

Streamlines

Spring 2021

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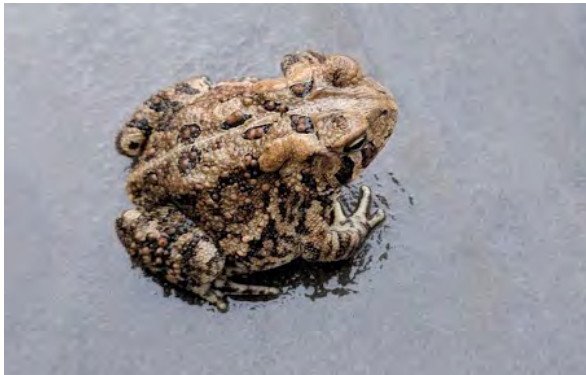
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GREEN VALLEYS
WATERSHED
ASSOCIATION

Diversity in Our Landscapes

Luna moths, while not rare, are rarely seen! Luna moth adults are nocturnal and live for only about one week. As adults, they do not feed, and live off the energy stored while caterpillars. On the cover is a recently emerged adult male Luna I photographed on a black walnut, one of their preferred host plants; others hosts are hickories, white birch, American persimmon and sweet gum. Surprisingly, they have a poor survival rate on white and red oaks – native trees that host hundreds of species of caterpillars -- demonstrating why it is wise to have a variety of native trees.



Gardening for me is so enjoyable because of the endless opportunities to observe wildlife of all kinds--birds, butterflies, and even giant silk moths! At home, I plant what is attractive to me and what is attractive to wildlife in equal measures. For example, hummingbirds are strongly attracted to salvias because it is one of their favorite flowers. If you plant salvias reliably, you will have hummingbirds reliably, year after year, including juveniles like the one pictured above. For marvelous displays, plant butterfly host plants, and you will be dazzled with flowers *and* butterflies.

Birds and terrestrial species like turtles do best in a varied and natural environment which supports the foods they seek. To some extent you can recreate this in more formal landscapes, but the majority of this habitat should be native plants in zones receiving little or no maintenance. So, along with your gardens, make room for more wild areas.



Fortunately, if you do not have naturalized areas, there are endless opportunities to create these zones by allowing some wild plants back into your landscape. Trees and shrubs that volunteer along



property lines, tree duff accumulations, even some downed trees--these are all the first step in giving nature a place. These areas will first be rapidly colonized by small flora and fauna as native species reassert themselves, and become more complex over time. Zones like these are important forage areas for many bird species, and as you have more avian visitors, you will also be enjoying more birdsong. Even your lawn can support diversity if you allow plants like clover and violets to grow freely--these “weeds” that can show up in a lawn are forage for many animals, including box turtles!

Victoria Jambash

New Themes for 2021 Summer Camp!

Wildlife and Habitat Diversity June 28-July 2 Campers will explore fields, forest and waterways to discover a diversity of wildlife and habitats. Games and projects, as well as use of tools such as binoculars, lens, and microscopes, will help children find out why diversity of species in our communities is so important.

Protecting our Natural Resources July 19-23 Campers will learn simple ways they and their families can protect natural resources as they scout out fields and forest during scavenger hunts, use recycled items to make wild creations, study the living things in a stream, and more.

Animal Features for Survival August 2 - 6 Migration, camouflage, webbed feet, and sharp teeth, are just some of the many animal adaptations campers will learn about this week. Campers will search for creatures of air, land and water, to compare their adaptations, play hide and seek and other games; and design their own wildlife models.



Welkinweir Trail Work

We are happy to report that the installation of a new trail, the first of a larger planned system, is underway. Allen Heist, past GVWA Board President and active member of the Horse-Shoe Trail Conservancy, worked with staff to apply for a Schuylkill Highlands Conservation Landscape (SHCL) mini grant and Rachel Nazaruk, one of our PA Master Naturalist trainees, applied to and received \$2,000 in project support from PECO. Thank you Allen, Rachel, SHCL and PECO! With that initial funding, we brought in a crew from the Appalachian Conservation Corp (ACC) to “break ground”. The crew of seven to eight young adults, who hail from Virginia, West Virginia, Illinois, and Oregon, are working for ACC to gain experience in the conservation field, to see other parts of the country, and to earn money for college – either for undergrad or graduate level work. It is gratifying to meet such caring young adults and know that the future of stewardship is alive and well with these young people.

Horse-Shoe trail is open dawn to dusk for through hikers and equestrians. Outside of Welkinweir posted visitor’s hours, trail users must stay on the marked trail.

Appalachian Conservation
Corp Crew at Welkinweir

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.

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ACTIAS LUNA

Forests

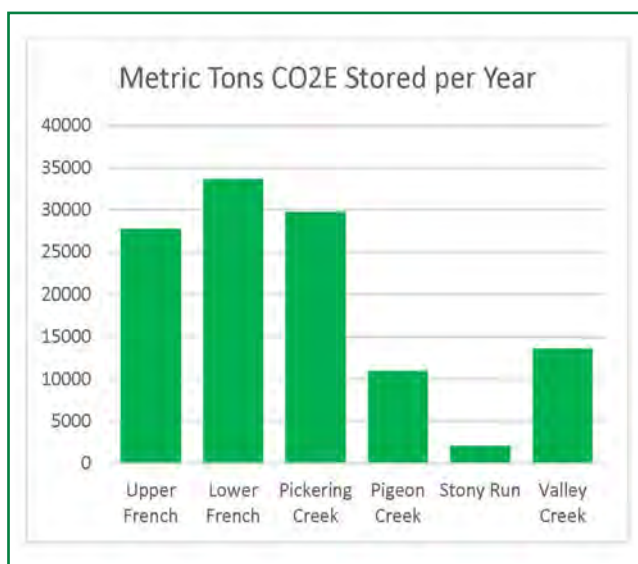
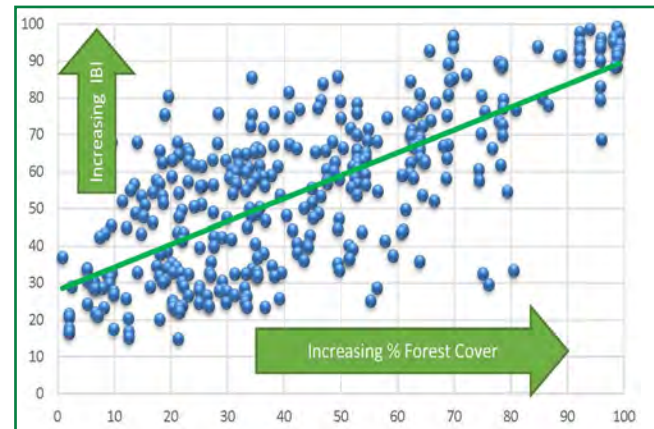
What do you think of when you think of local forests? Majestic trees? Hiking along wooded trails? Healthy streams and drinking water? Powerful tools for extracting carbon dioxide from our atmosphere? A lush green tapestry in our landscapes? Stunning fall colors? The liquid, ethereal songs of wood thrush and veery? All of these? Our quality of life in northern Chester County owes much to our forests, and they deserve protection.

Forests Make Clean Water

The prevalence of forest in a watershed is the best indicator for finding clean and healthy water

The underlying science of how forests provide cleaner, healthier water is well understood. In simplest terms, forests prevent precipitation runoff, with water instead filtering steadily down into the water table, where it supplies our streams and wells with clean cold water.

The figure to the right illustrates this by comparing a common measure of stream health to the percent of forest. On the vertical axis are macroinvertebrates data collected by the Pennsylvania DEP in the Schuylkill River watershed. On the horizontal axis is the percent in forest cover above where that data was collected. Macroinvertebrates (mainly small stream insects) are the most common data collected to measure stream health and are expressed here as Index of Biotic Integrity (IBI) scores--higher scores are healthier. In this figure, the healthiest streams are represented by the dots in the upper right corner--these are also the ones with the most forests. Each dot is a sampling event carried out by PaDEP biologists as part of their statewide monitoring work.



Forests Fight Climate Change

A powerful tool to address atmospheric CO2 levels

Trees in our watersheds are extracting a surprising amount of CO₂ from our atmosphere and storing it both above and below ground as biomass. An acre of local forest is *sequestering* (storing away) over 2 tons of CO₂ each year, and will continue to do so year after year. In addition, farm fields can store carbon in soils when managed appropriately, and meadows with deep-rooted species collect and store carbon several feet underground.

While we do have many technologies to reduce our dependence on fossil fuels, we have very limited options when it comes to removing the excess CO₂ that is in our atmosphere already from burning fossil fuels in the past. Of those options, there is just one proven, practical, and economical approach--carbon sequestration in forests and fields.

Forests Need Protection

We are still losing forests to development

What is the status of our forests locally? In recent decades, our watersheds are experiencing two contrary trends in forest cover. The first trend is increases from the conversion of fields to forest-- this trend is a continuation of a long term rebound from the very extensive agricultural land use in our watersheds a century ago. **The second trend is the loss of forests to developments as a result of explosive growth in housing and businesses.** The figure illustrates those gains and losses as percent of total land.



Our forests need woodland protective ordinances at the local level. However, there is concern in some quarters that these ordinances would prevent the harvest of forest products, but this is not the case. The point of these ordinances would be to protect forests from destruction--not modern forestry practices.

Re-Thinking Turf

There are 2 million acres of lawn in Pennsylvania, with turf estimated to be the largest crop in the watershed of the Chesapeake Bay.

Turf carries a high cost in terms of water quality, with stormwater runoff carrying clippings, nutrients, chemicals and sediments into the nearest stream. Lawns certainly have a place in our landscapes, but it is past time for alternatives to acre after acre of heavily maintained watershed-unfriendly turf. There are many steps one can take to improve water quality outcomes from existing lawns, but beyond that is a huge opportunity--converting some of that turf to meadows and forest. Every acre that transitions away from mowed lawn provides these benefits:

Improve water quality by reducing runoff, reducing pollutants, and increasing infiltration.

Improve biodiversity by increasing suitable habitat for local species.

Improve air quality by cutting air pollution emissions from lawn care equipment.

Save time and money that would otherwise go to fertilizers, pesticides, mowing, and irrigation.

Increase Carbon Storage rates in our watersheds.

Online resources for a successful land conversion project.

HOMEGROWN NATIONAL PARK
PA DEPARTMENT OF CONSERVATION & NATURAL RESOURCES
PA LANDSCAPE & NURSERY ASSOCIATION
PENN STATE EXTENSION
UNIVERSITY OF DELAWARE--POWERHOUSE PLANTS
AMERICAN FORESTS

Watershed Friendly Lawn Care

- **Cut at or above 3" with a mulching blade and only when needed**
- **Minimize fertilizer inputs and use slow release types**
- **Eliminate pesticides/herbicides. Corn gluten meal can be used to control annuals like crabgrass and will provide a nitrogen boost.**
- **Allow non-turf species to grow, their longer roots do a more effective job at infiltrating rainfall**

Plastics--An Environmental Challenge for Our Time

In today's quickly changing world, we need to adopt sound solutions in response to new challenges. Plastic pollution is a major challenge of our lifetime, and Zero Waste practices are an old solution whose time has come again.

What is plastic pollution and why is it a problem? Plastics that enters the environment *do not break down, they break up into smaller and smaller pieces, creating microplastics.* About 30 million tons of plastic enters our environment every year, with roughly a third ending up in the oceans, and all of it steadily converting into smaller and smaller particles. Many studies expect this flow of waste to triple in the next three decades. Imagine a world where microplastics swirl in the air and diffuse through our drinking water. Imagine that we eat microplastics with each meal, breath it inside our homes, that it is embedded throughout the food web, and in every stream. Imagine that the microplastics found on the ocean's surface are just 1% of the plastics in the middle and deep water and on the ocean floor. This is our world *now.* We must wonder, how did this come to be? The short answer is that this is an issue not enough people are paying attention to and that our society has developed a dependence on plastics that seems to know no limits.



Rt 100--Plastics Destined for Beaver Run

Microplastics are a particular danger to wildlife because animals feed on food with plastics in it or mistake the plastic as food. Once eaten, they can accumulate inside various organs and tissues in the body and change the animal's reproduction, development, feeding, mortality risk, immune system, and even genes.

Plastics are not just a unique threat to people and animals, it's production and disposal are fraught with many issues. Currently, plastics accounts for about 6% of petroleum and gas use with the number set to triple by 2050. The petroleum and gas must be first be mined, often with harsh environmental costs. Then it must be transported, locally through new and existing pipelines such as Sunoco's Mariner East. After use, plastic makes up about 12% of trash going to landfills--and this will only increase if no action is taken. This staggering increasing global use of plastics is ringing an alarm for scientists, the public, and policy makers.

Zero Waste (ZW) is an ancient practice we urgently need today. Countries on all continents are creating ZW programs because of the cost and risks from all the plastic waste. ZW begins with defining how the community will benefit, then counting how much waste there is, and where it is currently going. Then goals are set depending on the community's purpose and abilities, and individual responsibility is key. Communication with businesses and vendors about preferences for their products and processes is part of ZW. The critical principles are that products purchased should be designed so that all waste can be reused as a resource, that consumption is reduced, that waste is recovered without burning, and there should be no discharges to land, water, or air that threaten the environment or human health.

Guest Article by Carol Armstrong, PhD

West Vincent Litter Lifters

Litter Lifters of West Vincent Township is a relatively new group of volunteers dedicated to tackling the litter problem in Northern Chester County.

When the pandemic hit in March 2020, the Litter Lifters started getting the word out via social media. The message was clear: We can all make a positive change to our environment by simply grabbing a small trash bag and picking up litter while walking on our local roads and in our parks. We soon found that people could still organize to pick up litter despite the pandemic, by using safety precautions of masks and social distancing- plus, we would be outside getting fresh air! In May of 2020, our group became officially recognized by the West Vincent Township's Environmental Advisory Council (EAC), and by doing so, we received significant support



Trash Collected by Volunteers in the headwaters of the Birch Run

from the Police Department, Board of Supervisors, and the Township Manager. The ultimate goal - besides beautifying the area - is to encourage and mentor other townships and people, by forming Litter Task Forces and/or organizing litter clean-up events in their community.

To date, we have organized six Litter Clean-Up events and removed over 250 bags of litter, that otherwise would be an eyesore and eventually end up in our water supply. And we had fun doing it! If you want to plan a litter clean-up or volunteer with a group that already has one in the works, log onto Keep Pennsylvania Beautiful to get details on how to plan an event or find an event close to your home.

Guest Article by Beth Intoccia

Schuylkill Water Stewards Fall Classes

Our Schuylkill Water Stewards training resumes this Fall 2021, in a significantly revised format. Class dates will be posted in June at www.schuylkillwaterstewards.org and the Summer 2021 Streamlines.

**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.**

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Membership levels:

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

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