

# Streamlines

Spring 2020

## **In this issue:**

**2020 Summer Camps!**

**Reconnecting With Our Green Valleys**

**Iconic Skinner Organ Restoration**

**Under the Surface--Brook Trout**

**Mills of French and Pickering Creeks**

**Legacy Sediments**

**Program Updates**



**GREEN VALLEYS  
WATERSHED  
ASSOCIATION**

## Engaging with Nature and Giving Back

This spring people are more engaged with the natural world around us than in any time in recent memory. Normally quiet land preserves have overflowing parking as trails see record use, whole families are out strolling the roads, and birding has seen a surge in use of online resources, to point out just a few examples. Nature is and has always been a touchstone for me and I'm thrilled that so many people are taking a negative situation and finding a positive outcome.

Never has the intrinsic value of open space and healthy watersheds been more in the public eye. Our ecosystems provide a stunning range of services to all and without discrimination. But we must not take these services for granted. It is only through decades of dedicated hard work by conservation organizations, well-informed elected officials and an actively engaged public that we have these natural resources today. And there are still many threats ahead, as well as many opportunities.

Now, more than ever, is the time to get involved with conserving our local environment, this place where we spend most of our daily lives. There are so many ways that we each can have a positive impact and give back.

- Attend public meetings, become more informed on environmental issues, and vote
- Serve in local government – either an elected position or volunteer for a committee
- Volunteer for a local organization – many offer training programs for people to help, whether water quality monitoring, monitoring bird nesting boxes, pulling invasive plants, and much more
- Support healthy ecosystems at home by replacing lawn with habitat. Begin by planting a native tree – oaks, cherry, or willows are the best for supporting insects that support birds--and go from there
- Learn more about healthy ecosystems by participating in citizen science programs
- Buy local to support local farming and lessen the impacts of factory farming elsewhere
- Make your voice heard by staying current on environmental issues and calling or writing to your elected representatives
- Take time to explore our local parks and preserves, access nature directly, and reap the many benefits
- Support your local environmental nonprofit organizations – they are in the business of making conservation happen

I hope that Spring of 2020 will be remembered for the time when we have all rediscovered just how rich and precious our green valleys are, and not solely for the unprecedented disruptions of our daily lives.

*Victoria Laubach*

## 2019 Annual Appeal -- Watershed Science Education

Our 2019 Annual Appeal was a resounding success! Proceeds from our 2019 Annual Appeal will go directly to fund and implement Watershed Science educational programs for 7-12 grades.

## Historic Welkinweir

Restoration work on Welkinweir's Skinner Organ Opus 742A nears completion. The organ was built in 1928 by the Ernest M Skinner Organ Company. Residential pipe organs were highly regarded for their ability to provide orchestral music, with Skinner organs recognized as among the very best available. Skinner devoted his life to creating the most authentic counterparts to the instruments in real orchestras, as well as providing the most advanced electropneumatic devices throughout the organ.

Originally installed in New York City as Opus 742, since 1941 Opus 742A has resided at Welkinweir, the estate created in the 1930s and 1940s by Everett and Grace Rodebaugh who were also founders of Green Valleys. Acquired by the Rodebaughs during the construction of the estate house, the organ became a major feature around which the formal areas of the estate house were arranged. From its third floor chamber, the organ has graced over seventy years of social gatherings with fine music. It has aged very well, but hundreds of electropneumatic components were well past their design lifetime, and restoration was sorely needed. This began in 2014, and since then every component of this large and complex machine has been disassembled, evaluated, and rebuilt, while meticulously preserving the original finishes and assembly details. Elements of the electropneumatic controls have received new interfaces to enable modern computer control of the organ and to allow for recording and duplication of the original player rolls.

The restoration of the instrument itself is being carried out primarily with funding from The Historical Organ Trust, The Wyncote Foundation and the Fred J. Cooper Organ Restoration Fund, without which this restoration would not be possible. We are profoundly grateful for this philanthropy. This funding has brought the unique knowledge and skills of the experts needed for this restoration to an instrument uniquely suited for it. Fully restored, and with new access to a library of recorded music playable through an updated interface, Opus 742A will have been given a vibrant new life. We look forward with great anticipation to this marvelous pipe organ, once again enriching events both public and private, and enjoying the public attention it is entirely worthy of.

With completion of this work, we will be having several events in celebration of this milestone. Scheduling for these events is on hold, and we will be providing information when we can.



Sean O'Donnell

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  
CHRIS ORZECZOWSKI, PRESIDENT  
MARGE MILLER, VICE PRESIDENT  
SUE HUGHES, SECRETARY  
ROB BLUMENTHAL, TREASURER  
ALLEN HEIST, PAST PRESIDENT  
AMY AUWAERTER, ANN BURLEY, JAMES KERR, CARL LANDIS, JOHN MATTHEWS, JO-AN RECHTIN

STAFF  
VICTORIA LAUBACH, EXECUTIVE DIRECTOR  
VICTORIA@GREENVALLEYS.ORG  
ELAINE ARMBRUST, BOOKKEEPER  
ELAINE@GREENVALLEYS.ORG  
MICHAEL BULLARD, SCIENCE COORDINATOR  
MIKEB@GREENVALLEYS.ORG  
DAWN WHITE, EDUCATION COORDINATOR  
DWHITE@GREENVALLEYS.ORG

1368 PRIZER ROAD  
POTTSTOWN, PA 19465  
PHONE (610) 469-4900  
FAX (610) 469-4990  
EMAIL GVA@GREENVALLEYS.ORG  
WEB WWW.GREENVALLEYS.ORG

ON THE COVER:  
NATURAL LAND'S  
BRYN COED PRESERVE

# UNDER THE SURFACE



**Brook Trout**, *Salvelinus fontinalis*, is our only local native trout and also our state fish. Considered by many to be the most beautiful of freshwater fish species, they are quite naturally the focus of a broad range of conservation and restoration work.

Brook Trout habitat is characterized by cold, clean, well oxygenated waters found in forested watersheds. Notably, even small streams are capable of supporting wild populations. Habitat in Southeastern PA has diminished over the past 300 years primarily due to removal of forests. Once forest cover is removed, broad changes occur in watersheds. Hydrology is disrupted as more rain water runs off and less percolates into the ground where it supports cold clean baseflow in streams. Soils wash into streams and get stored in legacy sediment deposits, providing a continuous source of silt which smothers stream bottoms. Few streams locally have escaped this fate, and as a consequence reproducing populations in our area are currently identified only in Sixpenny Creek in French Creek State Park and formerly in Crabby Creek of Valley Creek.



Brook Trout in Pickering Creek catch and release photo Josh Carr

Yet, returning Brook Trout to some of its former habitat in our local streams is a dream held by many people. Streams in the Valley, French and Pickering Creeks support wild Brown Trout populations, and they also are suitable habitat for stocked Brook Trout. Much progress has been made in improving macroinvertebrate populations in many of our streams since the 1970s, and there is still large room for improvement. Recent analysis of 1937 aerial imagery has shown that there are also positive trends in forest extent in many of our streams' watersheds. GVWA is working with stream temperature models and other mapping tools to identify where suitable habitat might be present. Perhaps, in the future, this dream will come true.

# HISTORIC MILL SITES

## Mills of French and Pickering Creeks

In a recent survey carried out by Green Valleys, over 60 former mill sites were identified and mapped in the French and Pickering Creeks.

Along with much of the northeastern United States, the region has a rich history of hydropower installations dating from the early 1700s. Water wheels were the premier energy source of the 1700 and 1800s, powering a remarkable array of businesses. Mills were essential to processing grains, making paper, sawing trees into lumber, and they were the driving force behind the earliest stages of the industrial revolution.

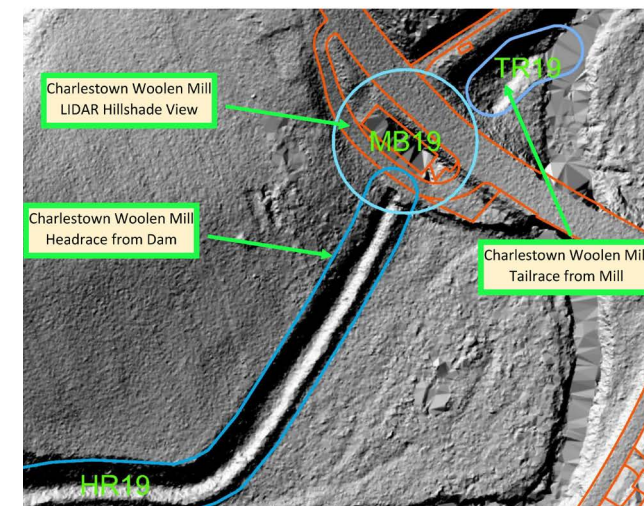
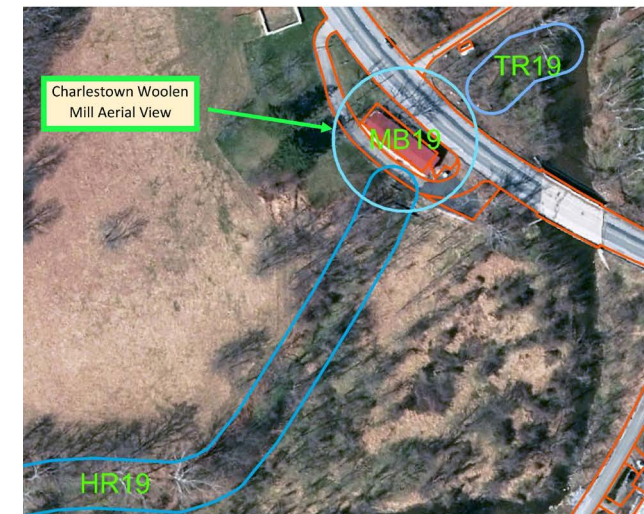


Charlestown Woolen Mill on the Pickering Creek

Elements of mill sites include dams, mill buildings, head races and tail races. Dams are built to accumulate water and raise the water level; head races convey the water to the mill building; and tail races carry water away from the mill building and back to the stream. Not all mills used dams; instead water was simply diverted into the head race and in these cases mill ponds adjacent to the mill buildings were often built to store water.

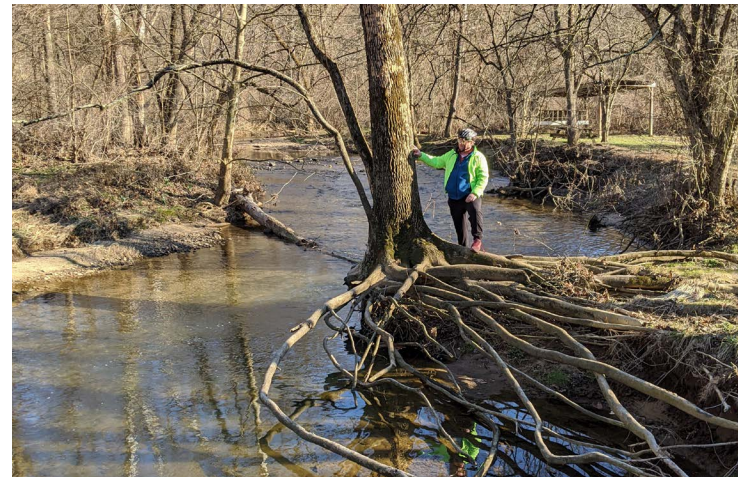
As the engines of thriving businesses, mills were engineering masterpieces for their time, designed to harness as much water energy as possible. Mill dams, head races, water wheels, and tail races were meticulously sited, built and maintained by generations of mill owners.

Locating and delineating the mill sites relied on two main data sources; historical atlases from the 1800's, and hillshade surface models derived from LIDAR. The first showed the location and approximate layout of the sites when surveyed in the 1800's; the latter allowed viewing existing dams, headraces, and more in remarkable detail. Additional information from historical aerials, current aerials, and Unmanned Aerial Vehicle (UAV) collected imagery was used as needed to identify mill site features. To view the results of this survey and learn about stream bank erosion rate measurements GVWA is working on, visit <https://arcg.is/01nHbX>



## Legacy Sediments & Stream Bank Erosion

Green Valleys began assessing the extent of Legacy Sediments (LS) behind former mills dams in the French Creek in 2012 with funding from a Schuylkill Highlands Conservation Landscape Grant. In 2014, with funding through the Growing Greener Grant Program, Green Valleys broadened the area of study to include Pickering Creek, and identified four goals: locate and delineate the former mill sites; establish baseline conditions by characterizing the extent of legacy sediment at each of the sites where mill dams were built and assess stream habitat at accessible sites; measure the rate of erosion at a subset of these sites; and identify potential restoration sites, restoration strategies, and priorities.



"Stranded" tree in the Pickering Creek  
Unstable LS has been washed away, leaving the tree and its root system in the middle of the creek

The PA DEP defines LS as: *Sediment that was eroded from upland areas after the arrival of early Pennsylvania settlers and during centuries of intensive land uses; that deposited in valley bottoms along stream corridors, burying pre-settlement streams, floodplains, wetlands, and valley bottoms; and that altered and continues to impair the hydrologic, biologic, aquatic, riparian, and water quality functions of pre-settlement and modern environments.*

In addition to the goals set out above, during the assessment it became clear that there are extensive LS not only at former mill sites but also wherever sediment-laden stormwater is slowed by low gradients or obstructions such as raised roadways abutting bridges. Stream banks at these sites are often rapidly eroding vertical faces of sediments that are very likely delivering disproportionately large loads of sediments into the creeks. We are so accustomed to seeing eroding stream banks that we tend to view this as a natural state, but radiocarbon dating of these sediments place their origins as very recent geologically speaking, within the past three centuries.

A vigorous debate has emerged about how much stream bank erosion is contributing to the overall sediments and nutrients in streams. Siltation is listed as the cause of stream impairments in reaches of both French and Pickering Creeks for Aquatic Life Use, which means the stream bottoms are clogged with sediments and are not good habitat for macroinvertebrates. Stream sediments are also recognized as major reservoirs of fecal indicator bacteria and reasonably can be expected to contribute to high bacteria counts found in some of the creeks as well.

Given the problems that sediments are causing in our streams, it is critical that we establish the sources of them. Towards this end, Green Valleys is working to measure long term stream bank erosion rates directly from a historical aerial imagery, recent aerial imagery and LIDAR-derived surface models. This process will provide bank erosion measurements spanning up to eight decades, identify erosion hotspots, and form the basis for long term strategy to mitigate sediment sources in these two creeks.

## Program Updates

### Summer Camp 2020

Green Valleys is first and foremost committed to the safety and well-being of all who visit or work at Welkinweir. As our region shifts into the "yellow phase", we are moving ahead with planning for summer nature camps for the benefit of the campers.

Planning around the ever-changing status of Covid 19 safety requirements has been challenging and it means that camp this year will look different than in years past. We feel that the most important aspect of our camp, being outdoors in the fresh air, away from the screens, and exploring all that Welkinweir has to offer – the forests,



streams, and meadows – is too critical for children and should not be unduly impacted by the pandemic. We are however taking the health and safety of our employees, campers, and visitors very seriously and have made numerous changes to the daily camp. We are adapting our specific programming, including our weekly themes and we are adjusting special events such as off-site field trips to nearby locations where campers can be dropped off and picked up by parents. We're hosting smaller groups of campers, and each group has their own designated drop-off and pick-up area as well as camp meeting space. We made the decision to cancel classes for our youngest campers, those ages 4 & 5, as they would have involved much more physical contact. We have a complete health and safety plan in place, and we are utilizing on-site independent monitoring to ensure it is followed.

### Volunteer Programs

With the closure of Pennsylvania this spring due to the pandemic we have altered our volunteer training schedules. PA Master Naturalist classes and field trips are scheduled to begin in late summer and go through the fall. Some classes may be offered online.

Our Schuylkill Water Stewards training will (hopefully) resume in spring 2021. We are looking for safe ways for our volunteers to monitor and participate in ongoing training sessions.

### Community Nature Programs

We should have more information this fall on which of our community nature programs will be running. The health and safety of our community is of utmost importance to us. We have been exploring and adapting different ways to connect with our community, so stay tuned for more information.

### Annual Celebration

The Board of Directors has decided to reschedule our annual celebration fund-raiser to Spring 2021. This is during peak bloom at Welkinweir, always a fantastic show!

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:

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City, State, Zip \_\_\_\_\_  
I would prefer to pay with:  Check (payable to GVWA)  
 Visa  MasterCard  Discover  American Express  
Credit Card # \_\_\_\_\_  
Exp \_\_\_/\_\_\_/\_\_\_ CID \_\_\_\_\_ Phone\* \_\_\_\_\_  
Email address\* \_\_\_\_\_

*\*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.*