

Morning Session (Moderator: Janice Belgredan)

- 8:00 val/Registration (coffee & donuts)
- 8:45 Greetings
David Johnson, Center Coordinator
JoAnn Albert, Env. Ed. Coordinator
- 8:50 Overview of Slippy Rock Watershed Coalition
Margaret H. Dunn, Stream Restoration Incorporated
- 9:00 Special Guest Speaker
George Watzlaf, US Department of Energy, Federal Energy Technology Center "Passive Treatment Technology"
- 9:15 "Watershed Monitoring Update: Slippy Rock Creek Headwaters" **Steve Stefko**, Environmental Science student, SRU (Professor: Dr. Dean DeNicola, Dept. of Biology)
- 9:30 "Plant Survey of Wetland Constructed with Biosolids"
Michael Enright, Biology Student, Grove City College (Professor: Dr. Fred Brenner, Dept. of Biology)
- 9:45 Break (High School Students to Participate in Field Program)
- 10:00 "Plant Roots as Producers of Sanitary Substances with Allelopathic and Antibiotic Properties"
Pat Dimpfl, Master of Science, Sustainable Systems, SRU
- 10:15 "Allelopathogens from the Leaves of Woody Plants"
Dan McGuirk, Master of Science, Sustainable Systems, SRU (Professor: Dr. Valentine Keffel)
- 10:30 "Preliminary Investigation of Influent Distribution in a Vertical Flow System" **Darcy Peart and Charles D. Cooper**, volunteer and home-school programs conducted at Jennings
- 10:45 "Spirit of Girl Scouts Award"
Presenter: **Annette Cholock**, Membership Specialist, Keystone Tall Tree Girl Scout Council.
- 10:50 1998 SRWC Appreciation Award
Presenter: **Bob Zick**, Chester Engineers
Macoskey Center, Slippy Rock University
Dr. Leona Paracenzo, Interim Dean, **Mary Ann King**, Assistant Dean, College of Health and Human Services
- 10:55 "Coupling Human Generated Elements with Biospherical Cycling" **Anthony Liguori**, Master of Science, Sustainable Systems, SRU
- 11:10 "Chemistry of the Full-Scale Vertical Flow System at Jennings"
Brian Lapinski, Environmental Science student, SRU (Professor: Dr. Michael Stapleton, Dept. of Env. Geosciences)
- 11:25 "Bacteriological Activity in the Pilot-Scale Vertical Flow Wetland at Jennings" **Carol Tipple**, Biology student, Grove City College (Professor: Dr. Fred Brenner, Dept. of Biology)
- 11:40 "Overview of Seaton Creek Monitoring and Research at Jennings" **Dr. Fred Brenner**, Professor of Biology, Grove City College

11:50 Lunch/Posters/Video

12:00 High School Students return for Lunch/Posters/Video

Afternoon Session: 12:30 - 12:45pm

Keynote Speaker: "How Do We Grow Green"
Robert Dolence, Deputy Secretary for Mineral Resources Management, PA Department of Environmental Protection

12:45-3:30 Field Tour of Selected Restoration Projects
(Vans available for transportation.)

(1) Seaton Creek, Erico Bridge: Future restoration site. Area. Special Presentation:

"Results to Date: Seaton Creek Monitoring"
Kevin Staffin and Chad Melious, Biology Students (Prof.: Dr. Fred Brenner, Biol. Dept., Grove City College)
Cherricky Landowner Reclamation: One of largest landowner reclamation sites in western PA.

Abandoned strip mine reclaimed utilizing coal ash in the backfill to aid in the abatement of severe acid mine drainage.

[1997 tour - before; 1998 tour - during; 1999 tour - after]
(Amerikohl Mining, Butler Co. Conservation Dist., PADEP)

(3)

SR 101A: Recently completed 900-ton Anoxic Limestone Drain with a settling pond and two aerobic wetland cells. (Slippy Rock Univ., Hedin Environmental, C D S Associates, Jesteadt Excavating, BioMost, Inc., Stream Restoration Inc., PA DEP, Knox DMO, PA Game Comm., Quality Aggregates, Amerikohl Mining)

One of the SRU vans will be returning to Jennings after Stop 3. You may choose to return or continue to the next Stop.

(4)

Ferris Complex: Four vertical flow passive systems treat four discharges with a combined flow of over 200 gpm. (Kerry Coal Co., PA Game Comm., Penns Corner Charitable Trust, US EPA, PADEP, NRCS, BCCD, WPCAMR)

Guides:

Roger Bowman & Tim Gillen, PA DEP, Knox DMO
Robert S. Hedin, Ph.D. Hedin Environmental
Jerry Jesteadt, Jesteadt Excavating
Timothy P. Danehy, EPI, Stream Restoration Incorporated

THE CATALYST

SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

Next meeting: Thursday 12/10/98 SRU Vincent Science Hall (Rm. 105 or other room on first floor). Topics: 1999 Annual Symposium and related events. Prior meeting (11/12/98) attendees: T. Danehy, D. DeNicola, M. Riddell, M. Dunn, D. Lamperski, F. Brenner, J. Ankrom, R. Bran, T. Gillen, K. Duncan, M. Clark, K. Peart, C. Cooper, J. Belgredan, J. Clark, R. Fodor.



10/12/98 WETLANDS PLANTING BY SLIPPERY ROCK UNIVERSITY STUDENTS

The above photo shows wetland cell # 1 at the recently completed SR101A passive treatment system being planted by Dr. Jerry Chmielewski's, SRU Dept. of Biology, Aquatic Plants class. This opportunity provided the students with an "up close and hands-on" look at several technologies being applied to treat acid mine drainage. A brief explanation of the how the system works and why it was installed was provided by Margaret Dunn, Stream Restoration Inc. and Tim Danehy, BioMost, Inc. These interested and excited students "dug in to help out":

B. Phillippi, A. Cantanese, H. Kempki, M. Klink, S. Stefko, R. Carroll, S. Kzeminski, A. Ciliberto, L. Ferguson, H. Kaminsky, R. Kohnke, H. Doyle, S. Santiapillai, R. Cline, A. Kinney, D. Young, T. Nolan.

Also, this same class has completed a study (10/26/98) on the demonstration wetland at the Jennings Env. Education Center which will help to determine the effectiveness of using biosolids in the construction of treatment wetlands. Thank you Dr. Chmielewski and Class!!

DR. FRED BRENNER ELECTED AS A FELLOW OF OHIO ACADEMY OF SCIENCE

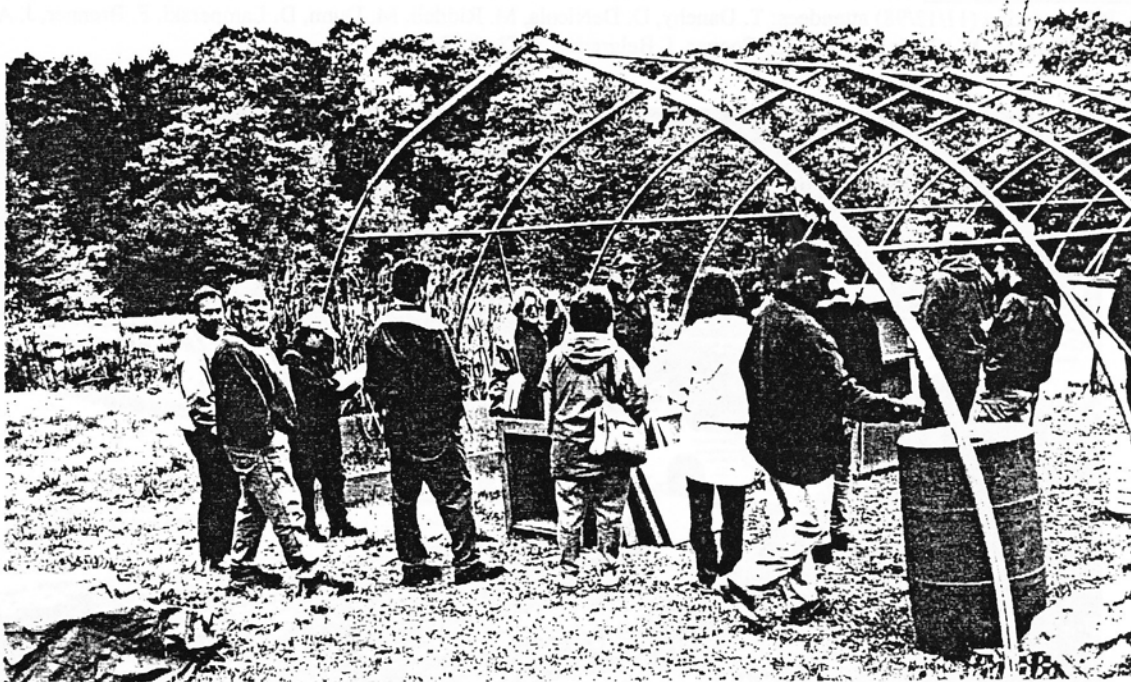
CONGRATULATIONS to Dr. Brenner for his recent election as a Fellow of Ohio Academy of Science. Dr. Brenner is an extremely active participant in the Coalition and has an extensive list of honors and achievements which include (but certainly not limited to) the following: PA Acad. of Science Lifetime Achievement Award, President-Elect of the National Assoc. of Academies of Science, VP of the Beta Beta Beta Biological Honorary, and an editor for the American Society for Surface Mining and Reclamation. He has authored over 200 scientific papers and edited 8 books. Congrats Dr. Brenner

SCRUBGRASS GENERATING RECEIVES GOVERNOR'S AWARD FOR ENV. EXCELLENCE

Scrubgrass Generating Co., L.P., is a winner of the 1998 Governor's Award for Environmental Excellence for Pollution Prevention. Scrubgrass uses the most advanced technology for burning waste coal and generates alkaline ash which is used to reclaim abandoned mines and prevent acid mine drainage. Through the efforts of Scrubgrass over 509 acres of abandoned mine lands have been reclaimed in Allegheny, Armstrong, Butler, and Clearfield Counties. About 70 of these acres are in the Slippery Rock Creek Headwaters area. Congratulations and THANKS to Scrubgrass for their efforts.

SRU's DR. DEAN DeNICOLA PRESENTS PAPERS IN IRELAND AND UNITED KINGDOM

His past August Dr. Dean DeNicola, Slippery Rock University, Dept. of Biology, presented two papers which document the changes in the ecosystem of the Slippery Rock Creek headwaters due to the restoration efforts. The first paper was presented at The International Limnological Congress in Dublin, Ireland. The second at a conference on Highly Acidic Environments in Durham, UK. Thanks to Dr. Dean for spreading the word about our efforts!!



10/14/98 Tour of Section 319 Projects at the Jennings Pilot Scale Systems

US EPA & PA DEP TOUR RECENTLY COMPLETED SECTION 319 PROJECTS

On 10/14/98, members of the US EPA and PA DEP joined Coalition participants on a tour of two passive treatment systems recently completed under the EPA Section 319 Funding Program. The tour was lead by Robert Hedin, Hedin Environmental and Margaret Dunn and Tim Danehy, Stream Restoration Inc.

The tour started at the Jennings Environmental Education Center which features a full-scale demonstration vertical flow system followed by wetlands and a settling pond. The Jennings facility also provides the opportunity for on-going development of passive treatment technology. The pilot-scale systems and student participation was explained by Dr. Fred Brenner from Grove City College. The design engineer Charles Cooper, PE, C D S Assoc., Inc., described the construction of the full-scale system.

The next stop on the tour was the SR101A site. This system uses a 900-ton Anoxic Limestone Drain to treat a 30 gallon per minute acid discharge containing approx. 70 ppm of iron. The ALD is followed by a settling pond and two constructed wetland cells which collect the iron prior to discharging into the headwaters of Slippery Rock Creek. A big **THANKS** is extended to all who were involved:

R. Wagener, J. Holden, R. Coleman, E. Ammentorp, J. Earle, G. Price, M. Sherman, S Blackman, J. Mirza, L. Odenthal, F. Brenner, T. Jageman, F. Koch, M. Dunn, T. Danehy, R. Hedin.

Thanks also to Jerry Jesteadt and Dave Macurak, Jesteadt Excavating, for providing the excavation services for both systems.

FEATURE ARTICLE

“JENNINGS: LEADING THE WAY WITH CUTTING-EDGE TECNOLOGY”

An article published in the Nov. 1998 edition of the DCNR's publication RESOURCE is attached. Special thanks goes out to Josh First for his contribution of this excellent and exciting article.

Extra-special thanks is extended to the Jennings Staff and particularly Cindy Shirley, Gary Jenkins and Ray Markle whose help at the Celebration made everything run smoothly. We could not have done it with out you. **THANKS!!!!**

Thanks to the Slippery Rock Watershed Association for their support.

For more information contact:

Slippery Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), 338 Glen Eden Road, Rochester PA 15074, (724)774-2813, fax (724)774-1219

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Resource

A publication of the Pennsylvania Department of Conservation and Natural Resources

Jennings: leading the way with cutting-edge technology

Dozens of environmental partners participated in a celebration at Jennings Environmental Education Center on October 9 near Butler to recognize a coalition and volunteer effort that is gaining international standing.

According to engineer and volunteer leader Margaret Dunn, Jennings' Director, David Johnson, has assembled at the center both the greatest number, and variety, of passive treatment systems for acid mine drainage at any single site in the world, with the possible exception of one in England. The center also maintains the longest record of chemical and hydrological data of any such system in the country.

Much of the recent advances in passive treatment at the center are due to large EPA "319" grants, which allowed the coalition to construct a series of field test models that demonstrated the accuracy of certain treatment theories, and eventually the full-scale treatment projects constructed to test them.

The effort to control acid mine drainage at Jennings began in 1985, when the seal on a local abandoned mine was destroyed by a storm and spewed severely polluted water into the center's watershed. Since then, a highly motivated partnership and volunteer effort with local companies and individuals has resulted in the successful coalition (which in 1993 became the Slippery Rock Watershed Coalition) cel-

ebrated at the gathering at Jennings in October.

"We are here today to recognize the efforts and achievements of a partnership of government agencies and the private sector," said DCNR Secretary John Oliver at the celebration. "This project is an outstanding example of multiple partners coming together to solve not only a state park problem, but a larger Commonwealth problem as well."

DEP Deputy Secretary Robert Dolence also attended the celebration to talk about acid mine drainage problems in Pennsylvania.

"Acid mine drainage pollutes 2,400 miles of Pennsylvania's streams, making it one of the single largest water pollutants in the Commonwealth. DEP spends more than \$31 million annually to clean up land and water polluted by past coal mining," Mr. Dolence said.

In fact, there are over 220,000 acres of abandoned coal mine land in Pennsylvania, an unfortunate blight on a state known for its spectacular scenery and forests.

There is, however, a glimmer of hope for these lands. According to David Aloe of Aloe Mining, a partner in the coalition, re-mining abandoned coal mines is profitable and environmentally beneficial as well, and is slowly gaining in popularity. Deputy Secretary Dolence emphasized DEP's recent efforts to grant re-mining permits that include requirements for site remediation by the mining

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company; to date these efforts have been about 95 percent successful, resulting in reduced pollution, thousands of acres of reclaimed land, and a savings to the Commonwealth of millions of dollars in remediation costs.

Recognized at the celebration and tour were dozens of individual volunteers from the local community and the partners in the project at Jennings, including Allegheny Mineral Corporation; Amerikohl Mining; ARMCO; Chester Engineers; CDS Associates; Hedin Environmental; Jesteadt Excavation; Quality Aggregates, Inc.; Scrubgrass Generating, Inc.; Shalston Trucking; Stream Restoration Inc.; fellow government agencies including the U.S. Environmental Protection Agency; the U.S. Department of Energy; and both the Pennsylvania Game and the Fish and Boat commissions. Grove City College and Slippery Rock University students, and a local Girl Scout troop were also recognized.

Also noted at the celebration were the other factors contributing to Jennings' success as an environmental center: easy access, classrooms, parking, conference facilities and an educational program of services, displays and materials available to students of all grade levels.

DCNR has three other environmental education centers—King's Gap in Cumberland County, Nolde Forest in Berks County, and Jacobsburg in Northampton County. DCNR's well-established environmental education program, while historically based at the four centers and 52 other state parks, is now expanding to include all of the DCNR field staff.

For more information about the Jennings Environmental Education Center, call (724) 794-6011, e-mail the center directly at jennings.sp@a1.dcnr.state.pa.us.

Contributed by Josh First, DCNR's director of environmental education & information. (717) 772-9104.

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Volunteers recognized for conservation efforts

Recognizing the importance of volunteers to Pennsylvania's state parks and state forests, DCNR recently presented the first-ever Conservation Volunteer of the Year Awards to a group and individual.

Award recipients are selected on volunteer hours and efforts they have contributed to one or more of

Pennsylvania's state parks and forests.

This year's Conservation Volunteers of the Year, the Schofield Ford Bridge Committee and Ralph Seeley, were presented their awards at two different ceremonies.

The Schofield Ford Bridge Committee, who gave physically and financially to restore the Schofield Ford Covered

Bridge, received the group award from DCNR Executive Deputy Secretary John Plonski at a ceremony in Tyler State Park. The Schofield Ford Bridge Committee formed and began pursuing ways to raise money to restore the bridge, which was burned down in a 1991 fire. The group organized raffles, bake sales, bike-athons and horse shows, and set up collection cans in the local community. The group also contributed thousands of hours to rebuilding the bridge.

"This committee is a perfect example of how volunteer partnerships can assist state government in making this state a better place to live," Mr. Plonski said. "The Schofield Ford Bridge Committee came together to keep a historic covered bridge from being lost forever. Our state parks and forests contribute to Pennsylvania's quality of life and play a significant role in keeping our state beautiful. It is evident that these volunteers care about protecting and enhancing our beautiful natural resources."



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resource

THE CATALYST

Slippery Rock Watershed Coalition Monthly Activities Update

Next meeting: **Thursday, 11/12/98, 7:00 PM**, SRU Vincent Science Hall (Rm. 105 or other room on first floor). Topics: partnering, planned projects; Prior meeting held at Jennings Env. Ed. Ctr. & SRU(10/8/98) attendees: D. DeNicola, C. Cooper, F. Brenner, M. Dunn, D. Johnson, R. Beran, J. Albert, R. Bowman, T. Danehy, G. Jenkins, R. Markle, W. Taylor, C. Vild, W. Wasser, C. Shirley

"CELEBRATING ENVIRONMENTAL PARTNERSHIPS"

JENNINGS WATER QUALITY IMPROVEMENT COALITION
DEDICATION OF THE FULL-SCALE VERTICAL FLOW SYSTEM
JENNINGS ENVIRONMENTAL EDUCATION CENTER

10/9/98



As part of the field tour, Girl Scouts **Mary Jo Clark** and **Darcy Peart**, two very talented and poised volunteers, discuss their "hands-on" participation in the construction and development of the passive treatment systems at Jennings.

The mood was truly that of celebration!!! This was a wonderful opportunity to remember the effort of the energetic group, of all ages and backgrounds, that combined their talents to find a solution to one of our state's most severe problems, acidic drainage from abandoned coal mines.

Posters filled the display area at the Center which encouraged conversation and the exchange of ideas from the moment people began to arrive. Roger Bowman and Tim Gillen, Knox District Mining Office, had several posters and a video which documented many of the restoration projects in the Slippery Rock Watershed headwaters. The Girl Scouts with leaders, Kitty Peart and JoAnn Clark, had a display illustrating their efforts through mounted photos, a video, and a 3D computer presentation. The Jennings Water Quality Improvement and Slippery Rock Watershed Coalitions' displays with before/during/after photos of selected systems with before/after water quality data, illustrated the many partnership activities.

Dave Johnson, Center Manager, welcomed the group of about 70 people to the event and provided a clear insight on the need for environmentally-friendly ways to deal with pollution and the value of our sometimes fragile environment. The Keynote Speaker, John Oliver, Secretary, PA Dept. of Conservation and Natural Resources, expanded on these remarks and on the successful efforts of this partnership and the unique environmental education program at Jennings. The Guest Speaker, Robert Dolence, Deputy Secretary, Mineral Resources Management, PA Dept. of Environmental Protection, discussed how the program at Jennings applies to watershed restoration and the successful efforts in the Slippery Rock Creek headwaters and commented on how this could be used as a model for other watersheds. Both John Oliver and Bob Dolence were extremely gracious throughout the event. Everyone was clamoring to meet them to discuss environmental issues and to express appreciation for their interest in the Jennings projects.

A walking tour followed and everyone had the opportunity to see "first hand" the passive systems and talk to participants stationed at points of interest:

<u>Speakers</u>	<u>Topics</u>
Dr. Dean DeNicola, Biologist, SRU	water, streambed sediment, and aquatic life monitoring
Javed Mirza, Dist. Mining Mgr., Knox DMO	DEP role at Jennings and in watershed effort
Dr. Robert Hedin, Ecologist, Hedin Env., Inc.	conceptual design of vertical flow system and ALD
Dr. Michael Stapleton, Geochemist, SRU	student research associated with vertical flow system
Charles Cooper; PE, PLS, CDS Assoc., Inc.	engineering design of vertical flow system
Dr. Fred Brenner, Biologist, Grove City College	student research with pilot-scale demonstration systems
Mary Jo Clark & Darcy Peart, volunteers	Girl Scout and homeschool "learn-work" activities
Timothy Danehy, EPI, BioMost, Inc.	biosolids and pond fines in wetland construction
Margaret Dunn, RPG, Stream Restoration, Inc.	Jennings Water Quality Improvement & Slippery Rock Watershed Coalitions

Will Taylor, Bill Wasser, Candy Vild, and Joann Albert conducted the two tour groups and provided a comprehensive view of the various activities; a tremendous effort on their part!!

George Watzlaf, Research Engineer, US Dept. of Energy, made an extra special effort to attend the event and report on the national significance of the data from the anoxic limestone drain installed at Jennings.

After a "hardy" lunch, Girl Scouts Darcy Peart, Mary Jo Clark, and Holly Wade (Tall Tree Girl Scout Council) each received a "Certificate of Appreciation" for their contributions to the restoration effort from Secretary John Oliver. Deborah Schrechengost also acknowledged the unwavering commitment of Margaret Dunn with a Senate Proclamation sponsored by Senator Mary Jo White. Many hours were donated by numerous people to make these awards possible. Thanks to everyone for showing their support!!!! This means alot!

As a memento, imprinted ceramic mugs were given to all to attended, compliments of Stream Restoration Incorporated through private donations.

Thanks, thanks, thanks to private industry including ARMCO, QUALITY AGGREGATES, CHESTER ENGINEERS, HARDING LAWSON ASSOCIATES, and SCRUBGRASS GENERATING for participating in the event with a special thanks to AMERIKOHL MINING, INC. for providing the lunch!!!

Thanks again to the PA Dept. of Environmental Protection, Bureau of Watershed Conservation, for providing the funding for the Demonstration Vertical Flow System at Jennings!!!

The attached copy (See final page.) of a well-written article by Lynne Glover, Staff Writer, Pittsburgh Tribune-Review was published on 10/11/98. While attending the event, Ms. Glover interviewed many of the participants with the result being a very insightful article. Her time and talent are appreciated. Margaret Dunn quipped about the Great Photograph taken by Joe Appel, Staff Photographer, of two very "un-photogenic" people.

GIRL SCOUTS WORK ON TRAIL



October 18th:

Girl Scouts, Mary Jo Clark, Holly Wade and JoAnn Clark along with Charlie Cooper began work on a trail leading to an AMD site in Boyers this Sunday. After fighting their way through thickets trying to find the ponds to be sampled, they flagged up where the trail would be built. The trailhead was established and the construction started by clearing saplings, branches and sawing larger logs to clear the pathway.

October 25th:

The Scouts continue to blaze the trail. The Cadette Scouts helped to remove any small trees, logs and brambles ahead of the trail, while the Junior Scouts raked, hoed, and flattened out the trail behind them. Those helping were: Troop 535 - Annette and Andrea Schuster, Kristen Grossman, Michelle Hughes, Jessica Truesdale along with Andy, Jim and Joe Schuster; Troop 750 - Mary Jo and JoAnn Clark, Melanie Foreman, Trixie Heck; last but not least Charlie Cooper.

November 1st:

No more beating around the bush; (The thorn bush that is) we've cut it down and finished clearing the way. The trail is done, complete with stone stairs so the slope is not a slide. Thanks to Debbie and Raechul Bowser of Troop 653; Karen and Erica Olexsak, Carrie Cubbage of Troop 609; Mary Jo and JoAnn Clark of Troop 750; and Charlie Cooper.

The Scouts hope this trail will help the Grove City and Slippery Rock students, as well as Quality Aggregates in future work at the site. We all had a leaf raking, root pulling, saw pinching good time.

— Contributed by Mary Jo Clark, Troop 750

(WOW!! Be sure to read the above article.)

A lot more next month including: the 10/12/98 wetland planting by SRU students at the recently completed SR 101A passive treatment system and the 10/14/98 tour of EPA Section 319 projects.....

Thanks to The Slippery Rock Watershed Association for their support!

For more information contact:

Slippery Rock Watershed Coalition, c/o Stream Restoration Inc. (PA non-profit), 338 Glen Eden Road, Rochester, PA 15074, (724)774-2813, fax: (724)774-1219

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Joe Appel/Tribune-Review archive

CDS Associates' Margaret Dunn, a geologist, and Charlie Cooper, an engineer, were instrumental in the formation of the Jennings Water Quality Improvement Coalition. The coalition is successfully cleaning up acidic mine drainage using passive treatment systems in Slippery Rock, Butler County.

Eureka! Group successful in cleaning Butler County mine drainage

By Lynne Glover
STAFF WRITER

An all-natural "outdoor laboratory" that uses no chemicals or electricity is having success in treating the huge problem of acidic mine drainage.

This was cause for a celebration Friday, as about 70 people attended the dedication of the innovative, passive treatment system at the Jennings Environmental Education Center on Prospect Road in Slippery Rock, Butler County.

The special network of ponds and wetlands is removing pollutants from water that otherwise would flow into Slippery Rock Creek.

"We're celebrating a very significant event," said John Oliver, secretary of the state's Department of Conservation and Natural Resources. "Government agencies, corporations and nonprofit groups have all come together for a very worthy cause."

That goal is repairing the nearly 2,500 miles of Pennsylvania streams polluted by acidic drainage from long-abandoned mines.

Restoring the streams will cost billions of dollars, according to the Pennsylvania Department of Environmental Protection. The DEP

'The coalition of partnerships with different talents to solve these problems is not such a nice thing; it's an essential thing. It's the only way we are going to address these problems in the future.'

— David Johnson

CENTER MANAGER OF JENNINGS ENVIRONMENTAL EDUCATION CENTER

already spends \$31 million annually to clean up land and water polluted by past coal operations.

Solving the problem is beyond any single governmental or regulatory agency, and beyond individuals and private organizations, said David Johnson, center manager at Jennings.

"The coalition of partnerships coming together with different talents to solve these problems is not such a nice thing; it's an essential thing. It's the only way we are going to address these problems in the future," Johnson said.

Formed in 1994, the Jennings Water Quality Improvement Coalition includes as many as 60 "partners" — including local Girl Scouts. Academic institutions such as Slippery Rock University and Grove

City College have incorporated the outdoor lab into their environmental programs.

Here's how the system works: Water contaminated by the former Brydon Coal Mine near Slippery Rock flows into a pond 150 feet long by 50 feet wide, lined with 300 tons of mushroom compost and 380 tons of limestone.

The material screens and neutralizes much of the metal deposits from the water, which then flows into a wetlands.

Wetlands contain bacteria that act as a natural filtration system, and by the time the water reaches a settling pond it is clean enough to support life.

"When we first started, for the first time in my life I saw regulators, coal operators, people from all over

working together to solve this problem," said Margaret Dunn, whose firm, CDS Associates Inc. of Coraopolis, won a Three Rivers Environmental Award in May for its work at Jennings.

The Jennings site is the only one in the country that combines all the current passive treatment technologies. About seven acres of the 320-acre park are devoted to treating mine drainage.

Thanks to a "vertical flow system" engineered by CDS' Charlie Cooper, about 68 pounds of acidity is removed each day from the drainage site.

The pH level of the runoff before treatment is very low, only 3, indicating a strong acid content. That level is raised to a healthy 7 after passing through the ponds.

"It has restored four miles of Slippery Rock Creek," Dunn said. "Before, this section has not had bass in it. And now people are seeing some bass."

Robert Dolence, DEP deputy secretary, said the Jennings project will be used as a model when the state introduces "Reclaim PA," a future campaign to educate the public and encourage incentives to clean up the environment.

THE CATALYST

Slippery Rock Watershed Coalition Monthly Activities Update

Next meeting: **Thursday, 10/8/98, 7:00 PM**, SRU Vincent Science Hall (Rm. 105 or other room on first floor). Topics: 10/14/98 watershed & Jennings tour; Three Rivers Sportsmen's Club proj.; SR 101A & SR 109; Prior meeting (9/10/98) attendees: D. DeNicola, M. Stapleton, C. Cooper, F. Brenner, R. Zick, M. Dunn, S. Smith, J. Belgredan, D. Johnson

10/9/98 DEDICATION AT JENNINGS ENVIRONMENTAL EDUCATION CENTER

The event to be held from 10:00 am to 2:00 pm is to dedicate the innovative and educational passive treatment systems at Jennings and to celebrate the cooperative partnership of the Jennings Water Quality Improvement Coalition in their pursuit of solutions to acid mine drainage. John Oliver, Secretary, PA Dept. of Conservation & Natural Resources will deliver the Keynote Address and Robert Dolence, Deputy Secretary, PA Dept. of Environmental Protection, will be the Guest Speaker. A guided, walking tour will follow with brief explanations of the systems presented by participants in the Coalition. This promises to be a wonderful opportunity for celebration!!

The Jennings Water Quality Improvement Coalition will be preparing for the dedication on Thursday, 10/8/98 at the Center from 3:00 pm to 6:30 pm, which will include "last-minute" planning, installation of posters, and a "dry run" of the program. After installing their posters, video, etc., Girl Scouts from Troop 653 and their parents will enjoy a light meal around 5:30 pm, followed by a brief introduction to the activities of the Slippery Rock Watershed Coalition by Margaret Dunn.

DONATION RECEIVED FROM SLIPPERY ROCK WATERSHED ASSOCIATION

Prior to last month's Coalition meeting, William Mathews presented a donation to Margaret Dunn and Robert Zick to support the activities of the Slippery Rock Watershed Coalition. The Coalition wishes to thank the Association not only for their generosity but also their past efforts within the watershed. Our gratitude can not be adequately expressed!!!

GROVE CITY COLLEGE CONTINUES AMD RESEARCH AND WATERSHED STUDY

GCC student Charlene Wick spent most of her summer internship continuing the water monitoring at Jennings on the test tank vertical flow system (Project 10) and the "Test Bed Wetland" (Project 11). We wish to welcome back from summer break, Kim Kosick, Corry Gardner, and Shawn Busler (volunteering numerous hours last year!!!) and to thank them for their continued dedication and perseverance. Dr. Fred Brenner and his students have planned exciting projects to be conducted at Jennings and within the Slippery Rock headwaters this year!! More later ...

GIRL SCOUTS EXPAND PARTICIPATION IN RESTORATION EFFORTS AT JENNINGS

Girl Scouts in the Keystone Tall Tree Council and other volunteers continue to bring energy and enthusiasm to the acid mine drainage abatement effort at Jennings Environmental Education Center.

Kitty and Darcy Peart resumed their active volunteer role this past month as part of Darcy's home schooling program. Joe Hicks, who is also home schooled, has joined them in this "work-learn" program. On 9/14/98, Kitty and Darcy Peart and Charles Cooper (CDS Associates, Inc.) conducted the first in a planned series of pond dye tests in an effort to determine the efficiency and efficacy of influent AMD distribution through the Vertical Flow System (completed August 1997). On 9/21/98, Kitty, Darcy, Joe, and Charles removed and cleaned the iron from the Vertical Flow System "overdrain" and two days later a second dye test was performed. On 9/28/98, in preparation for the 10/9/98 Jennings Dedication and Celebration, Kitty, Darcy, Joe, and Charles assisted Gary Jenkins and Ray Markle of the Jennings staff

by spreading compost, seeding, and hand-mulching bare mine gob areas in the demonstration site.

Thirteen junior Girl Scouts of Troop 653, and other volunteers, led by Debbie Bowser of West Sunbury also helped in the preparation of the upcoming event by raking compost, seeding, and mulching on 10/1/98. The mulch was old, dusty, rather rotten, hay with jiggers(!), but the girls remained "chipper" and energetic. Many thanks to Troop 653!!!

Four girls of Girl Scout Troop 750 led by JoAnn Clark plan to spend one afternoon per month working at Jennings or on other project sites in the Slippery Rock Watershed headwaters, beginning on Tuesday, 10/6/98. JoAnn Clark and Charles Cooper completed the new two-day DCNR Watershed Education Program training course on 10/3/98. This program will (and has) provided ideas for watershed projects. New ideas are always welcomed!!!

THIS MONTH'S PHOTO



Pond/Wetland for recently completed vertical flow system at SR 109, PA Gamelands No. 95

Thanks to The Slippery Rock Watershed Association for their support!

For more information contact:

Slippery Rock Watershed Coalition, c/o Stream Restoration Inc. (PA non-profit), 338 Glen Eden Road, Rochester, PA 15074, (724)774-2813, fax: (724)774-1219

October 1998 distribution: 294 copies

THE CATALYST

Slippery Rock Watershed Coalition Monthly Activities Update

Next meeting: **Thursday, 6/11/98, 7:00 PM, Quality Aggregates Inc., Boyers Quarry.** Prior meeting: 5/14/98, Rm. 105, SRU Vincent Science Hall. Attendees: S. Smith, J. Belgredan, F. Brenner, T. Danehy, M. Dunn, D. DeNicola .

SRWC JUNE MEETING TO BE HELD IN BOYERS, PA

Please note that the June meeting will be convened at the Boyers Quarry of Quality Aggregates Inc. The entrance to the limestone quarry is located on the Harrisville Road less than one mile west of its intersection with State Route 308 in Boyers, PA. A new restoration project in the vicinity of the quarry will be discussed. Bring your constructive ideas and prepare to "brain storm"!!! WEAR FIELD CLOTHES !

DR. FRED BRENNER RECEIVES LIFE-TIME ACHIEVEMENT AWARD

Dr. Fred Brenner (Grove City College) received the 1998 Pennsylvania Academy of Sciences Life-Time Achievement Award. Dr. Brenner has contributed tirelessly and selflessly to the advancement of natural sciences in Pennsylvania. As many are aware, Dr. Brenner and his students are currently involved in the on-going study of the Seaton Creek ecosystem within the headwaters of the Slippery Rock Watershed and in the development and study of passive technology at Jennings Environmental Education Center. Congratulations and keep up the good work!!!!

PRESENTATION AT KEYSTONE TALL TREE GIRL SCOUT COUNCIL

On Saturday, April 25, 1998, JoAnn Clark and Kitty and Darcy Peart, with assistance from Charles Cooper, displayed an abbreviated version of the poster presentation shown at the 1998 SRWC Symposium. Many of the Council delegates and leadership expressed interest in the activities. This was very rewarding. The SRWC Symposium attendees remember in addition to the photographic depiction of the activities, the video of the construction activities at Jennings which was caringly edited by JoAnn Clark and the computer showing the as-built CAD drawing prepared by the Girl Scouts. Congratulations!! The Keystone Tall Tree Girl Scout Council serves almost 8000 girls and over 2000 adult volunteers from a 12 county area of Pennsylvania.

PA GAME COMMISSION REVIEW FIELD WATER QUALITY TESTING

On April 21, 1998, Pat Anderson, Keith Harbaugh, Gerald Bish, Jim Dennischer, Shane Hopelander, and Dale Hockenberry from the PA Game Commission met at PA Gamelands No. 95 headquarters to review not only the procedures for measurement of pH in the field but also the significance of the measurement. Prior to actual field testing, six unidentified, clear solutions were tested to determine pH by each individual using pH paper, HACH and LaMOTTE Test Kits. After comparing the measurements, the solutions were identified: distilled water, club soda, vinegar, bicarbonate of soda, net alkaline mine water, and net acid mine water. After lunch, several sites in PA Gamelands No. 95 were visited including an unstudied site. After noting that the pH varied at the site, the applicability of various passive treatment systems was discussed. Margaret Dunn (Stream Restoration Inc.) has commented as to the numerous good questions and interest of all involved. Thanks to all!!!

GROVE CITY COLLEGE RESEARCH ACTIVITIES AT JENNINGS CONTINUE

Grove City College students Aaron Kaiser and Nate Abramson completed construction of research Project 10 at Jennings, a compost-limestone vertical flow tank, and commenced monitoring as part of their course credit work at the college. Grove City College students Kim Kosick, Corry Gardner, and Shaun Busler volunteered their time, with help from Girl Scouts, JoAnn and MaryJo Clark to complete construction of research Project 11, a "test bed wetland", which is nearly ready for startup. Grove City College student Charlene Wick is to intern at the Jennings research site this summer and will continue the experiment setup and monitoring with planned assistance from Charles Cooper (C D S Associates, Inc.), Girl Scouts JoAnn and MaryJo Clark and possibly others. More on these and other research efforts later!!!

1998 SRWC GET-TOGETHER

The 4/15/98 community Get-Together was a great success!! Approximately 45 people attended this picnic-style gathering.

The downstairs meeting hall at the Epiphany Catholic Church in Boyers, PA was the (!!) perfect place to have this event. Good conversation was stimulated by the informative posters describing the Coalition's activities and the attractively arranged "you-can-eat" buffet. Many of the participants brought their children who after dinner enjoyed meeting each other and playing outside on the lawn.

(Over)

Before leaving, Robin Theuer added to the event's success by drawing names for the donated gifts which were enthusiastically received by the following:

<u>MaryJo Clark</u>	-	family-sized cooler
<u>Gloria DeMatteis</u>	-	personal cooler
<u>Dan Craig & Pat Isacco</u>	-	hummingbird feeders

Over a dozen mugs were also distributed.

Special thanks to - - -

- Gloria and Mark DeMatteis and Kathy Harvey (Epiphany Catholic Church) for the warm hospitality
- Steve Smith and Janice Belgredan for being the perfect hosts
- Joe Aloe and Jeff Ankrom (Quality Aggregates Inc.) for the buffet
- Thompson's Market of Eau Claire, PA for the food preparation
- Dale Hockenberry (PA Game Commission) for donating the hummingbird feeders
- Felicia Petro (Allied News) for announcing the event
- Tim Danehy (Stream Restoration, Inc.) for his generous donation of time and talents in the flyer design and event organization.
- JoAnn and MaryJo Clark (Tall Tree Girl Scout Council, Inc.) and Charlie Cooper (C D S Associates, Inc.)
- Roger Bowman, Tim Gillen, Jim Plesakov, Tim VanDyke (PA DEP, Knox District Mining Office)
- Dr. Fred Brenner, Matt Montag, Kristine Dooley (Grove City College)
- Dr. Dean DeNicola (Slippery Rock University)
- Margaret Dunn (Stream Restoration Inc.)

1998 SRWC SYMPOSIUM

Thanks to everyone who made our third annual symposium on 4/17/98 such a **HUGE** success!! Even with the attendance of about 189 enthusiastic and energetic people, the event ran very smoothly and there have been many compliments!! The beautiful surroundings along with the warm welcome from the Jennings staff made this a perfect meeting place. Thanks to Cindy Shirley (Administrative Asst.) and Ray Markle and Gary Jenkins (Maintenance) for going the "extra mile"!

The SRWC is particularly grateful to our sponsors for providing the transportation and delicious and ample lunch and snacks.

- **Allegheny Minerals Corp.** (Darrell Lewis)
- **Quality Aggregates Inc.** (Joe Aloe and Jeff Ankrom)
- **RECMIX of PA** (Wayne Hursen)
- **Scrubgrass Generating Co.** (Todd Lawton)
- **Slippery Rock University** (Dr. Anne Griffiths and Dr. Dean DeNicola)
- **Amerikohl Mining, Inc.** (John Stilley)
- **Stream Restoration Inc.** (Tim Danehy, Margaret Dunn, Cass Malinski, Pam Esch, Lucy Blanchfield)

Our poster session received a lot of attention and interest!! A special thanks to

- **U.S. Geological Survey** (Juliana Bowman Brown)
- **Western PA Coalition for Abandoned Mine Reclamation** (Mark Killar and Bob Ventorini)
- **Tall Tree Girl Scout Council, Inc.** (JoAnn and MaryJo Clark, Darcy and Kitty Peart assisted by Charles Cooper of C D S Associates, Inc.)
- **Slippery Rock Watershed Coalition** (many of us)
- **PA Dept. of Environmental Protection, Knox District Mining Office** (Roger Bowman and Tim Gillen)
- **Grove City College** (Dr. Fred Brenner, Matt Montag, Kristine Dooley)

High School Environmental Education Program

A group of over 100 high school students from Lincoln (Ellwood City Area) and Slippery Rock High Schools participated in a special "hands on" program to study stream ecology and passive treatment technology. We were very fortunate to have an internationally-recognized expert, Dr. Robert Hedin (Hedin Environmental Inc.) to donate his time to explain passive treatment technology. JoAnn Albert, William Wasser, Wilbur Taylor, Laurel Garlicki (Jennings Environmental Education Center) as always, provided an excellent, interactive program where the students participated in a stream characterization, evaluating both the water quality and aquatic community. Several of the instructors stated that this was a very rewarding experience as the students were enthusiastic and well-informed. Thanks again to Rick Bartolomeo from Lincoln High School (Ellwood City Area) and Tony Consbrook from Slippery Rock High School for bringing their students.

1998 SRWC Appreciation Award

**ARMCO INC.
CHEM. LAB.**

Bob Prus and Ed Nowacki (ARMCO) accepted the award which was presented by **Bob Zick** (Chester Engineers). Our gratitude can not be adequately expressed to ARMCO for their support of SRU student interns working in the watershed. Thanks ... thanks ... thanks!!!

Oral Presentations

Many comments were received regarding the skills of Janice Belgredan as the moderator of the morning session. Thank you, Janice!!

Key Note Address

Again, a BIG thanks to Robert Dolence, Deputy Secretary PA DEP for his personable and poignant remarks that were well-received by not only the general audience but also the high school and college students.

Watershed Restoration

Mark Killar, WPCAMR, and Margaret H. Dunn, Stream Restoration, Inc., provided overviews of restoration activities in western PA and the Slippery Rock headwaters, respectively. Mark is very knowledgeable, having worked with numerous watershed organizations. The importance of student involvement was further acknowledged. The willingness of both Mark and Margaret is appreciated.

Girl Scout Activities

Girl Scouts Darcy Peart and MaryJo Clark (Keystone Tall Tree Girl Scout Council, Inc.) spoke to the "filled-to-capacity" crowd about their experiences with and interests in the "hands-on" development of passive treatment technology with Charles Cooper, PE (C D S Associates, Inc.) at the Jennings Environmental Education Center. Darcy and MaryJo were both poised and professional in their presentations. Their continued participation and enthusiasm is extremely gratifying!!

Slippery Rock University Presentations

Dr. Dean DeNicola, Dept. of Biology, provided a brief overview of SRU's contributions in the restoration activities. Since the Coalition's inception, SRU has participated in this team effort, including the student monitoring of the macroinvertebrate, streambed sediments, and water quality in the headwaters area of the main branch of Slippery Rock Creek. Dr. DeNicola has contributed numerous hours and is directly responsible for many of the Coalition's successes. Two students gave oral presentations, Joanna Conrad and John Burglund. Joanna, a student of Dr. Michael Stapleton, Geochemist, provided data on the limestone-only and the compost with limestone pilot-scale systems at Jennings Environmental Education Center, while John discussed the on-going monitoring of Slippery Rock Creek and early indications of improvement to the ecosystem. The data presented are vital in the evaluation of the long-term effectiveness of restoration efforts.

Grove City College Presentations

Dr. Fred Brenner (Dept. of Biology) spoke regarding the continuing monitoring by his students of the most degraded major tributary (Seaton Creek) in the Slippery Rock Creek headwaters. Kristine Dooley and Matt Montag then presented their findings regarding the water quality and aquatic life of Seaton Creek. This information is invaluable to document the potentially positive effects of the land reclamation in-progress and other scheduled projects on the aquatic life. Thanks to Kristine and Matt!!

Allegheny College Presentations

Leslie Hunter and Michael Houser, Environmental Science students, gave excerpts from their respective Senior Theses. Leslie Hunter's work was entitled "**Uptake of Iron and Manganese by Three Aquatic Macrophyte Species In a Wetland Mitigating Acid Mine Drainage**", while Michael Houser's work was entitled "**Downstream Recovery of Macroinvertebrate Communities after Wetland Remediation of Acid Mine Drainage**". Leslie and Michael have graciously provided copies of their papers to the Coalition, which have been added to our growing list of references. These papers are of professional quality!! While attending a national meeting on reclamation, Coalition participants received requests for copies of these papers from people outside the region!! Thanks, Leslie and Michael for all your hard work!!

(Over)

Field Tour

The afternoon was spent in "show-and-tell". Vans provided by Slippery Rock University transported attendees to the sites while participants in the SRWC, who had worked in the area for a number of years, identified and discussed abandoned mine sites, remine areas, and recent mining activities "en route". General water quality of the area was also discussed during the trips. The PA DEP, District Mining Operations (Knox, PA), provided sets of "before, during and after" photos for sites included in the tour. Thanks to everyone who made this a memorable event!!!

Sunbeam Tipple

Highlighted during last year's tour, a brief pause was made at this site in order to compare the pre-reclamation photos with the current site conditions. This site provides a strong visual example of successful reclamation.

Chernicky Landowner Reclamation

Hank Thomas (Knox District Mining Office) shared his in-depth knowledge regarding the site history and vividly described the degraded water quality and abandoned site conditions. With equipment operating in the background, Fred Johnson (Amerikohl Mining, Inc.) explained the "nuts-and-bolts" of the operation, including estimated project life, equipment used, manpower, and the incorporation of circulating, fluidized-bed coal ash from the Scrubgrass Generating Plant. This site was included in past year's field tour prior to project commencement. Returning visitors were able to stand where last year they saw an abandoned pit !!!

Ferris Complex

This passive treatment complex was completed last fall, and . . . for the first time in about 100 years, the 200-gpm drainage from this site is no longer acid!! Roger Bowman (who developed the engineering plan), Tim Gillen, Jim Plesakov, and Tim VanDyke (Knox District Mining Office) were available to discuss the design and functioning of the vertical-flow systems and wetlands, which were constructed by Puryear Excavating and Kerry Coal Company.

SEE YOU NEXT YEAR!!!

For more information contact:

Slippery Rock Watershed Coalition, c/o Stream Restoration Inc. (PA Non-Profit), 338 Glen Eden Rd., Rochester, PA 15074
(724) 774-2813; fax (724) 774-1219

April 1998

THE CATALYST

Slippery Rock Watershed Coalition Monthly Activities Update

Next meeting: **Thursday, 4/9/98, 7:00 PM**, SRU Vincent Science Hall (Rm. 105). Topics: "Get-Together;" 1998 WV AMD Conference; 1998 SRWC Symposium; and Girl Scout Eco-Action Day. Prior meeting: 3/12/98, Rm. 105, SRU Vincent Science Hall. Attendees: S. Smith, J. Belgredan, D. Hockenberry, C. Cooper, F. Brenner, T. Danehy, M. Dunn, T. VanDyke, T. Gillen.

SRWC PRESENTATION WELL-RECEIVED BY GROVE CITY ROTARY CLUB

Dr. Fred Brenner, Grove City College, introduced Margaret Dunn as the luncheon speaker at the 3/24/98 meeting of the Grove City Rotary Club. Margaret's presentation which included several hand-outs and a poster displaying the activities of the Coalition was well-received by the group of about 40 Rotarians. Their interest was obvious through the insightful questions during the presentation and the positive discussions after the meeting. Thanks to the Knox District Mining Office and Tim Danehy for providing the data, resources, and talent needed for the poster!!!

APRIL IS EVENT MONTH!!!!

April 7 & 8: West Virginia Surface Mine Drainage Task Force Symposium

Participants in the Coalition have spent numerous hours updating the posters and hand-outs which depict our efforts in the headwaters and at the Jennings Environmental Education Center. The attendance at the WV Symposium to be held in Morgantown is expected to exceed 300!! A special thanks to the WV Surface Mine Drainage Task Force and the WV Mining and Reclamation Association for providing this wonderful opportunity to discuss our findings and the issues with the regional community!!!

April 13: Girl Scout Eco-Action

About 24 Girl Scouts, from Cadettes to Seniors (ages 11 to 17) are expected to attend the event to be held at the Jennings Environmental Education Center. Charles Cooper is to conduct the morning tour of the coal mine drainage abatement site, where local Girl Scouts along with Grove City College students, Slippery Rock University students, and PA Dept. of Environmental Protection personnel, and others are participating in a cooperative effort to initiate, construct, and monitor full- and pilot-scale passive treatment systems. The afternoon work project is to consist of permanent seeding of the disturbed area of the newly constructed Vertical-Flow System with warm season grasses, followed by hay mulching. This is an innovative program and a unique opportunity for teamwork and practical application!!!

April 15: SRWC Get-Together

The Slippery Rock Watershed Coalition will hold an "open house" at the Epiphany Catholic **(OVER)**

Church, Boyers, PA between 6:00 and 8:00 PM. This will be very informal. Janice Belgredan and Steve Smith will be welcoming the community to our "indoor picnic." Ball caps, magnets, and mugs will be distributed. Posters, as well as informational hand-outs, will help to explain the Coalition's activities. This event promises to be a "fun time" and an opportunity to entertain new ideas and answer questions about the efforts and goals of the Coalition. The "indoor picnic" is being catered by the community grocery, Thompson's Market, which is located near the headwaters in Eau Claire, PA. There will be no charge to the attendees for the meal/event. All are invited...bring the family!!!!

April 17: **1998 SRWC Symposium**

The third annual Slippery Rock Watershed Coalition Symposium is **being held at Jennings Environmental Education Center on Friday, April 17, 1998 from 8:15 AM to 3:30 PM.**

The response has been overwhelming!!! Over 100 high school students from Slippery Rock and Lincoln High Schools are planning to attend!!!! A special tour and program will be provided by Bob Hedin and the staff of Jennings Environmental Education Center.

In the morning, after coffee and donuts, there will be a very brief and understandable explanation of passive treatment technology and the goals of the Coalition followed by presentations from Slippery Rock University, Grove City College, and Allegheny College students relating to their research in the watershed. The Girl Scouts participating in the applied program at Jennings will also give a brief overview of their efforts. The moderators will be Janice Belgredan and Steve Smith, who have graciously changed their plans in order to help with this event. Robert Zick will present the 1998 SRWC Appreciation Award. Posters and videos will be available for inspection during breaks throughout the event.

Following lunch, the cost of which has been generously covered by private donations, there will be a field tour of some of the completed and in-process restoration efforts in the watershed. Sites will include: the Sunbeam Tipple; the Chernicky Landowner Reclamation Site; and the Ferris Treatment Complex. Transportation will be provided by Slippery Rock University. Presentations will be given in the field by individuals directly involved in the projects.

We are very pleased that Robert C. Dolence, Deputy Secretary for Mineral Resource Management, PA Dept. of Environmental Protection will be our Guest Speaker (time to be announced) this year. Mr. Dolence has provided valued and continued encouragement for watershed restoration efforts throughout the coalfields of Pennsylvania!!!

NEXT NEWSLETTER

MUCH more has and is happening...

- magazine article written about Jennings passive treatment complex
- Jennings Environmental Education Center finalist for Three Rivers Environmental Award
- C D S Associates, Inc. finalist for Three Rivers Environmental Award

Lunch and Snacks provided by:

Amerikohl Mining, Inc.
Allegheny Mineral Corporation
Quality Aggregates Inc.
Scrubgrass Generating Co.
RECMIX of PA

Poster Presentations

Keystone Tall Tree Girl Scout Council, Inc.
Slippery Rock Watershed Coalition
W. PA Coalition for Abandoned Mine Reclamation
Knox District Mining Operations
RECMIX of PA
C D S Associates, Inc.
U S GEOLOGICAL SURVEY

Jennings Staff

David E. Johnson, Center Manager; Jo Ann Albert, Environmental Education Specialist II; William Wasser, Wilbur Taylor, Laurel Garlicki, Environmental Education Specialists I; Ray Markle, Maintenance II; Gary Jenkins, Maintenance I; Cindy Shirley, Adm. Asst.; Sandra Kocian, PIC Conservation Aide

Slippery Rock Watershed Team - Knox District Mining Office

R. Bowman, T. Gillen, T. VanDyke, J. Plesakov, R. Kowalsky,
T. Elicker, H. Thomas, W. Edmiston, W. Allen, J. Mirza,
L. Odenthal, D. Caylor, P. Newell

SRWC Symposium Organizers

Janice Belgredan, Steve Smith, Dean DeNicola, Roger Bowman,
Fred Brenner, Tim Gillen, Robert Zick, Charles Cooper, Tim
VanDyke, Tim Danehy, Lucy Blanchfield, Margaret H. Dunn

Slippery Rock Watershed Coalition meets monthly on the second Thursday on the first floor of Vincent Science Hall, Slippery Rock University, at 7:00 p.m. 724-774-2813 for information. All are welcome!

SLIPPERY ROCK WATERSHED COALITION

1998 SYMPOSIUM

Friday, April 17, 1998

held at

JENNINGS ENVIRONMENTAL EDUCATION CENTER
PA Department of Conservation and Natural Resources

sponsored in part by
SLIPPERY ROCK UNIVERSITY

Symposium Goal

This Symposium has been designed to create a forum to:

- (1) provide an opportunity for community groups and students from local colleges/universities to present their findings to their peers, the public, and environmental professionals;
- (2) allow interaction among all interested in the restoration effort;
- (3) document the degree of success of the completed projects by identifying terrestrial and aquatic improvements;
- (4) discuss the development of new technology relating to land restoration and discharge abatement;
- (5) observe restoration efforts in the field.

SLEIPPERY ROCK WATERSHED COALITION
1998 SYMPOSIUM

Morning Session (Moderator: Janice Belgredan)

- 8:00 Arrival/Registration (coffee & donuts)
- 8:45 Greetings
David Johnson, Center Coordinator
JoAnn Albert, Env. Ed. Coordinator
- 8:50 Overview of Slippery Rock Watershed Coalition
Margaret H. Dunn, C D S Associates, Inc.
- 9:00 Keynote Speaker
Robert Dolence, Deputy Secretary for Mineral Resources Management, PA Department of Environmental Protection
- 9:15 Effects of Passive Treatment on Slippery Rock Creek
John Burglund, Environmental Science student, SRU
(Professor: Dr. Dean Denicola, Biologist)
- 9:30 Analysis of Pilot-Scale Passive Treatment Systems
Joanna Conrad, Environmental Science student, SRU
(Professor: Dr. Michael Stapleton, Geochemist)
- 9:45 Work With Passive Systems at Jennings
Darcy Peart and MaryJo Clark, Girl Scouts
Keystone Tall Tree Girl Scout Council, Inc.
- 10:00 Break
- 10:15 Metals Uptake by Three Aquatic Plant Species
Leslie Hunter, Env. Sci. student, Allegheny College
Macoinvertebrate Recovery Downstream of Passive Systems
Michael Houser, Env. Sci. student, Allegheny College
(Professor: Dr. Scott Wissinger, Env. Sci.)
- 10:40 Watershed Restoration in Western Pennsylvania
Mark Killar, Regional Coordinator, Western PA Coalition for Abandoned Mine Reclamation
- 10:50 1998 SRWC Appreciation Award
Presenter: **Bob Zick**, Chester Engineers
ARMCO INC. CHEM. LAB.
Bob Prus, Director, and **Ed Nowacki**, Chemist
- 11:00 Role of Slippery Rock University in Restoration Efforts
Dr. Dean Denicola, Dept. of Bio., Slippery Rock University
- 11:10 Seaton Creek: Biology & Chemistry Monitoring
Dr. Fred Brenner, Dept. of Biology, Grove City College
Kristine Doolley & Matt Montag, Biology students
- 11:40 LUNCH/Posters/Video

Afternoon Session: 12:15 - 3:15 pm

Field Tour of Selected Headwaters Restoration Projects
(Vans available for transportation.)

- (1) Sunbeam Tipple: Reclaimed in 1996, 21-acre site included incorporation of 175,000 tons of alkaline coal ash into 100,000 tons of coal refuse.
(Sunbeam Coal Corp., Kerry Coal Co., Rockwood Ins., PADEP)
- (2) Chemnickly Landowner Reclamation: One of the largest landowner reclamation sites in western PA. Abandoned strip mine is being reclaimed utilizing coal ash in the backfill to aid in the abatement of severe acid mine drainage. (Amerikohl Mining, Inc., Butler County Conservation District, PADEP)
- (3) Ferris Complex: Passive system designed to treat 4 discharges with 200-gpm combined flow. Two vertical flow wetlands and a large retention pond have been installed. (Kerry Coal Co., PA Game Commission, Penns Corner Charitable Trust, US EPA, PADEP, NRCS, Butler Co. Conservation District, WPCAMR)

Guides:

Fred Johnson, Amerikohl Mining, Inc.
Vern Kerry, Kerry Coal Co.
Hank Thomas, Roger Bowman, Tim Gillen, Jim Plesakov, Tim Vandyke, PA DEP (Knox Dist. Office)
Margaret Dunn, C D S Associates, Inc.

High School Student Program

High School students may participate in a program which includes stream characterization and passive treatment demonstrations at Jennings Environmental Education Center.

Instructors: Dr. Robert Hedin, Hedin Environmental, Inc.
JoAnn Albert, William Wasser, Wilbur Taylor, and Laurel Garlicki, Jennings Environmental Education Center

THE CATALYST**Slippery Rock Watershed Coalition Monthly Activities Update**

Next meeting: Thursday, 2/12/98, 7:00 pm, SRU Vincent Science Hall (Rm. 105 or other room on first floor). Topics: "Get-Together", 1998 WV AMD Conference; 1998 SRWC Symposium; Community projects. Prior meeting: 1/8/98, Rm. 107, SRU Vincent Sci. Hall. Attendees: T. Danehy, M. Dunn, F. Brenner, R. Bowman, T. VanDyke, S. Smith, J. Belgredan.

"GET-TOGETHER" PROPOSED AT BOYERS

At our January meeting, Janice Belgredan initiated a very well-received idea about having an informal gathering in the vicinity of Boyers. Emphasis will be placed not only on updating the interested public about the activities of the Coalition but also asking for their participation and support. A light meal will be provided. Private sponsors have already expressed an interest and commitment to providing the funding for the meal. This is exciting!!! We are still in the planning stage --- much to be done! Please let us know if you have any suggestions!!

GROVE CITY COLLEGE STUDENTS TO PARTICIPATE IN AMD RESEARCH EFFORT AT JENNINGS

On Friday, January 30, 1998, Dr. Fred Brenner visited the research site at Jennings with five biology students who are interested in participating in the AMD research effort. Tentatively the work schedule is as follows: - Matt McEntire will be volunteering his time in an effort to identify the bacteria in the flow splitter box and influent piping of the newly constructed vertical flow system pond. The bacteria adheres to and appears to be significantly restricting flow in the piping. It is felt that this is a very important research consideration for passive treatment systems, as it is very often difficult to avoid utilization of pipes. Kim Kosick and Corry Gardner are volunteering to conduct research in "test bed wetlands" at the site, to consider various plants and planting media. The "test bed wetlands" may be useful in future AMD treatment technology for design modelling and calibration. Nate Abramson and Aaron Kaiser will be working at the site for course credit. They intend to "dissect" Tank 3, containing the spent mushroom compost-limestone blend, which has been operating since June, 1996. They will be focusing on the biological and bacteriological components of the tank in an effort to better understand the effective "active" ingredients in the spent mushroom compost which account for its efficacy in AMD treatment.

To the extent possible, the Girl Scouts currently volunteering at the site, JoAnn and MaryJo Clark, Holly Wade, Kitty and Darcy Peart, will be working at the site with Charles Cooper assisting the Grove City College biology students in their research effort. It is anticipated that the Grove City College students and the Girl Scouts will be visiting the site generally on a weekly basis beginning on Friday, February 6.

Hopefully, this will be productive, enjoyable learning and research experience for all participants.

UPDATE OF SRWC WEB PAGE PLANNED

John Burglund, who is currently pursuing a degree in Environmental Science under Dr. Michael Stapleton at Slippery Rock University, will be working on updating the Coalition's web page. Thank you, John!!! and thank you Michael Stapleton for the previous update!!! Slippery Rock Watershed Coalition web page: <http://www.sru.edu/depts/artsci/geo/ie/amd.htm>. John will also be working on an education program at Jennings. More later...

GCC STUDENTS TO PARTICIPATE IN PA ACADEMY OF SCIENCE

Matthew S. Montag, Christine M. Dooley, and Jessica L. Podgornik, students of Dr. Fred Brenner at Grove City College, will give presentations at the annual meeting of the Pennsylvania Academy of Science. This is the second year that GCC students have presented their work on the ecosystem of Seaton Creek, the most heavily-impacted major tributary in the Slippery Rock Creek Watershed headwaters. Last year, Peter Sharpe made the presentation. (You may remember Pete as one of the installers of the Vertical Flow System at Jennings and as one of the speakers at last year's SRWC Symposium. (Pete is presently pursuing a graduate degree in the environmental field at Penn State.) KEEP UP THE GOOD WORK!!!