

THE CATALYST

SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

NEXT MEETING: October 10th, 2024, at 7 pm at Jennings Environmental Education Center. New faces are always welcome! Free pizza and pop provided! September meeting was cancelled. 8/8/2024 meeting attendance: J. Belgredan, C. Denholm, M. Dunn, L. Furst, D. Johnson, S. Smith, W. Taylor, N. Lamagna, S. Van Der Wal

2024 WVTF Symposium & 15th IMWA Congress

This year's West Virginia Mine Drainage Task Force (WVTF) and International Mine Water Association (IMWA) joint conference was held in Morgantown, West Virginia on April 21st through the 26th. This well-attended, five-day event consisted of over 100 presentations on a variety of technical topics related to acid mine drainage including talks on AMD treatment technologies, geochemical & biological processes in AMD, byproduct management, research & modelling techniques, case studies, and more.

Stream Restoration Incorporated's executive director and SRWC participant, Cliff Denholm, gave a presentation titled "Datashed: an online tool for managing AMD treatment systems and restoration of impacted watersheds". Cliff's talk provided information on the free services that [Datashed.org](https://www.datashed.org) provides and explained the types of information the website has on >300 passive treatment systems in Pennsylvania.

Attendees came to this conference from across the globe, with presenters from South Africa, Germany, Indonesia, Chile, Australia, China, Japan, Peru, Sweden, Iran, and many other countries. Furthermore, presenters had differing professional backgrounds, with many in academia, consulting, and more. Therefore, the conference allowed for amazing opportunities to blend ideas and share information on AMD treatment and research from many different perspectives. Numerous students gave presentations on their research, and the winner for the best student presentation was Laura Bettoni from Sweden. Laura's talk provided interesting insight on microbial sulfate reduction in AMD and information on nutrient sources she found best promoted sulfate reduction at low temperatures.

Aside from the great learning opportunities provided through the talks, the conference allowed networking and exploration of local sites through field trips. Field trip locations included Humphrey Mine, Laurel Caverns, Longview Power Plant, and AMD active and passive treatment systems.

Check out the papers accompanying the WVTF & IMWA 2024 Conference presentations by clicking [here](#) and find PDFs of the presentations [here](#)!



Humphrey Mine, Morgantown, WV



Longview Power Plant, Morgantown, WV



Tour participants moving onto the next site in their Jeeps (Left); Cliff Denholm leading the tour of the Barkley Road passive treatment system (Right)

2024 Bantam Jeep Festival – Moraine State Park & Jennings Environmental Education Center Tour by SRWC

Stream Restoration Inc. (SRI) and the SRWC were excited to have been a part of the 2024 Bantam Jeep Festival’s Moraine State Park and Jennings Tour. The tour involved three stops: the first being at Mt. Zion Church, the second at Barkley Road AMD treatment system, and the third stop at the Foltz schoolhouse.

Cliff Denholm led the Barkley Road treatment system tour with the help of SRI environmental scientist Natalie Lamagna, and SRWC participant Steve Smith, and shared some glacial, mining and industrial history and the extensive mine reclamation efforts that had taken place at Moraine State Park. In the early 1900s, Frank Preston, co-founder of the Western Pennsylvania Conservancy, had a vision to create a park that celebrated and recreated the glacial landscape which led to the creation of Lake Arthur and Moraine State Park. As there were concerns about water quality in the lake, a major project was conducted as part of Pennsylvania’s Operation Scarlift Program that sealed 65 mine openings, removed 14 coal refuse piles, planted tens of thousands of trees, plugged 422 oil and gas wells, and ultimately reclaimed 462 acres within the park. By 1968, the dam on Muddy Creek was completed and Lake Arthur reached its full level by 1970. Some mine discharges were still left following the reclamation work, which led to the construction of the Barkley Road passive system which treats two abandoned mine discharges before entering Lake Arthur. This system functions to keep an average of 18,000 pounds of metals from entering the lake each year. Cliff provided information on the treatment system, recent rehabilitation project and led groups to the system to allow for a closer look.



Frank Preston and WPC members walk the mining impacted area that was to become Lake Arthur at Moraine State Park (<https://moraine.weebly.com/history-of-the-park.html>)

Bantam Jeep Festival (Continued)

The final portion of the Jeep Tour was led by Jennings Education Supervisor, Miranda Crotsley, with the help of Jennings volunteer Melissa Brewer and SRWC participant/Jennings volunteer Janice Belgredan, at the historic Foltz Schoolhouse. The schoolhouse is located at the Jennings Environmental Education Center and serves as a museum, education facility, and community gathering spot. This historical site has been recently renovated and reopened in 2022, thanks to the hard work of hundreds of dedicated volunteers and made possible through a grant written and administered by Stream Restoration Incorporated and various private donations.



Photo of Foltz Schoolhouse in 1900's (Left) versus today following renovation (Right).

The Foltz schoolhouse was in operation from 1880-1963 and was one of the last public one room schoolhouses in PA to close. One-room schoolhouses were common in Pennsylvania coal towns in 1800s to early 1900s, but its uncommon to see them standing in such great condition today. Coincidentally, the schoolhouse is located right next to Jennings AMD treatment system, both of which stand as relics to Pennsylvania's past and reminds us of the influence coal as a resource has played in Western PA's development and landscape.

Where Have We Been?

Some of you may be wondering why we have not published an issue of *The Catalyst* for some time. We had not published an issue since March of this year. Stream Restoration Incorporated has been going through some major changes and challenges over the last two years that has resulted in reduction of staff, volunteers and some growing pains. Unfortunately this also meant our newsletter had to take a backseat as we prioritized working on projects. The good news is that we are making progress and improving. We hope that we are now getting back on track and will resume regular publishing with the help of SRI environmental scientist Natalie Lamagna who is taking over writing and publishing of *The Catalyst*. As a result, the next couple of issues will probably be a little longer than usual to catch up on the news. We greatly appreciate everyone's continued interest and support!

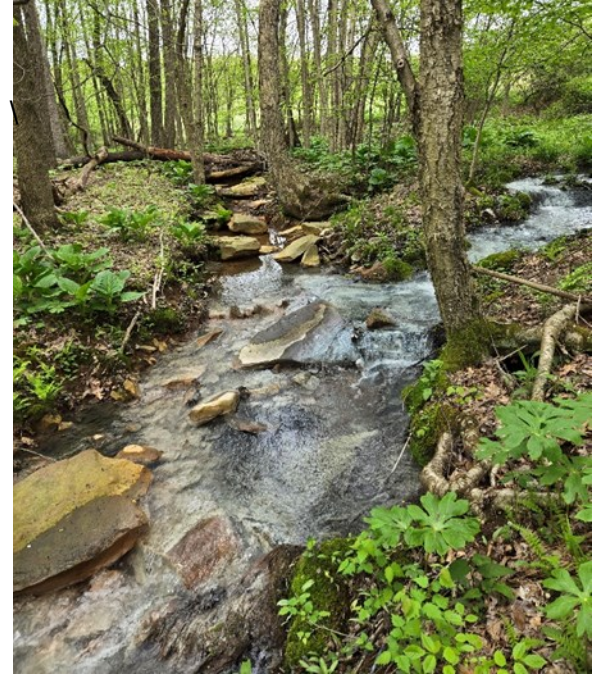
\$251,797 Awarded for the Rehabilitation of De Sale Phase I & II Passive Systems

Stream Restoration Inc. (SRI) in partnership with the SRWC is the recipient subaward through DEP's new AML and AMD Grant Program for the rehabilitation of De Sale Phase I and II passive treatment systems located in Venango Township, PA. The subaward of over \$250,000 from the PA DEP will fund the design, permitting, and monitoring necessary in the first steps of the rehabilitation project.

This is an important step for SRI and its partners, as pre-act (1977 SMCRA) abandoned mine reclamation projects will likely no longer be funded through Growing Greener and can only be funded with BIL/IIJA money.

More importantly, this subaward is a major win due to the immense benefits that the De Sale systems have on Seaton Creek and the rest of the Slippery Rock Watershed since their construction in 2000. The Phase I and II systems have collectively treated approximately 70 million gallons of AMD per year and function to neutralize 122,200 pounds of acidity and prevent 33,500 pounds of metals from entering Seaton Creek each year. This is incredibly important for aquatic life and for the quality of Seaton Creek as the AMD flowing into these systems contains low pH, high acidity, and high metal concentrations as compared to other AMD discharges in the area.

De Sale Phase I and II systems have proven to be a major feat in world of AMD treatment and have defied expectations regarding lifespans of passive systems for their time. Many passive treatment systems built today have life expectancy of ~20 years or less, but the De Sale systems were constructed a quarter of a century ago and are still functioning to this day. , Inc. in partnership with SRI over the decades.



Treated AMD exiting De Sale system (right) mixing with and providing excess alkalinity to an untreated headwater tributary (left)

Though the two systems have done well over the past 25 years, all passive treatment systems have finite lifetimes due to the eventual buildup of sludge, compromised piping, degradation of banks, and more. Hence, the need for rehabilitation. Thanks to this funding, the SRWC and its partners can ensure the restoration achieved by the De Sale Phase I and II systems can be continued into the future. This subaward was also recognized in the *Butler Eagle*, which can be previewed [here](#).



Forebay at De Sale Phase II



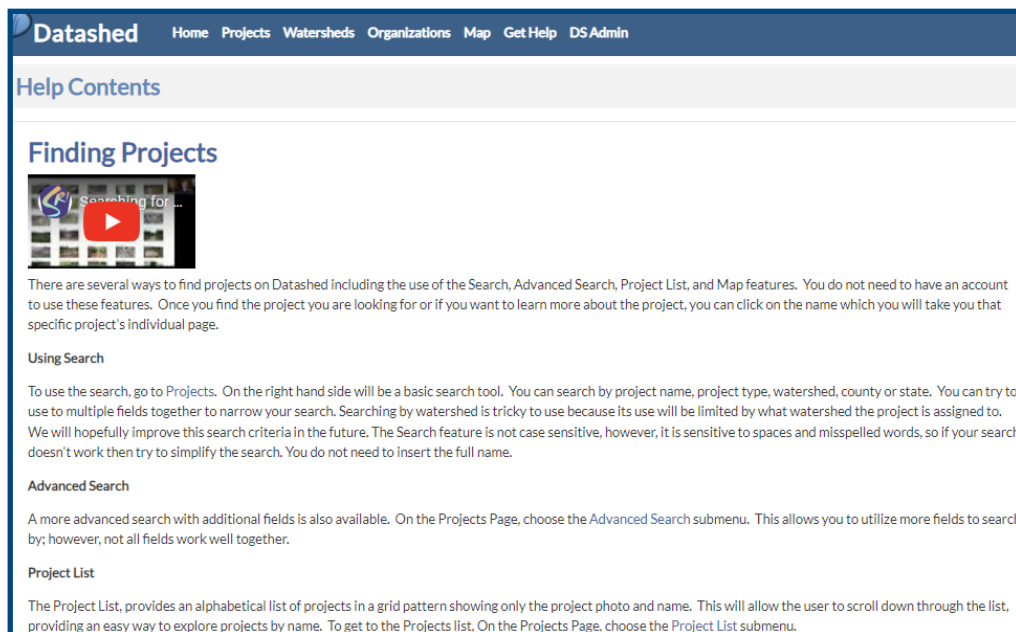
Aerobic Wetland at De Sale Phase II

Updated Tutorial Videos on How to Use Datashed.org

Attention to all new, long-time, and interested Datashed-users. The Stream Restoration Incorporated team has compiled updated tutorial videos on how to use and navigate datashed.org. These can be viewed in Datashed under the [Get Help](#) section or on SRI's YouTube channel. Tutorial topics include:

- Finding Projects
- Joining a Project
- Creating a New Project/Stream
- Editing a Project/Stream
- Creating a Sample Point
- Editing a Sample Point
- Creating a New Watershed
- Preparing Water Data for Upload
- Uploading Water Data
- Exporting Data

And more!



One of the tutorial pages, designated to “Finding Projects”, in Datashed.

Datashed.org is an online tool for managing watershed restoration projects especially acid mine drainage (AMD) treatment systems, and its information has supported the restoration of impacted watersheds for the past 20+ years. Datashed was first envisioned by SRWC participant Shaun Busler, as part of a SRWC Grove City College Student Research Project in 2001 to document passive treatment performance. The students needed to know 1) where treatment systems were located, 2) how to access those systems, and 3) where to collect water samples. As the use of websites was still relatively early, Shaun suggested that it would be helpful if all of this type of information could be placed onto a website, thus was born the idea of Datashed. Shortly after, Shaun and Cliff began working with Peter Drake of 241 Computers to create Datashed. Over the years, Datashed has gone through multiple redesigns and updates. Earlier this year, SRI received funding for the Datashed 5 grant from the PA DEP Growing Greener Program which will continue to pay for hosting costs, updates, training, data management, etc.

Today, Datashed contains information on over 350 AMD treatment systems across Pennsylvania. Water quality data, design/as-built drawings, maps, location details, funding information, lists of organizations involved, and much more are stored on Datashed for each treatment system project.

Not to mention that all of this information could be accessed for **free**. If you are someone involved in mine reclamation work, a student or researcher looking for data, or even just a fellow Pennsylvanian curious about restoration projects near you, then be sure to check out Datashed!

The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY

Common Fish in Pennsylvania's Streams: Sometimes, the most common or important fish to stream ecosystems are not the most well-known. Check out the section below to learn more about these neat fish!

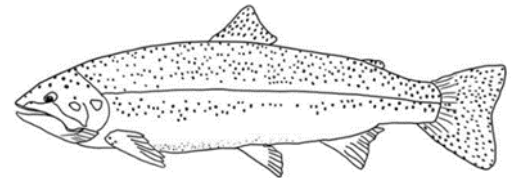
The Fish



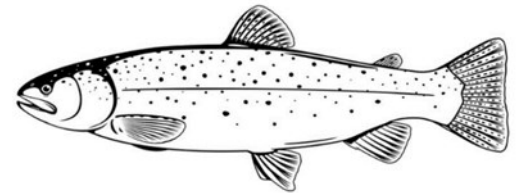
Fun Facts

Rainbow trout were brought to PA from the Pacific 100 years ago and are commonly restocked in streams today. They prefer white-water of cool streams.

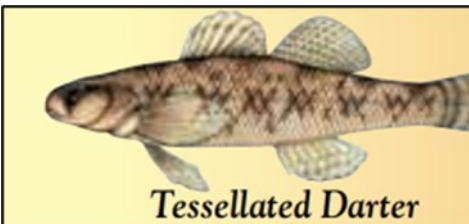
Now Let's Color!



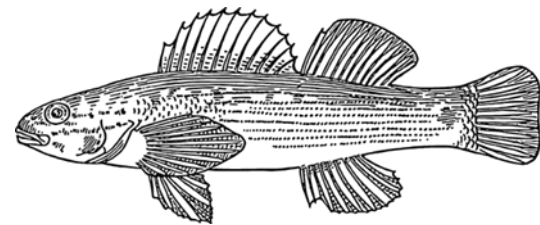
The beautiful brook trout is native to PA's cold, clear streams and is our state fish. Brook trout are not tolerant of environmental change and many streams do not support stable populations as a result.



Brown trout were brought over from Europe in the 1880s, causing them to compete with the native brook trout. Brown trout prefer cold, clear streams but tolerate warmer waters and turbidity.



Relatives of perch and walleye, darters are stream fish that are adapted to living among rocks in fast currents. For this reason, they are small and fast moving.



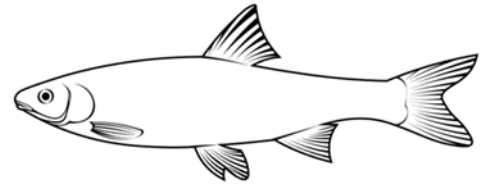
Sculpins are bottom dwellers of cool, swift, rocky streams. They have a scary appearance but are completely harmless! Not to mention they are very small (<5 in).





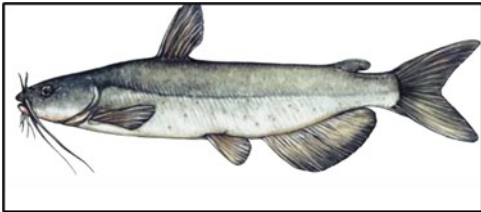
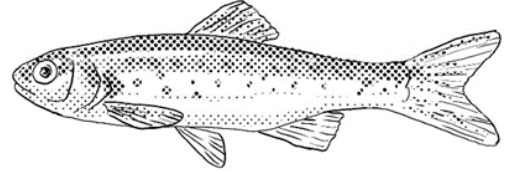
Blacknose Dace

The blacknose dace is a small, slender minnow that grows up to 3 inches long and is a common inhabitant of small PA streams.



Creek Chub

The Creek chub is one of the most common stream fishes in the eastern US. They are small (4 -10 in) and found in pools of clear streams.



Channel catfish live in deep pools of medium to large streams and can reach up to 35 pounds. They are nocturnal and most successfully fished for at night.

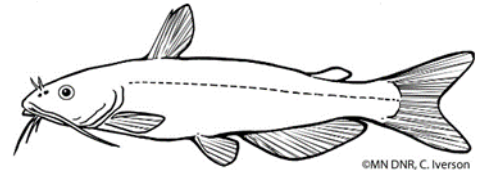


Photo Credits to Linda Steiner and her collaborators at the Pennsylvania Fish & Boat Commission for *Pennsylvania Fishes* book: https://www.fishandboat.com/Fishing/All-About-Fish/Documents/PA_Fishes_Book.pdf

Thank You Melissa Busler!

We would just like to give a huge thank you to Melissa Busler for putting together *The Catalyst* for the past 21 years. She has been the primary person putting together the articles and has shared her creativity with us through her *Kid's Catalyst* activities. It means a lot to the SRWC that she has kept *The Catalyst* alive through all these years. Melissa is now retiring from managing the articles, but her hard work and creativity will not be forgotten!



Slippery Rock Watershed Coalition c/o Stream Restoration Incorporated
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Thanks to The William & Frances Aloe Charitable Foundation, Environmentally Innovative Solutions, LLC, Dominion Peoples, Amerikohl Mining, Inc., Quality Aggregates Inc., Drs. Ron & Kathy Falk Family, BioMost, Inc., Allegheny Mineral Corporation and PA DEP for their support. For more information contact: Slippery Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), PO Box 837, Slippery Rock, PA 16057, sri@streamrestorationinc.org, www.srwc.org. September distribution: 190 copies