

THE CATALYST

SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

NEXT MEETING: 7 pm on 3/12/15 at Jennings Environmental Education Center, pizza and pop provided. 2/12/15 meeting attendance: Z. Barger, S. Busler, C. Denholm, M. Dunn, V. Kefeli, B. Kuban, W. Taylor, F. VanAtta

Visitors from South Korea

Pennsylvania had some special visitors from South Korea the week of October 13th, and part of their time was spent in the Slippery Rock Creek Watershed!! **Min Ju Kang** and **Young-Min Lee** of the **Korea Environment Corporation (KECO)**, a government organization, came all the way to Pennsylvania to learn about approaches to address abandoned mine issues. Two days of their visit were spent touring western Pennsylvania with **Margaret Dunn** and **Cliff Denholm**, who were glad to share their knowledge and experience.

They kicked-off their tour with a broad overview of various approaches by meeting with **Bob Dolence**, who has worked for PA DEP, US OSM, and private industry, and who has been instrumental in developing many public-private partnership efforts. Restoration sites of the **Montour Run Watershed Association** were then visited, including the North Fork and McCaslin Road passive systems. There they met **John O'Neal**, **Findlay Township Public Works Director**, and **Kevin Gurchak**, **Environmental Compliance Manager, Allegheny County Airport Authority**, as well as **Pat Web** and **Rich Beam** of the **PA DEP Bureau of Abandoned Mine Reclamation**. Pat and Rich then provided a very informative tour in the afternoon of unreclaimed and reclaimed surface mines and underground mining problems. We also were able to visit the Champion Coal Refuse pile, which is one of the largest (!!!) refuse piles in the eastern US, and where coal is being actively recovered from old coal washing operations.

The 2nd day began at the **US Office of Surface Mining** where our new Korean friends had the opportunity to meet with **Ben Owens**, **Division Chief**, and **Rick Balogh**, **Supervisory Program Specialist**. We then drove to the Slippery Rock Creek Watershed where **Wil Taylor**, **Park Manager** provided an in-depth tour of the passive system at the **Jennings Environmental Education Center**. Before having to say goodbye to our guests, our Korean visitors had a chance to see first-hand, a stream bank restoration project that was under construction along Slippery Rock Creek. There they met with **Frank VanAtta** from the **Slippery Rock Campground**, who was instrumental in organizing the fish-friendly restoration effort, and **Ryan Mahony** and **Dan Guy** who were busy with the construction effort. The two days were packed full of information; however, we would have liked to continue the tour in the watershed, as there are many more people and projects that would have added to their understanding of the various restoration approaches. What an honor it was to meet and spend time with these wonderful people from South Korea. We wish them the best with their efforts back home!

Calling All Volunteers!

The Slippery Rock Watershed Coalition is seeking volunteers for our **Adopt-A-Passive Treatment System** monitoring program. This program provides training and field equipment to volunteers who will inspect, monitor (monthly), and help maintain designated passive treatment systems within the watershed. The systems have been built to treat degraded drainage from abandoned coal mines that were major sources of pollution to the Slippery Rock Creek Watershed. The volunteers become the eyes-and-ears of the SRWC as they perform these very important inspections and use field kits to conduct water monitoring to help determine if and when maintenance is needed. Collected data are uploaded to Datashed, an interactive website database, which is used by many others (locally, nationally, and internationally) involved in the treatment of coal mine drainage.

Please contact **Cliff Denholm** at (724) 776-0161 or email us at sri@streamrestorationinc.org for additional information.

Be a watershed superhero!





“Before Pictures” showing needed maintenance in May 2013 at the De Sale Phase 1 passive treatment system after 13 years of operation. See article below describing maintenance efforts performed in June 2013.

De Sale Phase 1 Undergoes Successful O&M

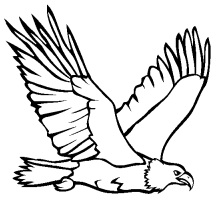
Thanks to **landowner support**, funding for technical assistance and maintenance from the **PA DEP’s Growing Greener, Stream Restoration Incorporated, Foundation for Pennsylvania Watersheds**, and in-kind volunteer services from the **SRWC, BioMost, Inc.** was able to perform maintenance and upgrades on the De Sale 1 Passive Treatment System in June of 2013. A routine inspection of the system in May 2013 revealed several issues requiring attention for the system installed in 2000. A portion of the flow entering the Vertical Flow Pond (**VFP**) South was overflowing through the emergency spillway into the settling pond. Part of the reason was that the pipe, which directs flow from the Forebay into the VFP North, had become plugged with low-pH iron so that all the water had to go through the VFP South. As the design for “peri-pipes” had not been developed when the VFP South was constructed, standard outlet pipes had been installed, which could not be lowered to increase head pressure. Several pipes were clogged with iron solids and vegetation. Despite the issues, the **13-year old system was still treating the 36-gpm (avg.) mine drainage!!!** The final effluent had a pH of 6.3, 40 mg/L alkalinity, total iron and aluminum of 2 and 0 mg/L, respectively. The raw water averages a pH of 3.6, 320 mg/L acidity, and total iron and aluminum of 82 and 12 mg/L, respectively.

The old outlet structures were removed in the summer of 2013 and replaced with “peri-pipes”. This new upgrade also allows for easier flow measurements and sampling of the system. The channels below the VFP outlets were also restructured and cleared of vegetation, another important maintenance task.

Previous O&M upgrades included stirring the top one to two feet of the VFP North in November 2012 to address permeability issues that were developing, possibly as a result of the accumulation of low-pH iron on top of the compost layer. An earthen ramp was installed at the northeast corner of the VFP North to provide an access point for the skid loader to enter the pond to stir the media.

Water monitoring conducted on September 25, 2014 indicated the system was working well. The final effluent had a 6.4 pH with 70 mg/L of alkalinity. While equipment and tools were at nearby De Sale 2 (*Catalyst* article coming soon!!) to perform maintenance, a site visit was conducted to replace the forebay pipes that periodically plug with low-pH iron at De Sale 1. A 10” pipe was installed in place of each 6” pipe. The pipes installed were also shorter than the previously installed pipes to hopefully reduce frequency of cleaning and to increase the ease of cleaning.

(Maintenance with implementation of design improvements are also planned in order to improve manganese removal, currently almost one half of the manganese is being removed with the average raw and treated water having 55 and 31 mg/L, respectively.)



The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



It's for the Birds: Crossword Puzzle

If you haven't heard them yet, you will soon! Our backyard feathered friends will be chirping and tweeting as springtime nears! Many of the birds that migrate away from Pennsylvania are on their way back home, and we look forward to seeing them soon. The crossword puzzle below is all about birds. Did you know there are over 900 wild bird species in North America? If you can complete the crossword puzzle below and mail it to us, you will receive a \$1 Amazon.com credit through a parent's email address (for ages 16 and younger only, please). You can save them up all year to buy something really special and fun!

Across:

1. The word for when birds fly south for the winter.
3. The birds that say "Whooo, whooo, whooo."
5. The colorful covering on birds that keeps them warm.
7. A bird's house.
9. A common bright red bird with a black face and short, thick bill
10. The bird that says "Caw, caw, caw!"
11. This bird is the symbol of our nation.
13. This big bird can't fly, but it can run over 40 MPH and its eggs can be 5 inches across!
16. The bird commonly eaten for Thanksgiving dinner.

Down:

2. Famous saying: the _____ bird catches the worm.
4. The special structures on birds that lets them fly.
6. Many birds eat _____ like beetles and caterpillars.
8. The smallest bird (it makes a "humming" sounds when it flaps its wings super fast)
12. This white bird is a symbol of peace and love.
14. These waddling black and white birds do not fly, but love to swim, and are common in very cold places
15. The Canada _____ makes a loud honking sound and flies in a flock shaped like a "V" in the sky.
17. Very brightly colored birds that can speak words.

Name _____ Age ____ Address _____

Parent's email address for Amazon.com gift credit: _____



Slippery Rock Watershed Coalition c/o Stream Restoration Incorporated
A PA Non-Profit Organization
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In Any Kind of Weather...

The early evening of February 12th featured a temperature in the teens and moderate winds in western Pennsylvania, but that didn't stop one dedicated new volunteer from meeting outdoors with the SRWC's **Shaun Busler** for a data logger training session! Shaun and volunteer **Zane Barger** met on the campus of Grove City College to partake in a very chilly data logger lesson... once they could locate the data logger, which was buried under a frozen Wolf Creek, laden with a couple of inches of snow!!!

Shaun used a mini sledgehammer to break through the ice, creating a small access hole to the water and data logger which began to refreeze almost as fast as it was made! It was a cold day indeed, as the water taken for an on-site pH test froze within minutes — which was discovered when they turned the sample tube upside down to dump out the test water and nothing came out!

Thankfully Zane, who graduated with an environmental science degree from Slippery Rock University, said he liked the cold. In addition to pH, Shaun performed a conductivity test at the stream and showed Zane how to use the equipment and software.



The Grove City data logger is the 12th and last data logger to be installed and now monitored by a volunteer. Water quality data will be collected by volunteers on a regular basis. The SRWC's use of the data loggers (also known as sondes) has been made possible through a **Colcom Foundation** grant! We look forward to analyzing the data to be collected in 2015 and beyond, thanks to Zane (pictured in the photo above) and our other helpful volunteers!