

# Streamlines

Fall 2025

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## *A Garden for Birds, Bees, Butterflies*

Construction in 2024 left us with a tantalizing opportunity--space for a new garden, with abundant blooms to please the eye, while providing plenty of nectar for bees, butterflies, moths, and hummingbirds. Our very first pollinator garden!

Located to the east of the estate house, the garden nestles between two walkways, inviting close-up viewing. To the north and east, a new fence provides screening from the parking area and the perfect place for our native honeysuckle vine (*Lonicera sempervirens*), whose red flowers are quite attractive to hummingbirds. To the south the lawn extends to a border of oaks, yellowwood, redbuds, and native azaleas, completing the setting.



*Bumble Bee*

Designing a pollinator garden can take some planning to ensure a steady supply of nectar. Native shade loving columbine, Jacob's ladder, ferns, and ragwort lead the spring bloom, while in the eastern and sunnier section, Bradburn's bee balm, bluestar (*Amsonia*), penstemon 'Dark Towers' (a hybrid with our native *Penstemon digitalis*), and wild blue phlox lead off in the spring, with fragrant narcissus (for human interest) and a redbud to anchor the end of the bed.

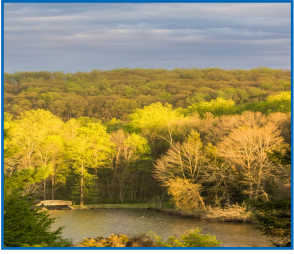
As the weather warms, native perennials begin a long season of bloom. These include anise hyssop (*Agastache foeniculum*), a mint family member with showy purple flower spikes. This has been blooming nonstop since May and is continuously covered with bees and butterflies of all types, making it **the** most popular flower in the garden. Other blue to purple blooms in the garden are aster and wild petunia (*Ruellia*). Starting in June, these contrast nicely with the yellow of black eyed Susans and coreopsis (*Coreopsis verticillata* and *C. lanceolata*), members of the sunflower (*Asteraceae*) family - a family of plants with over 32,000 known species! These, along with purple coneflowers (*Echinacea purpurea*) (really more pink than purple), benefit not only pollinators, but their seed is loved by many birds including goldfinches.

Summer would not be complete without phlox (*Phlox paniculata*), a native that has been widely cultivated. In the wild the florets are pink-purple to white, but, with human intervention, it now comes in a wider range of colors. Our garden features a white-flowered variety, resistant to powdery mildew, and a pink, along with a few deep coral color for human interest. The fragrant flowers are attractive to hummingbirds.

As August rolls around, a shorter selection of Joe Pye weed begins blooming. This will be followed by goldenrod (*Solidago rugosa* 'Fireworks'), a selection from the North Carolina Botanical Garden, and ironweed (*Vernonia lettermannii* 'Iron Butterfly'). This ironweed has a shorter stature, finer leaf texture, and is drought tolerant! Although its native range is Arkansas / Oklahoma, it is closely related to our New York Ironweed, found in moist areas. Shrubs include *Clethra alnifolia* 'Crystalina', a dwarf summersweet which is very fragrant, and *Ilex verticillata* 'Little Goblin Orange', a dwarf selection of winterberry holly with orange berries. A few annual hybrid salvias (deer resistant & floriferous), with their tubular flowers, fill in the gaps as the perennials mature, providing season long color and attracting hummingbirds on a daily basis.

We used a combination of straight species, which are more attractive to bees and butterflies, and selected varieties for human interest - after all this is a garden to be enjoyed by all.

*Victoria Fairbank*



**Green Valleys joins the Family Forest Carbon Program<sup>1</sup>**, where forest landowners are compensated for forest practices that increase carbon storage in their forests. This program incentivizes sustainable forest management, improves forest health, and mitigates climate change.

Created by the American Forest Foundation and the Nature Conservancy, this program is a good fit for the majority of our forests at Welkinweir. We had a great experience working with their staff.

### *Walk in Penn's Woods*

Sunday, October 5, 10 a.m. - 12 p.m.

Join us for this annual event to learn about the forests that enhance our well-being! Forests are always working for us, providing recreation, wildlife habitat, beauty, improved water quality, clean air, wood products, carbon storage, and more. Led by Dr. Jennifer Santoro, Villanova University, GIS and Environmental Science. Jen received her doctorate in Forest Ecology at UVM. Her always popular tree walks throughout the area provide attendees with a wealth of information about forest and the trees in those forests.

### *Upcoming Events*

**RT 100 CLEANUP**

Sunday, October 12, 7:30 a.m.

Want to improve our environment? Need service hours? Join GVWA and the Chester County Litter Lifters to clean up Rt 100 and keep trash out of the beautiful scenic waterways of French Creek and Beaver Run. All safety supplies provided. Bring water and snacks. Wear comfortable shoes and clothing. Registration required by emailing [litterliftersofwestvincent@gmail.com](mailto:litterliftersofwestvincent@gmail.com)

**OWL PROWL**

Friday, November 7th, 7 p.m. (bad weather date November 8th)

This annual event is always popular - live owls, a night hike (just past the full moon, so should be bright), and a chance to see the beavers when they are most active! Fee charged - Registration Required [https://greenvalleysassociationofsoutheasternpa.formstack.com/forms/program\\_registration](https://greenvalleysassociationofsoutheasternpa.formstack.com/forms/program_registration)

**NATURE-BASED WELLNESS WALKS**

Monthly, First Thursdays, 9 A.M. Registration required

Visit [www.peacefulpinesforesttherapy.com](http://www.peacefulpinesforesttherapy.com)

**EARLY MORNING BIRD WALK**

with Valley Forge Audubon Society

Saturday, November 8th 7:30 a.m.

**HOLIDAY OPEN HOUSE**

Friday, December 12th, 6 p.m.

Members, friends, and supporters are invited to ring in the holidays at Welkinweir! Enjoy convivial conversation, delicious catered food, drinks, and desserts!

<sup>1</sup> <https://familyforestcarbon.org/>

**GREEN VALLEYS WATERSHED ASSOCIATION MISSION IS TO PROTECT, PRESERVE, AND RESTORE THE NATURAL WATERWAYS OF NORTHERN CHESTER COUNTY. WE INSPIRE, EDUCATE, AND INVOLVE OUR COMMUNITY TO MAKE A DIFFERENCE FOR THIS GENERATION AND FOR GENERATIONS TO COME.**

**OUR HEADQUARTERS IS LOCATED IN THE FRENCH CREEK WATERSHED IN EAST NANTMEAL TOWNSHIP AT WELKINWEIR, THE FORMER HOME OF FOUNDING MEMBERS EVERETT & GRACE RODEBAUGH. IT IS FROM HERE THAT THE ORGANIZATION FULFILLS ITS PURPOSE OF WATERSHED PROTECTION, ENVIRONMENTAL EDUCATION, AND LAND STEWARDSHIP.**

**OPEN FOR VISITING MONDAY TO FRIDAY 9 A.M. TO 4:30 P.M.**

#### **BOARD OFFICERS**

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#### **STAFF**

**VICTORIA LAUBACH, EXECUTIVE DIRECTOR**

**VICTORIA@GREENVALLEYS.ORG**

**ELAINE ARMBRUST, BOOKKEEPER**

**ELAINE@GREENVALLEYS.ORG**

**MICHAEL BULLARD, SCIENCE COORDINATOR**

**MIKEB@GREENVALLEYS.ORG**

**DENISE STEK, MEMBERSHIP**

**DENISE@GREENVALLEYS.ORG**

**CONNIE NYE, CAMP MANAGER**

**CAMP@GREENVALLEYS.ORG**

**DYLAN WAGNER, WELKINWEIR GROUNDS**

**HORTICULTURE@GREENVALLEYS.ORG**

**1368 PRIZER ROAD**

**POTTSTOWN, PA 19465**

**PHONE (610) 469-4900**

**EMAIL [GVA@GREENVALLEYS.ORG](mailto:gva@greenvalleys.org)**

**WEB [WWW.GREENVALLEYS.ORG](http://WWW.GREENVALLEYS.ORG)**

**COVER IMAGE:  
ECO CAMPERS AT WELKINWEIR**

## Discovering the Biodiversity of Northern Chester County Watersheds --John Lisowski

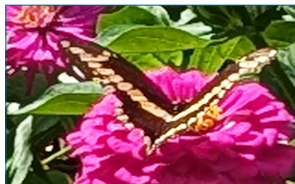
We are excited to announce the launch of a new iNaturalist Collection Project focused on the “Northern Chester County Watersheds.” This project brings together observations of plants, animals, fungi, and other organisms from across the watersheds of French, Pickering, Pigeon and Valley Creeks and Stony Run, the watersheds where Green Valleys Watershed Association works to protect, preserve, and restore the natural resources and educate the community, creating a centralized, accessible picture of the area’s biodiversity.



Wood Turtle  
(*Glyptemys insculpta*)

### Overview of iNaturalist Platform

iNaturalist is an online platform that allows anyone—from professional scientists to local nature enthusiasts—to document the living organisms they encounter. Most observers use the iNat phone app (IOS or Android) and observations can include photographs, sounds and detailed notes about the organism observed. High quality observations contribute to a global database that scientists and conservationists can use to track biodiversity, monitor environmental changes and identify areas in need of protection.



Eastern giant  
swallowtail (*Papilio  
cresphontes*) at  
Welkinweir

### About the Northern Chester County Watersheds Project

Our new Collection Project uses the newly created iNaturalist Place called “Northern Chester County Watersheds” as its geographic boundary. This project captures all iNat observations made in the streams and surrounding habitats in this part of the county, including everything from microscopic organisms in local creeks to wildflowers in riparian buffers and amphibians in our wetlands.

### iNaturalist Supports Conservation

This project provides real-time data on the biodiversity of our watersheds, which is invaluable for conservation planning. Some of the ways the project will be useful include:

- Tracking species distributions: By recording where different species occur, the project helps identify areas of high ecological value or those experiencing changes in biodiversity.
- Monitoring water quality indicators: Certain insects, algae, and amphibians serve as bioindicators, signaling the health of aquatic habitats. Observations can help detect pollution or other environmental stressors early.
- Supporting restoration efforts: Data from the project can guide decisions about where to plant native species, restore stream banks, or improve wetland habitats.
- Engaging the community: iNaturalist users act as “citizen scientists” contributing directly to conservation science, fostering a deeper connection between residents and their local natural resources.

### Getting Involved: Anyone can participate!

Simply create a free account on iNaturalist and start uploading your observations within the Northern Chester County watersheds area and your observations will be automatically included. Whether you are exploring a local creek, hiking a trail, or photographing your backyard garden, your contributions help build a living snapshot of our region’s biodiversity.

### Looking Ahead

Over time, this iNaturalist project will provide a dynamic, detailed map of life in Northern Chester County’s watersheds. The data collected will not only benefit scientists and conservation organizations but also help local communities understand and protect the natural resources that sustain us. If you need help getting started with iNaturalist, we are planning an Introduction to iNaturalist class at Welkinweir in the near future!

## Forests Are Cool

Climate scientists found unexpected temperature trends for the eastern United States. While global temperatures, including most of North America, rose during the 20th century, much of the eastern US experienced something different—a “hole in the warming”, where warming was mostly absent. From 1930 to 1990, these areas showed cooling of -0.4 to -1.4 degrees F. Chester County, located on the edge of this hole, likely saw reduced warming.

Many explanations for this cooling phenomenon have been put forward, but none confirmed until recently. The 2024 paper “A Century of Reforestation Reduced Anthropogenic Warming in the Eastern United States”<sup>1</sup> provides the first comprehensive direct evidence linking this phenomenon to widespread 20th-century reforestation. As low-productivity farmland was taken out of use and clear-cut forests were left to regrow, approximately 37 million acres were reforested across the eastern United States. **The research found that the patterns of reforestation match the patterns of cooling!** Their work included studying data from 398 weather stations across the eastern US, along with data from specialized equipment (flux towers).

Forests cool land surfaces by 1.8 -3.6 °F annually compared to nearby grasslands and croplands, with the strongest cooling effects (4-9°F) occurring during midday in the growing season. Young forests aged 20-40 years showed the strongest cooling effects.

### *How do Forests Cool?*

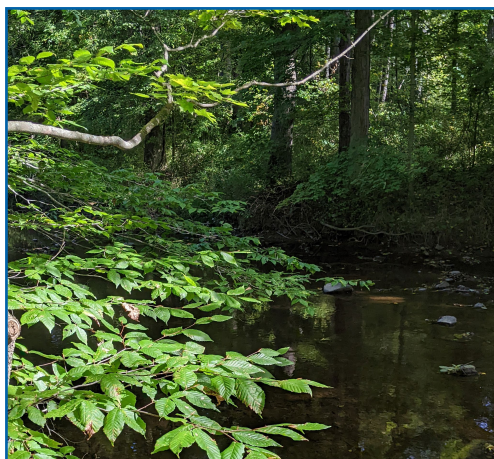
Understanding how forests create cooling is essential to developing a better picture of where and how much cooling is happening in our watersheds. The physics of forest cooling involve two separate mechanisms. In a process called evapotranspiration, individual trees bring groundwater up to the canopy where it evaporates and cools the air. This cooling process is essential for tree survival as it keeps the leaves and other parts of the tree below harmful temperatures. Cool air extends below the canopy and all the way to the ground. Trees also block most of the sunlight from reaching ground level. The combined effect produces cooler forest air, and also colder streams.

### *Impacts on Local Stream Temperatures*

During peak air temperatures in the summer, the cooling power of forests is critical to keeping the temperature below levels that are harmful to the cold water species in our cold water fisheries. Numerous studies have shown that forested streams are **5 to 10 degrees F cooler** during the hottest hours of hot weather when compared to their nearby unforested counterparts, and as our climate warms, that forest cooling will be increasingly important in maintaining cold water fisheries.

### *Variations in Reforestation Across Chester County*

Regrowth of forests in Chester County since the 1930s has occurred simultaneously with extensive increases in development. As a result, we have a diverse landscape that includes 150 foot tall poplar forests, dense urbanized areas, and everything in between. Are the larger forested areas of the county experiencing reduced or delayed warming? Are developed areas warming at a normal or even enhanced rate? The answer to these questions resides in historical temperature records and aerial photographs. Fortunately, we have good aerial photography of our forests for every decade from the 1920s to current; the process of converting these photographs to forest cover maps is already begun, and the results will bring a stronger understanding of what is creating cold water habitat, and what we can do to protect it. By studying the effects that past and present forests have had on air temperatures and stream temperatures, we will learn how to better apply future forestation where it is needed most.



*Cold Water Habitat*

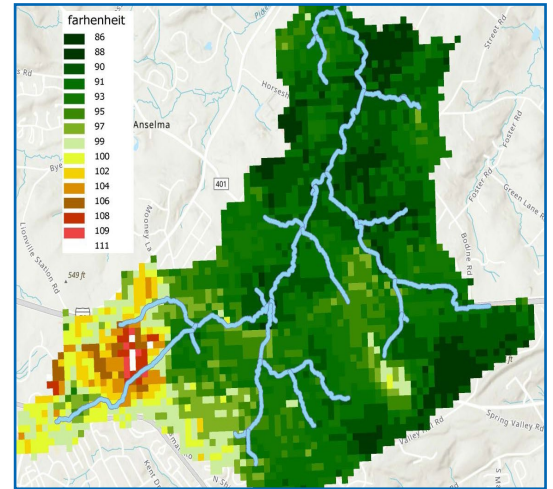
1 <https://doi.org/10.1029/2023EF003663>

## From Satellite to Stream

A high resolution stream temperature model is in the works! Information from instream instruments, co-located weather stations, Geographical Information Systems (GIS) data, and remote sensing products will be brought together within GVWA's existing watershed model. This temperature map of Pine Creek in Pickering is from June 23, 2025 at noon on a sunny hot day. It shows the dramatic difference between natural and man made surfaces, with forest cover 10 to 20 degrees cooler than built up areas.

Stream temperatures are mainly the result of how much sunlight reaches the surface each day. But there are also many local modifiers to this main effect, such as riparian buffer condition, stream flow, thermal inertia of stream channels, groundwater inputs, urban runoff, and upstream conditions. We need a better picture of where our streams are most vulnerable to land cover changes and climate warming.

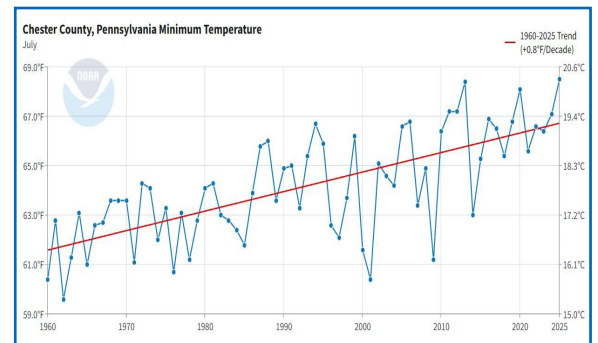
Increases in stream temperatures and stormwater flows are two known impacts from climate change. Even if we sharply reduce greenhouse gas emissions as soon as possible, there is still decades of warming “in the pipeline” due to the earth’s large thermal inertia. Future heating of our cold water fisheries would have catastrophic impacts on fish and benthic species and must be avoided. A response to these unwelcome threats is needed and we can visualize this response as three steps: map out existing conditions, develop scenarios, and implement solutions. GVWA now has the watershed models for modeling stormwater and stormwater solutions--but we do not yet have this for stream temperatures.



Pine Creek in Pickering. ECOSTRESS<sup>1</sup> High Resolution Surface Temperature Map

## Record Heat Index for July

Chester County experienced 21 days with a Heat Index of 90°F or greater this July—the most since at least 1981. Nighttime low temperatures also averaged the highest on record. Heat Indices and high temperatures are both expected to keep increasing, dramatically so by the end of this century in the absence of emission reductions. Yet, these meteorological facts miss the real story—what is happening to our lives today, especially children and their outdoor activities.



July 2025 Record Night Time Heat

As summer days become increasingly hot and humid, children will be forced to reduce activity levels and even shelter inside. When kids can't play outside safely, they lose more than just fun time. Regular outdoor play strengthens muscles and hearts while developing crucial social skills. Children learn to cooperate, solve problems, and build confidence through active play with friends. Heat that forces them indoors for days or even weeks at a time disrupts this natural development. Many families also lack adequate air conditioning, putting children at risk for heat-related illness and poor sleep.

These changes don't just affect one summer—they reshape childhood itself. Today's children are growing up during the hottest period in human history. If current emission trends continue, they will spend their entire lives in a world where extreme heat becomes normal. The window to prevent this is closing quickly. The decisions we make about carbon emissions going forward from today will determine whether tomorrow's children can enjoy summers outdoors, as we have for centuries.

<sup>1</sup> <https://ecostress.jpl.nasa.gov/>

## The Commons

2300 years ago, Aristotle wrote, “Property that is common to the greatest number of owners receives the least attention; men care most for their private possessions, and for what they own in common less...” Aristotle’s ancient observation about the vulnerability of common property to neglect and misuse applies quite well to our modern environmental problems, although it is doubtful he could imagine the sheer amount and variety of pollution resulting from the industrial revolution, and the harm that has resulted. These toxic byproducts of industry were so ubiquitous that by the 1960s severe air and water pollution affected many parts of the country. Lake Erie was dead, rivers ran in colors from industrial discharges, and air pollution blocked out the sun in many cities.



*Once critically endangered from pesticides, the Bald Eagle is now our national bird and thriving.*

In response to this unprecedented poisoning of our air and water, our society chose to protect our environmental commons through laws, regulations, incentives and environmental education. Landmark legislation such as the 1970 Clean Air Act, the 1972 Clean Water Act, and the 1974 Safe Drinking Water Act are major examples, but there are many more. Recently, the 2022 Inflation Reduction Act was passed which includes funding to reduce carbon dioxide pollution, protect our future climate, and as a co-benefit, reduce energy prices for all Americans.

Over the past 60 years, many strong laws have been passed and implemented as regulations. Americans understand the value of these laws. Public polling consistently shows broad net positive support for environmental regulations across the US, with Chester County polling significantly higher than the national average. Americans understand that protecting our Commons isn’t partisan politics—it’s essential for our health, our economy, and our moral obligation to future generations. While far from perfect, these regulations do work to keep our environment cleaner, our communities more prosperous, and save thousands of lives each year. These programs deliver exceptional returns on investment. This work is far from done, but in a stunning reversal from success to chaos, this work is being systematically and recklessly undone in 2025. Who benefits? Not the average citizen or their children, and not future generations.

The recent environmental program cancellations, suspensions and proposed cancellations taking place in Washington DC are without precedent. Environmental budget cuts totaling \$35-40 billion annually and affecting over 100 programs represent the largest deletion of federal environmental protections in U.S. history; if permanent, this constitutes a massive assault on our environmental Commons. Even more troubling, these moves are being implemented through executive action, in stark contradiction of the Constitution’s separation of powers. The Founders made certain that the Constitution grants Congress, not the president, the power to control federal spending. Federal judges have already issued restraining orders against some cancellations, and members of Congress from both parties argue these unilateral cuts violate their constitutional authority over the purse strings.

The executive branch justifies these cancellations as fiscal conservatism, but this rationale crumbles under scrutiny. The combined cost of all these environmental programs amounts to roughly 30 cents per day for each American—less than the cost of a postage stamp. Meanwhile, the economic benefits are enormous: for example, every dollar spent on Clean Air Act compliance generates between \$4 and \$40 in health and economic benefits. Environmental protection is not wasteful spending—it’s one of government’s highest-return investments.

Consider the alternative costs of inaction. Air pollution causes over 100,000 premature deaths annually in the United States, generating hundreds of billions in healthcare costs. Water contamination creates long-term cleanup expenses that dwarf prevention costs—the Superfund program exists because past generations failed to regulate industrial pollution adequately. Extreme weather events are already costing the U.S. economy over \$140 billion annually, with climate change contributing to approximately half of these damages through increased frequency and intensity of storms, droughts, floods, and heat waves.

It is tempting to be demoralized by all of this chaos and waste, but a better response is to be energized. This unprecedented assault on America’s environmental protections has brought into clear view two objectives. Restore and enhance our environmental protections, and restore the separation of powers that is at the heart of our nation’s great Constitution.

*THE HEALTH OF OUR WATERSHEDS  
HAS BEEN OUR FOCUS FOR OVER 50  
YEARS.*

*Green Valleys Watershed Association  
is located in northern Chester County,  
Pennsylvania, where our scenic watersheds  
are comprised primarily of Exceptional  
Value (EV) and High Quality (HQ)  
waters. These streams are in the top tier in  
Pennsylvania.  
They are a precious resource.*

**JOIN US!**

MEMBERSHIP includes newsletter subscription, notice of special events and programs, and reduced rate to special programs, workshops, and Summer Nature Day Camp.

Membership levels:

- Individual.....\$45
- Family.....\$60
- Naturalist.....\$100
- Environmentalist.....\$250
- Protector.....\$500
- Preservationist.....\$750
- Steward.....\$1,000

- I am a:  New Member  Renewing Member
- I am interested in including GVWA in my legacy planning.
- Please notify me of GVWA volunteer opportunities

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Address \_\_\_\_\_  
City, State, Zip \_\_\_\_\_  
I would prefer to pay with:  Check (payable to GVWA)  
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\*Phone & email needed to process credit card payments. We do not share your information with any other organizations.

Detach this form and mail with payment to:

Green Valleys Watershed Association  
1368 Prizer Road, Pottstown, PA 19465

Online membership also available at  
[www.greenvalleys.org/support](http://www.greenvalleys.org/support)

*Dues and contributions are tax-deductible. Green Valleys is a registered charitable organization. Copies of registration/financial information is available by calling 1-800-732-0999. Registration does not imply endorsement.*