

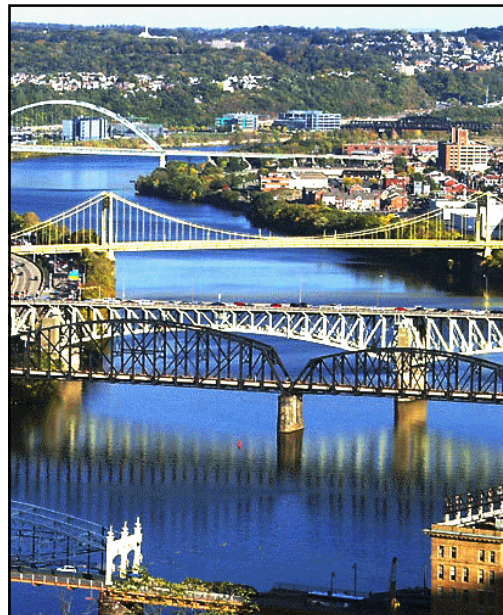
THE CATALYST

SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

THIS MONTH'S MEETING: Thursday 9/10/09 at Jennings Environmental Education Center, pizza and pop provided. 8/13/09 attendance: D. Carney, S. Carney, M. Dunn, V. Kefeli, S. Smith, W. Taylor

Change the Date of Your "Save the Date"!!! **The Riverboat Cruise Sails THURSDAY, OCTOBER 1!!!**

Please make note of an important change! **The date for the Ohio River Watershed Celebration has been changed from September 24, 2009 to October 1, 2009!** Why? Something about the leaders of the world's 20 wealthiest nations meeting in Pittsburgh for an economic forum. Since none of the world leaders bothered to consult us on the date of their summit on the international financial system, we unknowingly scheduled our annual riverboat cruise for the same day. **Please mark your calendar now for October 1, 2009**, the NEW date of the ORWC! We apologize for any inconvenience. We will be cruising the Monongahela River (pictured at right) rather than the Allegheny River; all other aspects of the day's activities are scheduled as originally planned.



Also make note that registration for the Imagination Cruise (the children's boat) has reached capacity and is therefore closed. You may call 724-776-0150 to be placed on a waiting list. If you are unable to attend on October 1 and have already signed up, please contact us so someone else may have your spot. The Networker Cruise for adults is still open; you may register at www.streamrestorationinc.org/rsvp. "Don't miss the boat!" See you on October 1!

SRWC's Mine Reclamation Work Featured in "Land and Water" Magazine!

The national magazine of resource management and restoration, "Land and Water", featured an article about the work of the SRWC in its July/August issue! SRWC participants **Cliff Denholm, Tim Danehy, Shaun Busler, Tom Grote, and Margaret Dunn** all contributed to the article, which is entitled "Slippery Rock Creek Watershed Restoration and Rehabilitation." The article focuses on the group's efforts to clean up Seaton Creek, a major headwaters tributary, which contributed 42% of the acid load and 49% and 41% of the iron and aluminum loads, respectively, to Slippery Rock Creek. The cleanup efforts concentrated on a 40-year old, 100-acre surface mine located in Venango Township, Butler County. A passive system was installed in 2000 to essentially treat the small unnamed tributary in its entirety. Silt fencing was installed down gradient and a 1300-foot long diversion ditch was created upgradient of the construction area. A 3-foot high in-stream dam was constructed, with pipes installed to convey up to 700 gallons per minute into the treatment system. The intake pipes divert the stream into an 8000-square foot Forebay to settle solids and debris. Water then flows to 2 Vertical Flow Ponds, which raise the water's pH, remove metals, and neutralize acidity. PVC underdrain piping then discharges the water to a 0.2-acre, 5-foot deep Settling Pond. A riprap-lined spillway allows the water to then pass to a 1.5-acre, free-flowing, constructed Aerobic Wetland for more treatment. After exiting the wetlands, water enters a Horizontal Flow Limestone Bed before being discharged into a rock-lined channel that returns the flow to the tributary. The passive system is currently neutralizing 180 pounds of acidity each day, in addition to removing 20 pounds of iron, 8 pounds of aluminum, and 25 pounds of manganese-bearing precipitates each day! Water monitoring in 2008 showed 100% neutralization of acidity, and 99%, 99%, and 70% reductions of iron, aluminum, and manganese concentrations, respectively. Thank you, "Land and Water" Magazine, for giving us the opportunity to share our success at De Sale Phase 2!! Check out www.landandwater.com to see more job-site stories, case histories, and the information on the latest developments in natural resource management and restoration.

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Intern Bryan Page, covered in mud, iron, and other gook, poses in front of his work truck, which is also covered in mud, iron, and other gook. In his hands are 2 cattails, which he harvested while “thinning out” a constructed wetland at the SR101A treatment site in the Slippery Rock Creek headwaters.

The Mishandling of Our Chestnuts

By Bryan Page, intern

At the office of Stream Restoration Inc., **Shaun Busler** decided to try to plant some hybrid American Chestnuts. The large field in front of the office is a perfect location and it was decided that was to become an orchard of sorts. This task was motivated by Shaun’s desire to see the revitalization of one of the nation’s most valuable trees coupled with an exceptional dislike of grasses (allergies). The American Chestnut (*Castanea dentata*) once grew wild throughout the Appalachians until the blight (*Cryphonectria prarsitica*) came to America ca. 1904. Since the mid-20th century, many different organizations have been trying to grow a blight resistant American Chestnut. Today, some hybrids are 15/16 American Chestnut with the other 1/16th usually Chinese Chestnut. Shaun ordered the hybrid chestnuts from the **American Chestnut Foundation**, who have been wonderful to work with. The hybrid chestnuts arrived at the office and a well-intentioned co-worker decided to place the nuts in the freezer. Shaun did not catch the mistake until a while later. The nuts should have been refrigerated instead of frozen. The project was then handed to me, the lowly intern, and my job was to plant the chestnuts. I decided to plant some in pots and some directly in the ground. I quickly learned

that not only humans value chestnuts. By the next day, 1/5 of my potted plants had been eaten by either deer or some vermin. I was unable to determine which was accountable, but the thought of a stakeout did cross my mind. The stakeout never happened and by the end of the first week all the potted plants were eaten with even a couple directly planted nuts eaten as well. Some of the directly planted nuts survived the feast, but to our dismay, not a single chestnut sprouted. The moral of the story: do not let anyone freeze or eat your chestnuts.



An American chestnut tree is pictured at left (historical photo)



The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



Autumn Crossword Puzzle

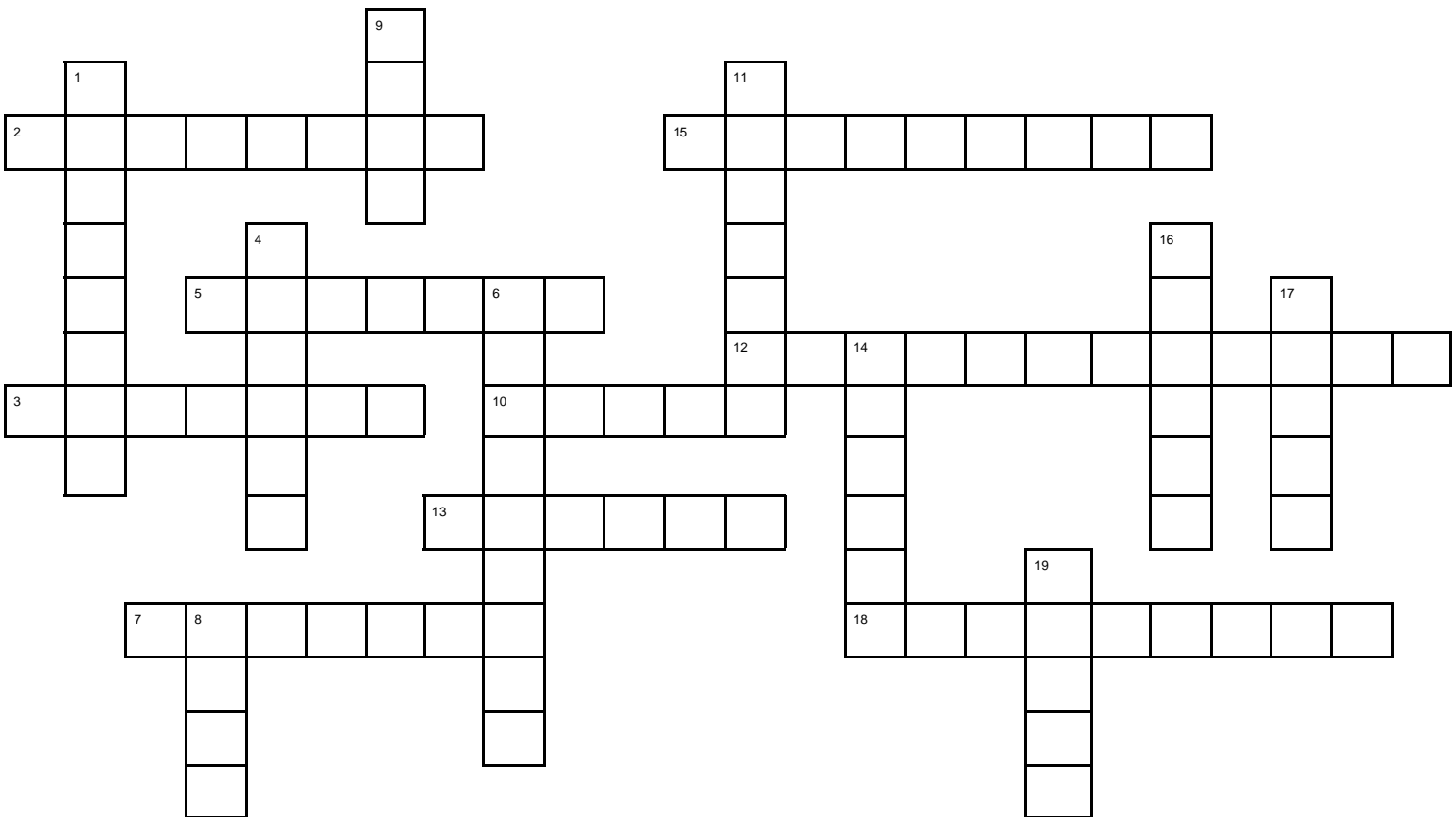
Autumn is just about here! To welcome this enjoyable season of the year, we have an autumn crossword puzzle for you. Use the "Down" and "Across" clues to fill in the word boxes below. As usual, if you mail us your completed paper, we'll send you a free gift certificate!

DOWN

1. The way trees look during autumn
4. Something people outside during autumn to stay warm
6. Used to frighten birds away from corn
8. A tasty yellow vegetable with kernels
9. Another word for autumn
11. Some animals do this in the autumn, traveling far away from their summer homes during the colder months
14. These fall from oak trees and are gathered by squirrels
16. The way the air feels in autumn
17. A drink made from apples
19. People sit on stacks of _____ during hayrides

ACROSS

2. A popular sport played in the autumn
3. A large orange squash that people carve faces into
5. To gather crops for storage and use before winter comes
7. The middle month of autumn
10. A crunchy red fruit
12. An autumn holiday celebrated in November
13. One of the colors leaves turn in autumn
15. Animals that _____ in winter eat a LOT of food in autumn, to prepare their bodies to live off the stored fat while they are in a "deep sleep" during the cold months
18. Labor Day is in this month, also the first month of fall



Name _____ Age _____

Address _____



Slippery Rock Watershed Coalition c/o Stream Restoration Incorporated
A PA Non-Profit Organization
434 Spring Street Ext.
Mars, PA 16046

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SRWC's Istanbul Connection

"Advances in Molecular Biology", a publication of **Istanbul Kultur University** in **Turkey**, published not just one, but TWO articles in 2008 detailing some of the research done by the SRWC's **Dr. Valentin Kefeli** and his students! One article, entitled "Wood-bark-cambium Relations During Willow Cloning and the Mechanism of Rooting in *Salix Discolor*", discussed the process of pussy willow cloning. Investigations on rooting by **Dr. Kefeli** and Slippery Rock University (SRU) students, **Christopher Leininger**, **Shari Mastalski**, and **Beth Rehn**, showed roots are formed only on the bark with cambium present. If the bark was stripped, no roots on the wood were observed. The second article, "Characteristics of Fabricated Soil for Landscape Rehabilitation: The Four Crop Test for Biological Activity", detailed studies by **Dr. Kefeli** and SRU students **Christopher Leininger**, **Shari Mastalski**, and **Kimberly Pincin**. Their experiments involved using fabricated soil for the rehabilitation of land from mining soil pollutants. Knowing that soil health includes a balance of mineral and organic elements and microbial activity, they measured the amounts of elements in the fabricated soil such as nitrogen, phosphorus, potassium, magnesium, calcium, sulfur, iron, manganese, zinc, aluminum, nickel, and lead.

How exciting for Dr. Kefeli and students to be published in "Advances in Molecular Biology"! Istanbul Kultur University, the oldest and best-established university of Turkey, has a history that dates back 550 years!!! There are approximately 60,000 students receiving their B.A., M.A., and Doctorate degrees. Dr. Kefeli is among 26 distinguished scientists who sit on the Editorial Board of "Advances in Molecular Biology", which includes people from Russia, Greece, the Czech Republic, Bulgaria, and Turkey!



This August, Valentin, along with his wife **Galina**, traveled to the Institute of Soil Science in **Vienna, Austria**, and there met up with **Professor Winfried Blum**. The two completed work on a book in the process of publication, entitled "Mechanisms of Landscape Rehabilitation and Sustainability." The book was edited by **Narcin Palavan Unsal** from Istanbul Kultur University, and technical assistance was provided by **Shari Mastalski** from SRU. The comprehensive book, sure to be a valuable tool for those interested in soil science, fabricated soil, landscape rehabilitation, and sustainability, is divided into 4 parts. Part 1 discusses soil as a component of the biosphere, Part 2 is about the general characteristics for fabricated soil, Part 3 details biomass accumulation and growth regulation processes in plants growing on fabricated soil, and Part 4 is on the water cycle and plant activity.

Together in Vienna, Professor Winfried Blum and Dr. Valentin Kefeli each hold a copy of "Mechanisms of Landscape Rehabilitation and Sustainability."

The SRWC is proud to help support Dr. Kefeli in his soil studies and other research, and counts him as a very valuable participant and partner in research and experiments in the Slippery Rock Watershed!