

Summer 2021

REPORT TO THE COMMUNITY



Protect, educate & enjoy

Brodhead Watershed Association's mission continues in 2021 with multi-pronged programs to protect the environment, educate ourselves and others about clean water, and to enjoy the beauty of the watershed we call home. THANK YOU to our members and friends who help make this possible:



Alex Jackson
executive
director

TO PROTECT: The Brodhead watershed is one of the richest sources of clean and abundant fresh water in Pennsylvania. High Quality and Exceptional Value tributary creeks support vibrant macroinvertebrate populations and locally reproducing trout. Expansive forested landscape is required to keep it this way. Land development projects represent a major threat. When forests, farms and prairies are converted into warehouses, parking lots, and shopping centers, the local waterways take a big hit, as do local ecosystems.

TO EDUCATE: Brodhead Watershed Association continues to expand its arsenal of mayfly data loggers, a powerful tool that collects top-quality data. The solar powered in-stream data logger sends cellular signal data to an online database called Monitormywatershed.org. BWA has five mayfly loggers recording parameters 365 days per year. BWA's dedicated Streamwatchers continue to serve as our "eyes and ears," testing for nitrate and phosphate, chloride, and conductivity in many diverse locations throughout the watershed. BWA is also using laboratory tests to examine dissolved ion concentrations in headwaters creeks.

TO ENJOY: Our monthly events continue to highlight exceptional natural features in the watershed. Our summer and fall activities include the Delaware River Sojourn, annual Ramble, the Members & Friends Celebration, and co-sponsored events such as Creek Critters with the Sierra Club and Monroe County Conservation District's Bug Fest. Our Get Outdoors Poconos highlights Bowers Creek, Thomas Darling Preserve, and Mount Wismer this fall. Our hugely popular watershed activities map and hiking booklets continue to offer readers access to the Pocono area's best-kept secrets.

Up next, BWA will launch a new hiking booklet, featuring waterfalls, and will launch new interpretive educational kiosk projects in local public green spaces. Stay tuned for updates from our website and monthly online newsletter!

Alex

Green infrastructure efforts to make Mill Creek even more marvelous

Mountainhome, in Barrett Township, was once a thriving mill town, where Mill Creek powered a wintergreen distillery, a button and butter-box factory and a sawmill. The creek was dammed to support the new tourism industry in the early 1800s — supporting water sports, boating, a water slide and dozens of boarding houses and resorts. People came by the thousands for clean air, clean water, and excellent fishing.

The creek and its sister Rattlesnake Creek rise in game lands, run under Routes 191 and 390 through modern-day Mountainhome, and then along Spruce Cabin Road to the Brodhead. Surrounded by parking lots, buildings and roadways, and overrun with knotweed, the beautiful creek risked degradation.

Green infrastructure with help from BWA

Over the last two years, BWA has been working with businesses, Mountainhome United Methodist Church, Boy Scout Troop 89, and individual landowners to keep these headwaters clean, cold, and natural.

Monthly articles continue in local newspaper *The Village View* to keep the

community updated on green infrastructure progress and offer advice on controlling invasive plants. A knotweed demonstration program showed that eradication is possible. Our knotweed workshop was sold out — dozens of people attended a live, streamside demonstration of how individuals can achieve the same results.

Strauser Nature's Helpers has cut knotweed along a half mile of Mill Creek, and is contracted to return in late September to apply an herbicide to the regrowth. This cut-regrow-treat sequence was used successfully to control knotweed along Buck Hill Creek and is the treatment recommended by Penn State Cooperative Extension.

Interest now runs high among property owners to stamp out knotweed in this headwaters creek of the Brodhead.

Mill Creek, through Mountainhome, is classified a High Quality Coldwater Fishery by the Pennsylvania Department of Environmental Protection. However, the stream may qualify for the Exceptional Value designation based on its water quality, as measured by the aquatic macroinvertebrate and fish communities. Stay tuned!

– Carol Hillestad



An underground stormwater infiltration trench along Route 390 near Mountainhome United Methodist Church. The trench allows rainwater to filter slowly into the ground without rushing into nearby creeks.

Green infrastructure at work

Urban stormwater runoff is increasingly recognized as a source of pollution, especially to small and fragile High Quality (HQ) and Exceptional Value (EV) headwaters creeks in our watershed. Forested landscape absorbs more than 70% of stormwater – but a warehouse roof, truck stop, and a large parking lot absorbs very little. BWA recommends extensive green infrastructure for planned development projects – we must go above and beyond basic permit requirements, to safeguard the quality of our watershed creeks for all future generations.

The old practice of “gray” infrastructure – systems of pipes, gutters, tunnels – diverted stormwater away to waterbodies, carrying pollutants such as salt, grease, pesticides, fertilizers, hydrocarbons, and solvents. Green infrastructure better mimics the natural cycle of water – using, filtering and storing it where it falls. This includes constructed wetlands, green roofs, vegetated swales, infiltration trenches, rain gardens and pervious pavers. For information on what BWA recommends in green infrastructure, see brodheadwatershed.org/green-infrastructure/

– Alex Jackson



Dying hemlock



Invasive woolly adelgid

FORESTS OF OUR CHANGING WATERSHED

In our watershed forests, ash and eastern hemlock are known as “keystone species,” which provide unique forest habitat, microclimates, and food for native wildlife. If the trees are lost, cascading ecological “knock-on” effects may affect many, many others in the watershed.

The ash are mostly gone, and the International Union for Conservation of Nature red-listed green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*) and black ash (*Fraxinus nigra*) as critically endangered.

Eastern hemlock (*Tsuga Canadensis*) faces a renewed infestation by the woolly adelgid (*Adelges tsugae*), and elongate hemlock scale (*Fiorinia externa*) – a “one-two punch.”

The adelgid spreads rapidly without sustained negative-Fahrenheit temperature lows in the winter. Landowners can treat individual hemlocks and replace lost trees with native pine, such as the white pine (*Pinus strobus*). For affected ash forests, landowners can re-plant alternative fast-growing natives, like black cherry (*Prunus serotina*) and tulip poplar (*Liriodendron tulipifera*).

– Alex Jackson

STAY GOLDEN

Goldenrod, species of the genus *solidago*, is among the more ecologically valuable native plants in our watershed.

Goldenrod is often mistaken as the source of hay fever, but the infamous mugwort and ragweed are actually to blame. Goldenrod is an insect-pollinated species – the pollen is too sticky to float in the air and cause allergies.

Landowners are encouraged to avoid mowing or tilling goldenrod pastures. *Solidago* sprouts and leaves are favored by white-tail deer. The goldenrod thicket provides habitat for numerous species of birds and mammals. These fall flowers are vital nectar sources for monarch butterflies and numerous native bees, such as the *apidae*, *halictidae*, and *andrenidae*. The seeds are later consumed by native birds.

Solidago is also a medicinal genus, derived from the Latin word “solida,” meaning “whole,” and “ago” meaning “to make.” The plants have been used as folk remedies for a variety of health issues.

– Alex Jackson



Goldenrod

UV: A SAFER WAY TO CLEAN WASTEWATER

Chlorinated effluent from wastewater treatment plants (WWTP) is directly released into Brodhead Creek waterways. Chlorine kills harmful bacteria, but a major concern is reaction of the chlorine with organic



compounds. These disinfection byproducts (DBPs) are toxic and long-lasting chemicals. To avoid harm to ourselves and our creeks, BWA recommends that all WWTPs in our watershed upgrade

to ultraviolet disinfectant. In UV treatment, effluent is passed under powerful bulbs (pictured at left), damaging bacterial DNA in a physical process. UV eliminates hazardous chemical storage, operator injury risk, and keeps our creeks cleaner for all.

– Alex Jackson

BWA ACTIVITIES CALENDAR



2021 and beyond

Ramble

Aug. 29: BWA hosts its annual Ramble at Skytop, featuring a selection of five hikes and strolls. This event sold out quickly online!



Sept. 25: Bowers Creek Area, Pohoqualine Fish Association.

One of three headwaters creeks of the McMichael, the forested Bowers Creek Area protects the pristine McMichael Creek. Bowers Creek rises from a spring in state game lands, and participants will have views of the creek on this hike through upland forest. Moderate difficulty.

Sept. 29: Annual Members & Friends Celebration.

Let's celebrate again! We're planning a cocktail party outdoors at Shawnee Inn's riverside pavilion, subject to change as the COVID-19 pandemic unfolds. Stay tuned for details on this and our online auction fundraiser in September!



Oct. 16: Thomas Darling Preserve.

For some, hiking this preserve is an otherworldly experience. A rocky walk toward Two Mile Run on the Pocono Plateau leads to a boardwalk through an ancient bog. Expect fall colors, rising mists, and stillness. Mostly easy walking, with roots and rocks.



Nov. 20: Rail Gap Pocono Creek Nature Preserve. Visit the newest of our Pocono Heritage Land Trust's preserves that protect safe drinking water. Just minutes from Route 80, but a world away, with a stretch of Pocono Creek to explore. Easy walking.



Dec. 18: Mount Wismer in Barrett Township. Enjoy the late fall views from Mount Wismer, with the entire

Brodhead watershed spread out at your feet. Walk through old farmer's fields, over and through a small boulder field, and up to the edge of the escarpment. A strenuous hike rewarded with great views.

Into 2022: Some of the things we're thinking about for next year include Waterfalls in Winter, a photography program with Ray Roper, planned for January; another visit to human-aided habitat for golden-wing warblers at Sixteen Mile Run in Delaware State Forest, with warbler expert Jeff Larkin; a photographic tour of how local gardeners use native beauties in their gardens.

Watch our monthly e-newsletter for information on signing up for these events. Your ideas for programs are always welcome! Email admin@brodheadwatershed.org.



GET OUTDOORS POCONOS GIVEAWAYS!

BWA's water activities map (right), "Finding Fun in the Brodhead Watershed," has been a hit with residents and their families, visitors — and everyone who loves the "natural waterpark" that is the Brodhead watershed. You can pick up your copy at sites around the county, listed at brodheadwatershed.org/gopoconos

Our hike booklets Volumes 1 and 2 (left) flew off the shelves. Now, you can download them from our website at brodheadwatershed.org/gopoconos. Volume 3 — providing directions, descriptions, and trail maps for at least a dozen new hikes, many with waterfalls — will be available in 2022.

All of these publications are available at the new information kiosk at ForEvergreen Nature Preserve, home of BWA, Pocono Heritage Land Trust and Brodhead Creek Heritage Center. We are glad to mail publications to *members only*. Email admin@brodheadwatershed.org.



RELAX ... DON'T MOW SO MUCH



Less lawn mowing helps our natives

Tired of mowing the lawn every week? A recent study by the USDA Forest Service in the Northeast demonstrates that mowing bi-weekly (instead of once weekly) increases the diversity of native bees. Lawns mowed once every three weeks increases the diversity of flowering plants by 250%.

The recommendation is a “lazy lawnmower” approach. By doing so, the wildlife value of property can increase. When more plant species grow, root mass below the surface of the soil improves. Roots help to reduce stormwater runoff – especially from rain events in the summer. Based on the results of this study, the message is clear: Less frequent mowing is better.

BWA further encourages landowners to implement streamside and lakeside “no mow zones.” This form of green infrastructure is an alternative to traditional turf grass landscaping. These zones provide improved stormwater infiltration and evapotranspiration, add beneficial habitat and wildflowers like milkweed, goldenrod and asters.

Read the full USDA study at <https://www.nrs.fs.fed.us/pubs/55816>

– Alex Jackson

DO WE HAVE YOUR EMAIL ADDRESS?

In an effort to save resources, BWA is switching to online delivery whenever possible. If you are not sure that BWA has your current email address, please send it to admin@brodheadwatershed.org. Thank you for helping us help the environment!

THANK YOU, PARTNERS!

We are so grateful for the dedicated support of our Environmental Partners – the corporate and private donors that are premier stewards of the clean and abundant water in the Brodhead watershed, and understand its inherent value.



Michelle Riley
development
associate

The generous stewardship of these partners helps to sustain the critical water quality work of the BWA, as we work to keep water safe to begin with – a much cheaper, far more effective approach than costly clean-ups following careless development. THANK YOU for your continued support!

Michelle

Would you like more information about BWA's Environmental Partnership program? See brodheadwatershed.org/environmental-partnership/, call Michelle at 570-839-1120 or email michelle@brodheadwatershed.org.

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