

THE CATALYST

SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

THIS MONTH'S MEETING: Thursday 1/13/11 at 7 pm at Jennings Environmental Education Center, pizza and pop provided. 12/9/10 meeting attendance: J. Belgraden, C. Denholm, M. Dunn, D. Johnson, V. Kefeli, S. Smith

Allegheny College Geochemistry Students Tour De Sale Phase I System



On November 17, 2010, **Dr. Rachel O'Brien** and her geochemistry students from **Allegheny College** traveled down to the Slippery Rock Creek Watershed to tour the De Sale Phase I passive system. **Cliff Denholm** of **Stream Restoration Incorporated** was on hand to provide the tour. Cliff provided an overview of the activities of the Slippery Rock Watershed Coalition, coal mining in the area, and passive treatment systems. As they inspected the site, Cliff discussed the various chemical and biological treatment processes that occurred at each component and gave the students the opportunity to conduct field testing using water quality meters to illustrate the quality improvement at each step in the treatment process. The students had very good questions and, despite the cold weather, seemed to be enjoying the day! Cliff was outside talking about mine water,

passive treatment, and water chemistry so we know that he had a good time!!!

Partner and Professor: Dr. Helen Boylan is Published in Online Journal

Dr. Helen Boylan, Westminster College associate professor of chemistry, was published in the 15th issue of *The Journal for Civic Commitment*, an online journal dedicated to service learning and civic engagement.

Dr. Boylan's article, entitled "**Student Reflections on a Watershed Service Learning Project Reveal Four Key Findings**," detailed the three-year partnership between Westminster chemistry students and the **Slippery Rock Watershed Coalition** to test sites being treated for abandoned mine drainage. SRWC uses the laboratory-quality results provided by the students to help assess the efficacy of the passive treatment systems.

"This service learning project on abandoned mine drainage aligns well with the objectives of our Advanced Laboratory course," the article states. "It is a cross-disciplinary investigation involving environmental chemistry. Additionally, it introduces the students to field sampling and analysis and the use of standard methods, three skills not normally taught in our chemistry curriculum."

Each student wrote a two- to three-page reflection paper that addressed what he/she learned. The four findings were: positive feedback from the partner is key to success; "seeing" results is important; unplanned learning abounds; and the discipline matters in the real world. As one student wrote, "...for the first time the data we obtained in lab counted for more than just a grade." The complete article is available at <http://www.mesacc.edu/other/engagement/Journal/>.

The SRWC has long cherished partnerships with local students of all ages and is glad to provide them with real-life learning opportunities. If you are a student or a teacher who would like to become involved in the hands-on science of AMD remediation, give us a call at 724-776-0161!

2011 Public Meeting Dates Announced for review of the draft Slippery Rock Creek Watershed Conservation Plan

****All meetings begin at 7 pm****

Plain Grove Twp. Municipal Bldg.- Tues. Feb. 8

Grove City High School Auditorium - Wed. Feb. 9

Slippery Rock Twp. Municipal Bldg.- Thurs. Feb. 10

Boyers Sportsmen's Club -Tues. Feb. 15



Dr. Lynn K. Rieske-Kinney dissects a gall from an American chestnut tree to show an attendee of the Chestnut orchard tour.

Bringing Back the Mighty Giant—in Mercer

The **PA Chapter of The American Chestnut Foundation** (PA-TACF) held its fall meeting at the Mercer County Cooperative Extension building, and **Shaun Busler** of Stream Restoration Inc. and the Slippery Rock Watershed Coalition was excited to attend! The meeting began with opening remarks from **Alex Day**, retired manager of Penn Nursery, and continued with an interesting talk by **Dr. Lynn K. Rieske-Kinney**, Professor of Forest Entomology at the University of Kentucky. Lynn's presentation "Chestnuts and the Gall Wasp" went over information regarding another new threat to the American Chestnut by an exotic species. The Asian or Oriental gall wasp first was observed infecting Chinese Chestnut trees in Georgia in 1974, and has spread to Pennsylvania. The gall wasp has been in Mercer and Erie Counties for more than 3 years, with significant numbers of galls appearing on many American Chestnuts in Mercer County in the spring of 2009. The effect of the galls was a severe decline in tree vigor and decreased production of chestnuts. It is hoped that "**Citizen Science**" (**volunteer observation and reporting**) will aid in monitoring and overcoming this new threat.

Two additional speakers led talks before the lunch break of the meeting. **Dr. Uma Ramakrishnan**, Assistant Professor of Environmental Science and Studies at Juniata College spoke on the topic "The American Chestnut as a Service Learning Project." It is great to see the college contribute to the Foundation and to provide hands on learning opportunities for the students. After lunch was a presentation by **Dr. Brian McCarthy** called "Chestnuts and Strip Mine Reclamation". This presentation provided a lot of great information on establishing hardwoods, particularly the American chestnut, on strip mines. American chestnuts are well-suited to rocky, well-drained, acidic strip mine soils, which are abundant in the Slippery Rock Creek Watershed.

The last event of the meeting was a tour of the Haun Orchard, one of more than 150 chestnut research and demonstration orchards maintained by PA-TACF volunteers and citizen scientists to help support the regional tree breeding program. At the orchard, attendees were shown how the blight has affected the trees and the resulting sucker growth that still produces nuts every year.

Shaun was quite interested to learn more about the new and exciting things going on through TACF, including information on the layout of a chestnut demonstration orchard and the role chestnuts can play on AMD remediation sites. Hopefully, someday the SRWC can partner with the Foundation to bring back American chestnuts to the watershed.

Since 1983, TACF's scientists have worked to create a blight-resistant species by backcrossing the American chestnut with the blight-resistant Chinese chestnut. Now TACF is planting and testing its potentially blight-resistant trees called "**Restoration Chestnuts**". If you would like to learn more about the "mighty giant" or get involved, just visit www.patacf.org or email mail@patacf.org. And look right here for future updates!

2011

The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



A New Year! And Some Old Ones...

Happy New Year to all of our wonderful Kids Catalyst participants out there! We hope 2011 will be a great year for each of you and that you are having lots of fun so far. In this month's activity, you will be using the path of numbers below to find the answers to some fun (and funny!) "year" related science questions. Simply begin at the "Start" and count every 4th block and write down the number inside. If you mail us your completed paper, we will send you a free gift certificate! Happy 2010!

1. A kangaroo proved to be faster than a horse in a race in Australia in this year: ____ _
2. The first national Earth Day was celebrated in this year: ____ _
3. The 1st commercial coal mining operation began production in Virginia in the year ____ _
4. The DVD was invented and developed in the year ____ _
5. The first cellular phone was 1 foot long, weighed 2 pounds, and cost \$4000. The first call was made in the year ____ _
6. There are ____ _ days in a year on the planet Mars
7. We should next see Halley's comet in our sky in the year ____ _

START →

2	3	5	1	7	8	1	9	6	4
1	5	8	4	7	2	9	3	2	1
6	3	1	9	7	8	3	7	4	7
7	2	5	6	1	6	8	5	0	9
4	3	2	4	5	7	6	8	7	1
9	7	9	1	9	4	0	3	1	0
6	0	1	5	2	3	8	1	4	6
3	4	5	2	7	0	4	6	9	5
2	1	2	6	9	3	7	8	1	0
0	8	7	3	2	6	7	9	7	1
5	4	2	6	0	1	2	1	3	4

→ END

Name _____ Age _____

Address _____



Slippery Rock Watershed Coalition c/o Stream Restoration Incorporated
A PA Non-Profit Organization
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SRWC Student Symposium 2010 Packed With Promise from Future Scientists

The annual Westminster College—SRWC student symposium was held on December 2 from 5:30 PM to 9:00 PM at McKelvey Campus Center at Westminster College. Keynote Speaker **Andy McAllister, WPCAMR**, spoke on "Western Pennsylvania's Abandoned Mine Legacy: Understanding our Past to Help Shape our Future." Many bright young minds were excited to participate in the event to showcase their scientific research in a variety of topics.

Oral presentations included the following:

- "The Role of Knowledge, Attitudes, and Responsibility in Predicting Prosocial Ecological Behavior Intentions" - Cassie Treshok, Westminster College
- "Fabricated soil for cold frame cultivation of vegetables and wood cuttings" - Rayan Yarrington, Slippery Rock High School
- "Characterization & possible sustainable sorbent use of iron oxides from abandoned mine drainage discharge, Cody "Buck" Neely, University of Oklahoma (currently BioMost, Inc.)
- "Results from the initial "ELF" inter-mine pool transfer tests" - Bryan Page, BioMost, Inc.
- "Half Moon at Checkerboard Mesa: Fantasy for Oboe, Crickets & Coyotes" performed by David Cushman, Westminster College Dept. of Economics and Business

Posters and Displays included the following:

- "Warm Fall Day" artwork by Carissa O'Connor, Westminster College
- "Art and Nature course projects & Journals" - Peggy Cox ART 105 Art and Nature Course, Westminster College
- "Gladje av naturen" - artwork by Caitlin Roberts, Westminster College
- "Biological test of four crop cultures for the determination of the gray water quality after Papyrus cleaning" - Elyse Lapham, Taylor Graves, & Daniel Verbene, Robert Morris University
- "Biological testing of mining water quality using 4-crop test" - Abby Brentzerl & Brittany Cavanaugh, Robert Morris University
- "Field Station Going Off the Grid with Solar Power" - Ashley Durham, Westminster College
- "Evaluating the Effect of Photoperiod on the Offspring Sex Ratio of the Parasitoid Wasp, *Nasonia vitripennis*" - Karen Humphries, Westminster College
- "Potentiometric Measurement of Sulfides" - Travis Q Battiest, Youngstown State University
- "Recharging Your Environment: Technology Recycling Initiatives" - Katie Farley, Nicole Jodikinos, Kelly Matune, & Rachel Hoffman, Westminster College
- "Regenerative cycle in biomass formation and bio-fuel production" - Shari Mastalski, Slippery Rock University
- "Solar Energy Education Display" - Cassie Treshok, Nicole George, & Zach Smith, Westminster College

Ryan Yarrington, a student at Slippery Rock High School, and **Justin White** received honorable mention for oral Presentation. Ryan and Justin have worked closely with SRWC soil scientist **Dr. Valentin Kefeli**. Congratulations to Ryan and Justin, and to all of the student participants! **You each did a tremendous and professional job!**