

THE CATALYST

SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

NEXT MEETING: 7 pm on 12/10/15 at Jennings Environmental Education Center, pizza and pop provided.
11/12/15 meeting attendance: C. Denholm, M. Dunn, V. Kefeli, B. Kuban, W. Taylor, F. VanAtta

Students & Presenters Enjoy School Visits

Students in **Mrs. Melissa Busler's 7th grade Earth Science Class** were treated to not one, but two guest speakers in the month of November, thanks to Slippery Rock Watershed Coalition participants! Students had been studying a unit on energy resources and learning about fossil fuels, renewable energy sources, the importance of conservation, the 3 R's (Reduce, Reuse, and Recycle), resource extraction and availability, and more. **Dan Guy** (pictured at right), a geologist at Stream Restoration Incorporated, visited **St. Luke Lutheran School** in Cabot on November 20th. Dan was asked to speak about his experiences when he worked for several years in the natural gas industry. Dan did a great job explaining the details of the process of fracking, which is growing very common in Butler County. The students had many great questions about fracking for Dan, who was more than happy to share his knowledge.



On November 13th, biologist **Shaun Busler** (bottom photo) also visited the 7th grade students. Shaun, of Stream Restoration Incorporated, focused his presentation on abandoned mine drainage. He explained the history of AMD in Pennsylvania, the extent of the problems, and about active and passive treatment systems. Shaun explained how different metal particulates can be generally identified by the color of the mine water. In a fun demonstration, he added bleach to a beaker containing AMD, which was crystal clear. The bleach raised the pH of the water so that the dissolved metals formed particulates, resulting in the water turning first orange from the iron, then when more bleach was added, black from the manganese. Shaun's PowerPoint showed students photos of AMD-impacted water all over the world, then focused on the Slippery Rock Creek Watershed. He reviewed the basic set-up of a passive treatment system including a schematic of a Vertical

Flow Pond, and showed how such systems successfully treat billions of gallons of water in the watershed each year. He shared information about the work of the Slippery Rock Watershed Coalition and also about Clean Creek Products. The students enjoyed seeing how the manganese and iron collected from the passive treatment systems are being used in glazes for pottery, ornaments, and other ceramic collectibles.

Thank you, Dan and Shaun, for taking time to visit St. Luke's and adding some fun presentations on real-life science work experiences to the 7th graders' classes!



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A not only yummy but also artistically-expressive cake celebrating the 20th anniversary of the Slippery Rock Watershed Coalition was enjoyed by all!!

20 Years for the SRWC... So Much to Celebrate!

So many wonderful relationships have developed over the past two decades with the amazing and generous SRWC partners! Our special celebration in October gave us a chance both to reminisce with our partners about the rewarding accomplishments in the Slippery Rock Creek Watershed and to plan for future efforts.

We thoroughly enjoyed reflecting on the installation of the earliest passive treatment systems including the highly-regarded Jennings system with **Tim Gillen**, PG, PADEP, Knox DMO; **Charlie Cooper**, CDS Associates; and **Bob Hedin & George Watzlaf** formerly with the US Bureau of Mines and currently with Hedin Environmental, and having a chance to talk with **Eli Heferle**, biologist, PADEP, Knox DMO, who has been actively involved in evaluating the watershed streams and providing much-needed project guidance.

John Ramos and **Yan Sheykhet**, currently with Allegheny Mineral and formerly with Quality Aggregates, were also there to enjoy the event. Their generous support has been greatly appreciated not only in the recent streambank stabilization efforts but also in the long-term passive treatment system installations.

Fred Johnson, formerly with Amerikohl Mining, was also on hand. Fred was in charge of the construction of the three De Sale passive systems, which not only have substantially improved Seaton Creek but also have been used for research by the Smithsonian Institution, Washington, DC and by Penn State University.

We were also glad to see landowners **Denny Tiche** and **Linda Furst** at the Celebration. It goes without saying, that the great improvements in the water quality of Blacks Creek would not have been realized without their support. We cannot express our appreciation adequately to all of our landowners.

How wonderful to see **John Dawes**, Executive Director, Foundation for PA Watersheds. His long-term partnership efforts not only with the SRWC but also with many watershed groups have been unwavering.

Another long-standing supporter of the SRWC and other PA watershed groups is the Western PA Coalition for Abandoned Mine Drainage, which was represented by **Anne Daymut**. Even though there is still work to be done state-wide, we enjoyed discussing both the successes in the Slippery Rock Creek Watershed and throughout the bituminous coalfields of western PA.

We also appreciate **Sheryl Kelly**, Recycling & Waste Mgt. Coordinator for Butler County, taking time out of her busy schedule to attend the event. Many of you have probably seen information received from Sheryl in *The Catalyst* regarding recycling efforts in the watershed. Sheryl also generously donated time to be on the Advisory Council of the 2011 Slippery Rock Creek Watershed Conservation Plan.

THANKS!!!!



The KIDS Catalyst

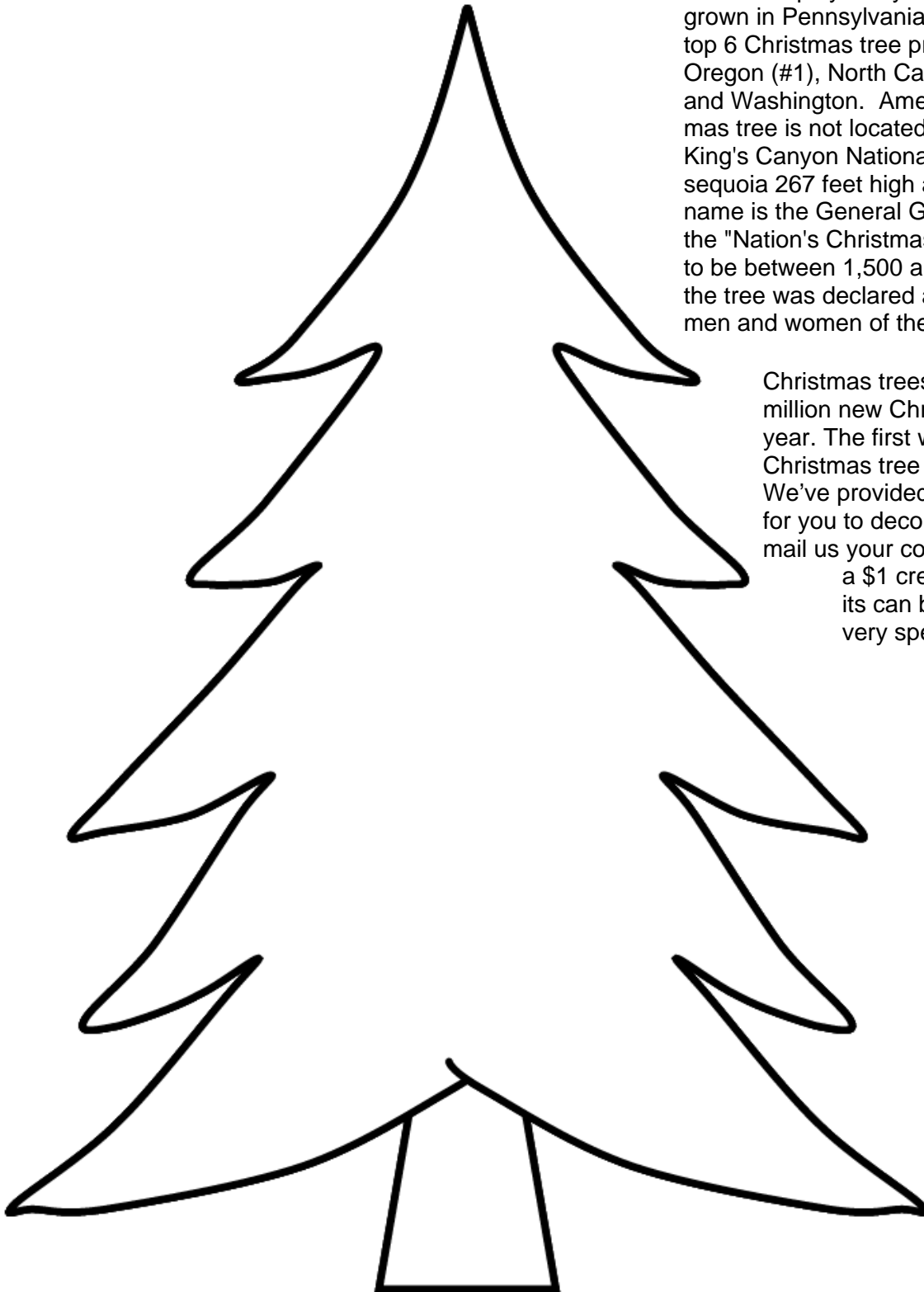
SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



Christmas Tree Trivia

Did you know the over 18-foot tall Fraser fir Christmas tree on display this year in the White House was grown in Pennsylvania?! Pennsylvania is one of the top 6 Christmas tree producing states. The others are Oregon (#1), North Carolina, Michigan, Wisconsin, and Washington. America's official national Christmas tree is not located at the White House, but at King's Canyon National Park in California. It is a giant sequoia 267 feet high and 40 feet across its base. Its name is the General Grant Tree, and was designated the "Nation's Christmas Tree" in 1925. It is estimated to be between 1,500 and 2,000 years old. In 1956, the tree was declared a national shrine to honor the men and women of the U.S. military.

Christmas trees are grown in all 50 states. 73 million new Christmas trees will be planted this year. The first written record of a decorated Christmas tree was in Riga, Latvia in 1510. We've provided a bare Christmas tree outline for you to decorate any way you wish! If you mail us your completed paper, we'll send you a \$1 credit for Amazon.com. The credits can be saved up to buy something very special! Merry Christmas!



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Slippery Rock Watershed Coalition c/o Stream Restoration Incorporated
 A PA Non-Profit Organization
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McIntire Site Receives Upgrade

Thanks to the **Pennsylvania Department of Community and Economic Development**, the SRWC received a much-appreciated **Renaissance Grant** to fund needed maintenance on its McIntire Passive Treatment System. Located in Marion Township, Butler County, the system treats degraded mine water before entering Blacks Creek, an important tributary in the headwaters of Slippery Rock Creek. This innovative passive treatment system was constructed at the former mine site in 2011 to treat a highly-acidic discharge with high concentrations of iron, aluminum, and manganese. This discharge has one of the worst water qualities in the entire 408 - square mile Slippery Rock Creek Watershed!!!

The system begins by conveying water from an old treatment basin used when the mine was in operation. The mine drainage flows in an Oxidation Precipitation Channel or TIF which facilitates the removal of iron at a low pH and is then conveyed to an Auto-Flushing Vertical Flow Pond, settling pond, Jennings-type Vertical Flow Pond, a series of three treatment wetlands, and then to two Horizontal Flow Limestone Beds. As the wetlands were built mostly in mine spoil, seepage into the ground was occurring in some places.

By summer's end, the treatment wetlands had been lined with a Calcium Silicate Aggregate (CSA) material supplied by a long-time supporter of the Slippery Rock Watershed Coalition, **Harsco Minerals**. Upon installation, the **Mineral CSA** becomes nearly impermeable, essentially preventing leakage. All three wetlands were lined with Mineral CSA, thanks to the DCED Renaissance grant.



Placement of Mineral CSA (above) before replacing the vegetation and soil material. Maintenance began August 17.

The system has been treating water for nearly **five (!) years** and the site has been restored to a viable wildlife habitat currently utilized by the **Oakridge Hunting Dog Club**.

Currently, over 11.7 million gallons of water per year are treated by the system, with over 604,000 pounds per year of acidity removed. Over 64,000 pounds of manganese per year are removed by the system, along with 45,000 pounds of aluminum and almost 74,000 pounds of iron. In addition, the quality of Blacks Creek has been significantly improved.