

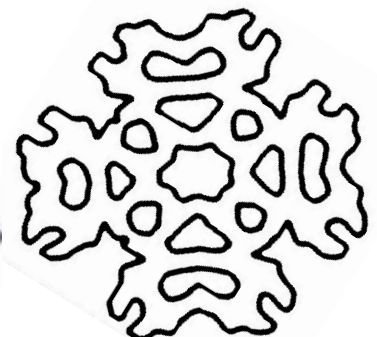
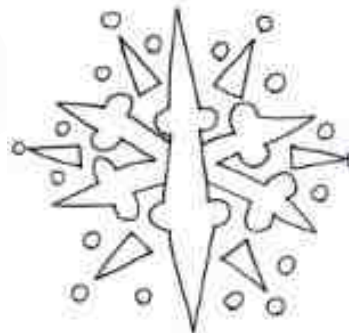
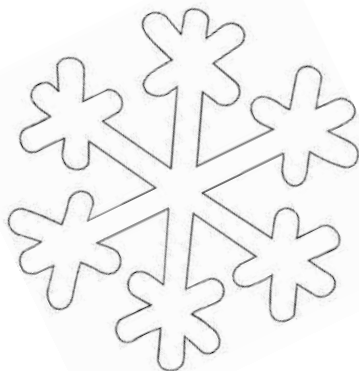
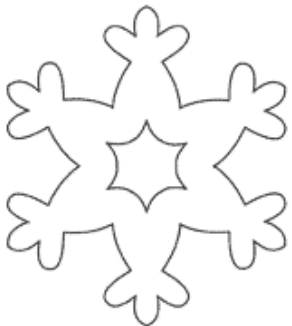
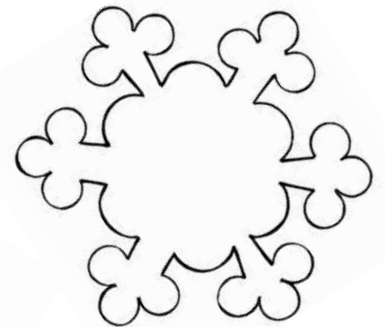
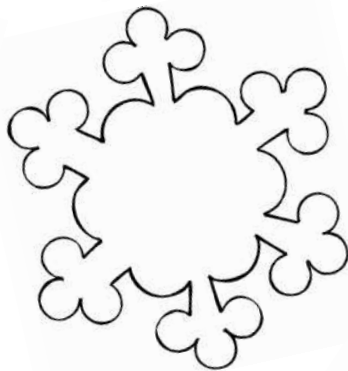
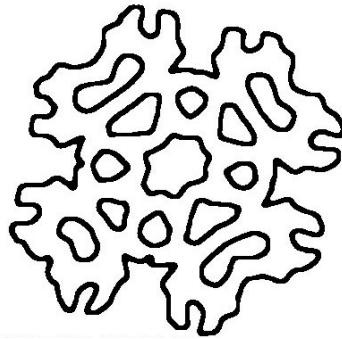
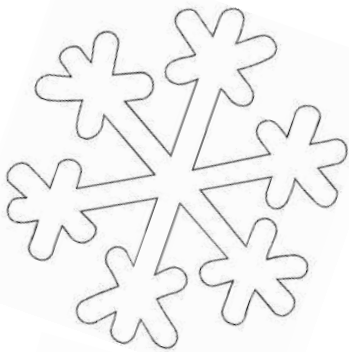
The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



Snowflake Match-Up

No 2 snowflakes are alike—except for in this Kids Catalyst page! Snowflakes develop differently depending on the temperature and how wet the air is. A typical snowflake begins by forming around a speck of dust. Then it grows into a tiny hexagonal prism. The initial symmetry of the snowflake results from the molecular structure of ice. As the crystal grows, it's often blown about in the sky. The air and temperature around the crystal are constantly changing. Snowflakes are extremely sensitive; even a small change in these conditions can lead to different growth patterns. The final shape of the crystal reflects these growth conditions. The longer the snowflake is blown about in the sky, the more complex the resulting snow crystal. No two crystals have the same history so they don't grow in the same way. No two have ever been the same, or ever will be. Below there are 6 pairs of snowflakes; try to find the matches, and then color each matching pair a different color. If you send us your completed paper, we will mail you a free gift certificate!



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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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), 434 Spring Street Ext., Mars, PA 16046 (724)776-0161, fax (724)776-0166, sri@streamrestorationinc.org, www.srwc.org. Jan. distribution: 1221 copies

Watershed Plan Recognition — Very Rewarding!!!!

It was a pleasant surprise to discover one of **Texas A&M University's** examples of an EPA Watershed Plan is none other than the **Blacks Creek Restoration Plan** which was designed by **Cliff Denholm** and **Shaun Busler** of Stream Restoration Inc. and the SRWC! Congratulations to Cliff and Shaun for a job well done! The university's link to Cliff and Shaun's plan can be found at <http://watershedplanning.tamu.edu/resources.php>

In addition, the **US EPA, Office of Solid Waste and Emergency Response** recently added a "profile" of the SRWC's work remediating AMD in the Slippery Rock Creek Watershed to its Green Remediation website. This profile can be viewed at: http://www.cluin.org/greenremediation/tab_d.cfm The project, the **DeSale Restoration Area**, is also highlighted as an example of **Green Remediation best management practices for land and ecosystems!!!** It can be accessed at: http://www.cluin.org/greenremediation/subtab_b1_land.cfm The Green Remediation strategy employed by the SRWC at the DeSale project site was to utilize a series of natural gradient-driven settling ponds, vertical-flow ponds, and constructed wetlands to passively treat AMD. Check out the websites mentioned above for project site details and the positive results which have made a difference in the health and improvement of the watershed!!!



Student Symposium Photo

Beth Rihn, Shari Mastalski, and Joshua McGinnis (left to right) stand in front of their poster at the SRWC Student Symposium. In addition to being students at Slippery Rock University's Sustainable System program, Josh and Shari have assisted Stream Restoration Inc. in wetland and upland plantings at the Fox Run Restoration Area - Phase II, located in a nearby watershed.

THE CATALYST

SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

THIS MONTH'S MEETING: Thursday 1/8/09 at 7 pm at Jennings Environmental Education Center, pizza and pop provided. 12/11/08 meeting attendance: C. Cooper, C. Denholm, M. Dunn, D. Johnson, V. Kefeli

Student Symposium — Energizing to the SRWC!!!

The Slippery Rock Watershed Coalition Student Symposium was never better!!! Held on December 4, 2008 at the Andrew J. McKelvey Campus Center at Westminster College, the event began at 5:30 PM with a poster and networking session where people could meet, eat, and talk to poster presenters. Lots of yummy food was graciously provided by Westminster College. In addition to posters from organizations like the **Sierra Student Coalition** at Westminster College, **Wallace and Pancher**, the **Lawrence County Conservation District**, and **Stream Restoration Incorporated**, there were several academic research posters. The research posters were:

“The Effectiveness of a Passive Treatment System for a Western Pennsylvania Stream Affected by Acid Mine Drainage” by **Amber Okert, Westminster College**

“The Productivity of Passive Treatment Systems on Acid Mine Drainage of Slippery Rock Creek” by **Vanessa Kriley, Westminster College**

“Teratogenic Effects of Ethylene Glycol and 5-methyl-1H-benzotriazole on Zebrafish Central Nervous System Development” by **Michael Romeo, Westminster College**

“Research related to Fabricated Soils and Landscape Rehabilitation” by **Joshua McGinnis, Shari Mastalski, and Beth Rihn, Slippery Rock University**

Following the poster session, chemistry professor **Dr. Helen Boylan** provided a welcome and introduction to the event. **Dr. David Swerdlow**, an English professor, provided some interesting stories and readings related to the environment while student **Lynn Elliot** read her original poem entitled “**Minnows**”, which was inspired by a recent fish kill that occurred in a stream running through the campus of Westminster College. Just prior to the student presentations, SRWC participant **Cliff Denholm** provided a short reflection on the importance of student involvement in research and field study. Six student presentations from three schools were given:

“Leaves of Poplar and Willow Under Composting in Fabricated Soil” by **Joshua McGinnis, Slippery Rock Univ.**

“Current Performance of a Passive Wetland Treating Acid Mine Drainage from Underground Mine Seals at Moraine State Park, Butler County, Pennsylvania” by **Jay Winter, California University of Pennsylvania**

“Production of Fast Growing Woody Plant Material for Mining Soil Regeneration, Bio-regenerative Architecture, and Energy Production” by **Shari Mastalski, Slippery Rock University**

“Investigating a Local Fish Kill” by **Fred Romeo, Westminster College**

“Chestnut Plants on Salicaceae Plantation with Fabricated Soil” by **Beth Rihn, Slippery Rock University**

“Sanitary Sewer Overflows” by **Steve Yamnitsky, Slippery Rock University**

We would thank to all of the students (and their professors) for their hard work and dedication as well as the audience members who took the time out of their busy schedules to support the students. We look forward to another great symposium next year!!!!!!





Students from **Westminster College's Advanced Chemistry** course pose with their professor **Dr. Helen Boylan** (center front) for a picture after their presentations at the November 2008 SRWC meeting.

Construction of the BC 16 Remediation Project Nears Completion!!!!

The Blacks Creek Watershed has been impacted by oil and coal production for over a century. The Bullion-Clintonville Oil Field, located in the northern portion of the watershed, once contained hundreds, if not thousands, of oils wells. In addition, mine discharges severely degrade the stream with high levels of iron, aluminum, manganese, and acidity.

The BC16 discharge emanates as an upwelling from an old, compromised, oil well that is now providing a conduit for contaminated ground water to reach the surface. The most likely source is from an old upgradient surface mine and coal refuse disposal site. BC16 is characterized as an alkaline iron and manganese discharge and was identified in the **Blacks Creek Restoration Plan** as having the **second highest metal loading** in the Blacks Creek watershed and given a restoration priority ranking of #2.

The BC 16 passive treatment system is being constructed by **Quality Aggregates Inc.** and consists of a naturally-functioning aerobic wetland and a horizontal flow limestone bed. Construction began 11/2008 and will finish in the next few weeks. A father/son team of **Drew Fuchs** and **Wayne Fuchs**, along with **Mason Frederick** and **Tom "Buck" Ealy**, have braved the cold and rain and snow to construct the passive system. Thank you for your dedication!!!!!!!!!!!!

Thanks to all of the partners for making this project a reality!!!

- **PA DEP, Bureau of Watershed Management (US EPA 319 program)**
- **PA DEP, Knox DMO**
- **Dennis Tiche (landowner)**
- **BioMost, Inc.**
- **Quality Aggregates Inc.**
- **Stream Restoration Incorporated**

Once operational, the passive system is expected to prevent **17,500 lbs/year (~9 tons/year) of iron** and **5,100 lbs/year (~2.5 tons/year) of manganese** from entering Blacks Creek!

