trout can be found in the river's tributaries. The brook trout likely use the river's mainstem to get to and from the tributaries. With the recent removal of five dams in the Musconetcong, shad and other fish have been found in parts of the river where they haven't been seen in centuries.

The National Park Service is excited about continuing our partnership with the MWA, and it looks forward to writing a new agreement in 2018 to continue the great work MWA is doing. 🌱



*Musconetcong River from Finesville Bridge after the dam was removed, provided by Bruce Livingston*

### MWA VOLUNTEERS WANTED!

Come join MWA and see first-hand all of the great projects, activities and events we have going on. We are seeking volunteers for everything from help with native plantings to joining the MWA Board of Trustees.

Volunteers work as a team with MWA Board and Staff. Areas of interest include:

- Joining the MWA Board of Trustees (HR and Law experience especially welcome)
- Asbury Mill restoration team (No construction work! Looking for help behind the scenes)
- Volunteer Coordinator for outdoor projects like tree plantings and events
- Graphic Design help (Helpful if you have your own laptop and software)

Volunteers are needed for day and nighttime hours and/or weekends. If you're not sure where you would fit best, please contact our office and let us know your interests and availability.

Call (908) 537-7060 or email [info@musconetcong.org](mailto:info@musconetcong.org) if you are interested. 🌱

# Making the Musky Greener!

*By: Kyle Richter, Watershed Programs Coordinator*

If you have visited the Asbury Mill recently, you may have noticed a few changes. In late fall/early winter, MWA and partner North Jersey Resource Conservation and Development Council (NJ RC&D) completed installation of green infrastructure at the mill to help manage stormwater runoff.

Green infrastructure are structures that are designed to capture, filter, absorb and/or reuse stormwater to help restore the natural water cycle. In the case of the Asbury Mill, three different types of green infrastructure were installed.

Two rain gardens were installed - one to capture stormwater runoff from Old

Main Street in Asbury and one to capture runoff at the other end of the parking lot near the stairs leading down to the river. Two forms of pervious pavers were also installed as a sidewalk around the building and in the parking lot. In total, 3,369 square feet of green infrastructure was installed to capture and infiltration of approximately 100,000 gallons of water per year!



*Turf Stone Pavers in the Parking Lot of the Asbury Mill*

The rain garden will serve as an educational tool for the school with students taking ownership for the care of the rain garden!

MWA and NJ RC&D would like to give a special thanks to the NJDEP Bureau of Environmental Analysis, Restoration and Standards 319(h) grant program for providing funding for green infrastructure projects and New Jersey Audubon for providing plants for the Asbury Mill rain garden. ♻️

The Mill was not the only green infrastructure project to be installed in the Musconetcong River Watershed this fall. MWA and NJ RC&D were able to work with Ethel Hoppock Middle School in Bethlehem Township to install a 980 square foot rain garden to capture approximately 7,000 square feet of stormwater runoff. Construction of the rain garden is complete, and planting will begin in early spring with volunteer support of the 7th grade science class.



*Rain Garden at Hoppock Middle School, under construction*

## MUSCONETCONG WATERSHED ASSOCIATION

PO Box 113, 10 Maple Ave.  
Asbury, NJ 08802  
**908-537-7060**

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

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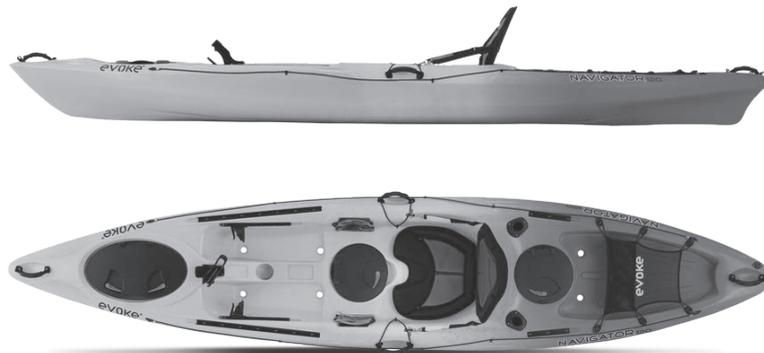
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## MWA Kayak Raffle is Back!

Purchase your ticket to win a Navigator 120 Evoke kayak – perfect for avid fisherman, but also good for local paddlers. This kayak offers easy maneuverability and high stability on flatwater and slow-moving rivers. This prize package also includes a life vest and Carlisle paddle. The total package value is approximately \$899. Purchase your \$10 ticket online at [www.musconetcong.org](http://www.musconetcong.org) under “Events,” in person at the River Resource Center (10 Maple Ave., Asbury, NJ), or at Paddlers Cove (384 E. Washington Ave., Washington, NJ). Call MWA at (908) 537-7060 with questions. The winning ticket will be pulled at our Run for the River on May 6, 2018. You do not need to be present to win. Good luck! ♻️



# MWA Celebrates 25<sup>th</sup> Anniversary

MWA recently celebrated our 25th Anniversary! While commemorating this milestone, we also chose to honor some longtime Friends of the River. First was Richard Cotton, enviropreneur and longtime board member; then Geoff Goll, President of longtime engineering partner

Princeton Hydro; and finally, Paul Kenney, National Park Service River Manager for the Musky. Awards were presented at a celebration dinner hosted by MWA at Hawk Pointe Golf Club on Thurs., Dec. 7, 2017. 🎉

## Camp Musky Registration is Back!

Email [kyle@musconetcong.org](mailto:kyle@musconetcong.org) for more information or to register!

**JULY 9 – 13: EXPLORERS | AGES 5-6 | HALF DAY: 9AM – 1PM**

Campers will explore nature through storytelling, cooperative play, and creative art and crafting projects designed to deepen their connection with nature. Each morning, we will depart on an exciting journey exploring the river and its surroundings while collecting and recording treasures found along the way. We will use their collections along with other artistic mediums, paints, beads and clay to create and express the different aspects of life on the River. While encountering all of the things that can be seen, and even some things that can't, campers will develop a nature journal and discover ways of creating a record of what their senses experience.

**JULY 16 – 20: STREAM TEAM | AGES 7 – 9 | HALF DAY: 9AM – 1PM**

Stream Team will explore the connections between the Earth's eco-systems, and the microcosms within those ecosystems. They will be exposed to practices of sustainability and environmental ethics as well as practices in classification of insects, birds, flowers and trees. Explorations of the river and our path to developing a deep, lasting connection with our bio-region will be documented in a nature journal.

**JULY 23 – 27: TRAILBLAZERS | AGES 7 – 9 | FULL DAY: 9AM – 4PM**

Campers will explore the connection between humans and nature. Understanding the plants and animals in our local ecosystem and safe ways to interact with them will create opportunities for children to explore nature in a creative and uninhibited way. They will develop an appreciation for the basic components necessary for sustainability including use of water, shelter and food. Learning how each habitat explored provides these necessities for the creatures it supports.

**JULY 30 – AUG 3: RIVER RANGERS | AGES 10 – 12+ | FULL DAY: 9AM – 4PM**

Our older campers will learn that for humans to live sustainably we need to use the Earth's resources at a rate at which they can be replenished. River Rangers will develop an appreciation for basic components necessary for sustainability including use of water, shelter and food. Rangers will learn how each habitat explored provides these necessities for the creatures it supports. Each day, there will be an exploration of the Musconetcong River and an in-depth investigation of stream and field life in the Musconetcong Watershed.

**AUGUST 6 – 10: STEM CAMP | AGES 8 – 12 | FULL DAY 9AM – 4PM**

Science, Technology, Engineering, and yes, even some Math! STEM Camp will use hands-on learning to foster creativity, problem-solving, life skills, resourcefulness, patience and curiosity. Using core STEM principles, we will work together to solve real world problems, including building sensors to help us monitor the mighty Musky's health. We will, of course, make time to explore the river and play some games! 🎉



*Geoff Goll with Beth Styler Barry*



*Richard Cotton with Cinnie MacGonagle*



*Paul Kenney with Alan Hunt*

# Science Gives Clues for Restoration

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*By: Nancy Lawler, Water Quality Programs Coordinator*

The Musconetcong River is one of the cleanest rivers in New Jersey, and yet, still faces contamination issues. One of the most serious problems on the Musconetcong is high fecal bacteria levels. While fecal bacteria in river water causes earaches in boaters who get wet, drinking that water can make you extremely sick. The lower part of the Musconetcong has limestone geology and is as full of holes as Swiss cheese. These holes allow river water to mix with ground water, allowing bacteria to get into wells. Since bacteria in the river is a public health problem, the state funded our partner North Jersey Resource Conservation and Development Council (NJ RC&D) to start to work with landowners and municipalities to identify the sources and solutions.

How do you find out where the bacteria is coming from? We target places where a high volume of feces might be getting into the river. When we look around our watershed, we see farms raising livestock and many older homes—and we can guess that the bacteria comes from manure or leaking septic systems. But to stop the influx of bacteria, home and landowners have to go through a series of steps: track the source down, determine what methods might reduce or eliminate it, and assess to what degree the problem was solved.

In our watershed, initial detective work was done by Rutgers Cooperative extension in 2007. They determined that the bacterial levels were highest downstream of Hampton Borough and in tributaries where livestock was being raised on farms. Over the next several years, NJ RC&D worked with farmers in the area to apply various methods recommended to prevent or slow down manure and other contaminants from getting into the streams: livestock fences, armored stream crossings, riparian buffers and cover crops are all known to be best management practices for reducing contaminants. MWA worked with municipalities and provided residents with educational workshops to encourage better septic maintenance.

Were the bacterial levels reduced? And which sources were reduced? The answers would help us know which methods were more cost effective and guide us in future work. A grant from the William Penn Foundation in 2014 allowed us to partner with Montclair State University to analyze water samples using a method called qPCR. This method compares DNA markers in the bacteria sample to a sample from a DNA “library” from a specific source species. Our team collected samples from various sites and had them analyzed for the bacteria count and also for DNA markers from people, horses, cows, Canada geese and deer. The bacteria counts showed us that bacterial contamination in the tributaries had been reduced by over 90%. The percentage of markers from humans was pretty consistent across all sites, but contribution from livestock was now low. Our team was most surprised to find out that contributions from wildlife were typically 70% of almost every sample—and we knew that we would need other experts to identify a new approach.

MWA and Montclair State recently received a two year joint grant from the Delaware Watershed Research Fund to do some additional work. Dr. Alan Hunt and Nancy Lawler of MWA, and Montclair State University faculty members, Drs. Meiyin Wu, Lee Lee and Jessica Miller are teaming up to investigate changes in water quality that have occurred after ten years of restoration efforts by NJ RC&D, NJ Audubon, Trout Unlimited and NRCS. We will be testing water samples and analyzing the DNA markers to identify the percentage of bacteria that comes from livestock, wildlife and people. We will also be gathering the history of changes in practices at each site so we can understand how management efforts may have reduced fecal contamination. And lastly, we will be sharing the data with our partners, managers from government agencies and municipal stakeholders with various expertise in a series of workshops and meetings.

We are hoping that this new study will help us better understand how bacterial levels have changed in the Lower Musconetcong in the last ten years and the current origins of fecal contamination, and bring together people to make a difference. If you are interested in helping with this work, please email Nancy Lawler at [nancy@musconetcong.org](mailto:nancy@musconetcong.org). 



*Canadian Geese outside the MWA River Resource Center  
Asbury, NJ*

# SAVE THESE DATES!

**Saturday, March 24:** Hike at Allamuchy State Park, from 10:00 am – 2:00 pm. Join us on the “Pebble Loop” trail, a 3.3 mile trail, and a slight detour onto the Highlands Trail for a fantastic view of the Musconetcong River and the surrounding area! The Pebble Loop begins with a sustained strenuous, rocky climb. The beginner hiker may find this trail a bit challenging due to the rocky nature and moderately steep climbs. At approximately 1.3 miles, the summit of the Pebble Loop, an impressive glacial erratic, can be found. A glacial erratic is a rock that was moved by glacial activity. This geologic point of interest is called the “Pebble” by locals. After the “Pebble,” the trail begins a moderate descent which eventually becomes rolling. Please remember to bring water and a light snack! We will meet at the Waterloo Road parking area (Waterloo Road and Continental Drive North, Stanhope 07857), look for signs for the Sussex Branch Trail Parking. MWA members are free, non-members are asked to donate \$3.

**Thursday, April 5:** Annual Members Meeting at Hawk Pointe Golf Club, from 6:30 – 9:00 pm. Please join us as we celebrate 2017 accomplishments and reveal plans for 2018. There will be light refreshments and a cash bar. The meeting will begin at 7:00 pm, but doors will open at 6:30. This event is free to attend, but please call (908) 537-7060 to RSVP or email [karen@musconetcong.org](mailto:karen@musconetcong.org).

**Saturday, April 14:** 26th Annual River Clean-up, from 9:00 am – 12:00 pm. Time for spring cleaning! From Lake Hopatcong to the Delaware River, email [ambassador@musconetcong.org](mailto:ambassador@musconetcong.org) to pick your location and clean up our watershed. We will provide trash bags, work gloves, water, snacks and a commemorative t-shirt (while supplies last). Afterward, join us at the River Resource Center (10 Maple Avenue, Asbury, NJ) for a free BBQ!

**Saturday, April 28:** 7th Annual Native Plant Sale, from 9:00 am – 2:00 pm. Visit our River Resource Center (10 Maple Avenue, Asbury, NJ) this spring and discover a variety of native plants available for your home landscaping projects. Master Gardeners and representatives from Wild Ridge Plants will be on hand to help you choose the best plants for your home. Learn more about native plants by visiting [www.musconetcong.org](http://www.musconetcong.org).

**Sunday, May 6:** 18th Annual Run for the River. Registration at 8:30 am behind Asbury Fire Co. Walk or Run a 4-mile loop in the scenic Musconetcong Valley. Awards are given to top runners followed by a FREE raffle for all participants. Please visit [www.musconetcong.org](http://www.musconetcong.org) for more information or to register.

**Sunday, May 13:** Mother’s Day Paddle, meet at 10:00 am – 3:00 pm. Hampton to Bloomsbury. Join us for a lovely Mother’s Day paddle on the Musky, and an opportunity to spend an exciting day on the river with, naturalist and river guide John Brunner. You do not need to be a Mother to participate, but if you are, we will pay special attention to you! We’ll run the Hampton to Bloomsbury section of the Musky with a stop for lunch at the River Resource Center. Pre-registration is required for each paddling trip, and more details and exact meeting location will be given after registration. Participants will need to supply their own boat, wear a life jacket, dress appropriately for conditions, come prepared with drinking water, a waterproofed lunch or snack, and sign a liability release. All MWA paddling trips are subject to change due to current weather and river conditions. MWA members are asked to donate \$10, non-members \$15. 🎧

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Association



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@MuskyWatershed



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Meetup  
Musconetcong  
River Area  
Outdoor Activities

For more information or to register for any of these events, please email [karen@musconetcong.org](mailto:karen@musconetcong.org) or call (908) 537-7060, unless otherwise noted. MWA River Resource Center (RRC) is located at 10 Maple Avenue, Asbury, NJ.

## The Musconetcong Watershed Association

The Musconetcong River Valley is rich in scenery, history, natural resources, and recreational opportunities. The river rises up in Lake Hopatcong - New Jersey's largest spring-fed lake - and is shadowed by 1,000-foot Highland ridges and slices through a deep, limestone river valley, flowing swiftly to the Delaware River. Along the way the "Musky" passes by state and county parks, bustling towns, vital industries, historic villages, and some of the most productive farmland in the state.

The Musconetcong Watershed Association (MWA) is a non-profit organization formed in 1992 to protect and enhance the Musconetcong River and its related resources through advocacy and environmental education programs, scientific research and river restoration projects. The MWA scope spans the 158 square-mile Musconetcong River Watershed, and includes portions of four counties, and all or portions of 26 municipalities. The Musconetcong River became part of the National Wild and Scenic River System in 2006.

MWA members are part of a network of individuals, families and organizations who care about the Musconetcong River and its watershed. They are kept informed about issues concerning the river and its related resources by receiving quarterly issues of the Musconetcong River News.



PO Box 113  
Asbury, NJ 08802

## MWA Membership Application

Please enroll me as a member of the Musconetcong Watershed Association in which I will receive membership benefits and publications. I have enclosed a check payable to MWA for the membership category listed below:

- \$20 Student                       \$100 Sustainer  
 \$30 Family                         \$250 Steward  
 \$50 Supporter                     \$500 Champion  
    \$1,000+ Life Member

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