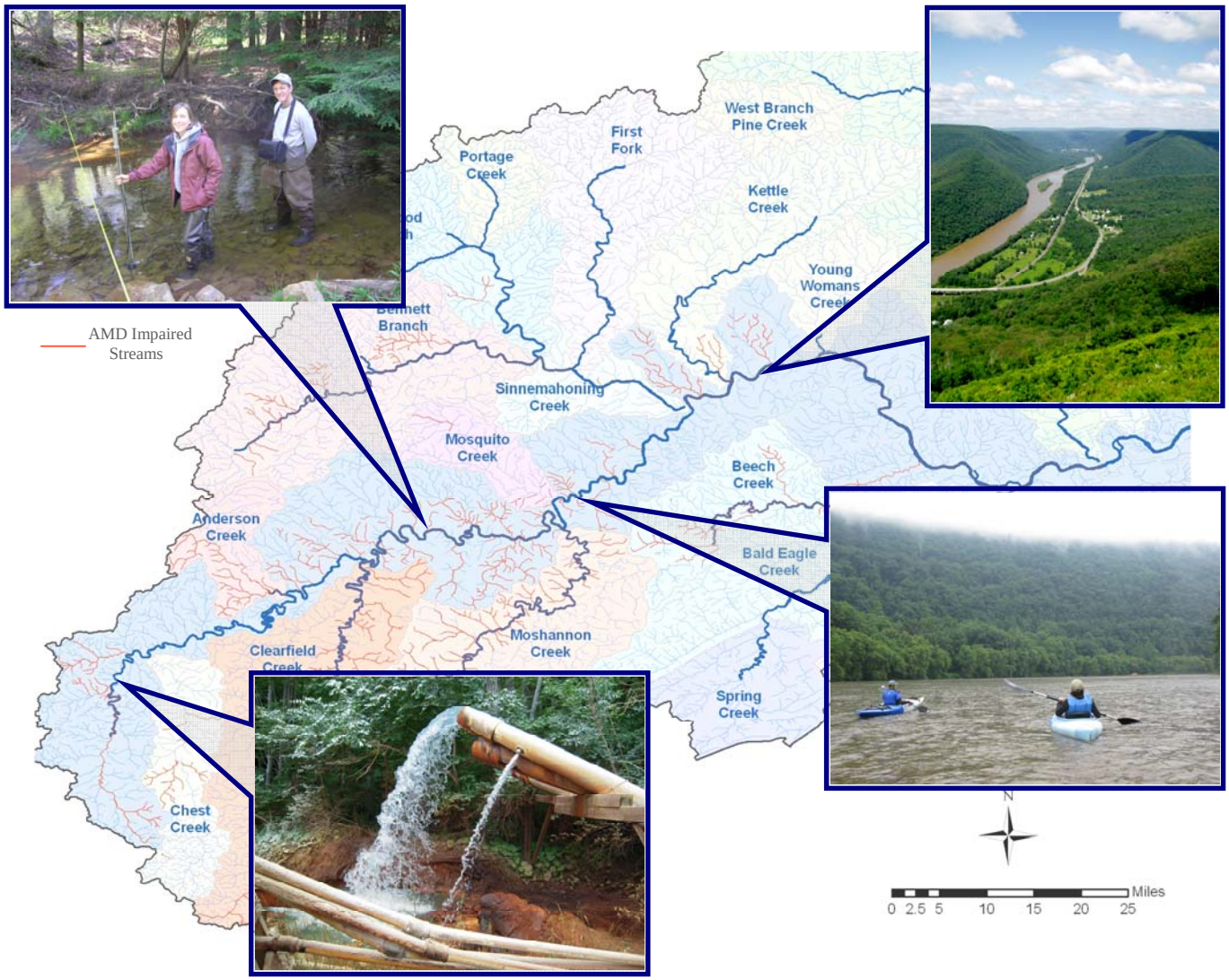
5th West Branch Susquehanna Restoration Symposium



May 6th & 7th, 2010

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Foundation for Pennsylvania Watersheds

5th West Branch Susquehanna Restoration Symposium

AGENDA

Thursday, May 6

7:30 - 9:00 a.m.	**Registration & Exhibit Setup, Refreshments**
9:00 - 9:15	**Welcome** ***Amy Wolfe,*** *Trout Unlimited*
9:15 - 10:00	**Keynote Address** ***Dr. T. Allan Comp,*** *Office of Surface Mining*
10:00 - 10:30	**Break with Refreshments**
10:30 - 11:30	**West Branch Susquehanna Recovery Benchmark Project: A Synopsis of Water Quality and Fishery Improvements** ***Rebecca Dunlap,*** *Trout Unlimited* ***Jason Detar,*** *PA Fish and Boat Commission*
11:30 - 12:00	**Current and Historical Macroinvertebrate And Habitat Conditions in the West Branch Susquehanna Subbasin** ***Susan Buda****, Susquehanna River Basin Commission*
12:00 - 1:30	**Lunch & Awards Ceremony**
1:30 - 2:00	**Using Manure to Produce Biofuels on PA Mined Lands** ***Dr. Rick Stehouwer****, Penn State University* ***Scott Van de Mark****, PA Environmental Council*
2:00 - 2:30	**Update of DEP Bureau of Abandoned Mine Reclamation Projects in the West Branch Susquehanna Watershed** ***Pamela Milavec,*** *DEP Bureau of Abandoned Mine Reclamation*
2:30 - 3:00	**Innovative Revegetation Treatments and Beneficial Uses of Iron- Bearing Sediments in Abandoned Mine Drainage Kill Zones** ***Dr. Mary Ann Bruns****, Penn State University*
3:00 - 3:30	**Break with Refreshments**

AGENDA

Thursday (continued)

3:30 - 4:00 **Primacy Bond Forfeiture Reclamation and Mine Drainage Treatment Projects in the West Branch Susquehanna Watershed**
***Mario Carrello**, DEP Moshannon District Mining Office*
***Eric Rosengrant,** DEP Moshannon District Mining Office*

4:00 - 4:30 **Assessment of the Impact of a Passive Treatment Facility to the Recovery of an AMD-Impacted Tributary within the Beech Creek Watershed**
***Dr. Mohamed Khalequzzaman**, Lock Haven University*
***Dr. John Way**, Lock Haven University*

4:30 - 5:00 **Passive Treatment System Success Story: The "Anna S" in the Babb Creek Watershed**
***William Beacom**, Babb Creek Watershed Association*
***Dr. Bob Hedin**, Hedin Environmental*

5:00 - 6:00 **Social Reception and Student Poster Awards**
Hors D'Oeuvres and Cash Bar

6:00 - 7:30 **Dinner on Your Own**

7:30– 8:30 **Movie Feature: "Out of the Ground: Western Pennsylvania's Coal Mining Experience"**
***By Andy McAllister**, Western PA Coalition for Abandoned Mine Reclamation*

Friday, May 7

7:30– 9:00 a.m. **Breakfast Buffet**

9:00-2:00 **Field Training: Stream Assessment Techniques**
Hands–on data collection techniques by:
DEP, USGS, PA Senior Env. Corps, and SRBC
Transportation, lunch, and field monitoring manual will be pro vided.

Keynote Speaker

Dr. T. Allan Comp

Office of Surface Mining

T. Allan Comp received national awards for his work with the people of the Appalachian coal country, for his successful effort to engage the art and humanities in environmental recovery and for his remarkable choreography of multiple federal agency partnerships, particularly with VISTA (Volunteers in Service to America), in working with rural mining communities. Recognized as an artist/thinker and a good speaker, Comp was once described as "a relaxed blend of John Muir, John Dewey and John the Baptist." An employee of the Department of the Interior Office of Surface Mining, Allan was profiled by Orion Magazine, named a *Purpose Prize Fellow* by Civic Ventures in 2007 and was the first federal employee to be named a *National River Hero* by River Network in 2009. In September of 2009 he was awarded the *Service to America Medal* in the Environment category by the Partnership for Public Service, the highest award a federal employee can receive. A historian of technology with a long engagement in cultural resources, community redevelopment and environmental reclamation, Allan is committed to the recovery of Appalachian mining communities from a century of pre-regulatory exploitation and neglect – and to the expansion of that experience to the rural mining communities of the Mountain West and elsewhere.

Presentation Summaries & Speaker Biographies

West Branch Susquehanna Recovery Benchmark Project: A Synopsis of Water Quality and Fishery Improvements

Rebecca Dunlap, Trout Unlimited
Jason Detar, PA Fish and Boat Commission

Numerous AMD-remediation projects have been implemented in the West Branch Susquehanna watershed to improve water quality and biological conditions. A collaborative effort to quantify the effects of these remediation projects was led by Trout Unlimited in 2009, funded primarily by a Growing Greener grant. Major project partners included the PA Fish and Boat Commission, PA Department of Environmental Protection, Susquehanna River Basin Commission, and member organizations of the West Branch Susquehanna Restoration Coalition. Project objectives were to compare the current chemical and biological conditions in the West Branch Susquehanna River to conditions in the 1980s and 1990s, provide sufficient water quality data for the integrated database and model created as part of the West Branch Susquehanna Remediation Strategy, and provide a benchmark to which future assessments can be compared.

Water quality, benthic macroinvertebrate, and habitat data were collected at a total of 80 sites throughout the watershed. Two rounds of water quality data collections were made in order to evaluate pollution loadings during spring and summer baseflow conditions. Results from these efforts indicate significant instream river condition improvements when compared to conditions in the mid-1980s. Specifically, pH of the West Branch at Karthaus increased by more than 2 standard units and total iron and total aluminum loadings improved by 72% and 62%, respectively at this location.

Fish populations were assessed at nine sites using backpack electrofishing gear to sample wadeable shoreline habitats and boat electrofishing to sample nonwadeable habitats. Fish species diversity and electrofishing catches increased at all sites since the late 1990s, especially at the five sites located between Clearfield and Hyner. Specifically, species diversity increased by 4 – 13 species per site and total electrofishing catches increased by 400 – 3,000% at these sites.

Becky has been with TU since 2007 and serves as Manager for the Eastern Abandoned Mine Program. Her work has focused primarily in the West Branch Susquehanna River watershed where TU is leading a comprehensive and collaborative effort to restore the region's water resources impacted by abandoned mine drainage and abandoned mine lands. Becky has a B.S. in Biology from Mansfield University and a M.S. in Biology from the University of North Texas.

Jason is the PFBC's Area Fisheries Manager for the northcentral region covering the West Branch Susquehanna River, Genessee River, and Penns Creek drainages. He has been with the Commission since 2004. Before coming to the PFBC, Jason earned a B.S. in Wildlife and Fisheries Science from Penn State and a M.S. in Biology from Tennessee Tech University.

Current and Historical Macroinvertebrate And Habitat Conditions in the West Branch Susquehanna Subbasin

Susan Buda, Susquehanna River Basin Commission

The Susquehanna River Basin Commission (SRBC) sampled and assessed benthic macroinvertebrate populations, water chemistry, and habitat conditions at 141 sites throughout the West Branch Susquehanna Subbasin in the summer of 2009. The sites were sampled as part of SRBC's Subbasin Survey Program, which includes sampling in each subbasin on a rotating basis. Previous sampling by SRBC in the West Branch Susquehanna Subbasin was completed in 1985, 1994, and 2002. During each survey, the sites were sampled once in order to provide a point-in-time picture of stream characteristics throughout the entire subbasin. The presentation will focus on macroinvertebrate and habitat data in the abandoned mine drainage impacted areas that were also sampled by Trout Unlimited and Pennsylvania Fish and Boat Commission in the summer of 2009. Macroinvertebrate sampling and habitat assessment methods followed the United States Environmental Protection Agency Rapid Bioassessment Protocol III and macroinvertebrate metric values were calculated. Condition categories were assigned based on relative quality compared to the reference sites and the best and worst quality sites were identified. The presentation also will highlight differences noted from the historical sampling data compared to the 2009 data and identify the location of sites where the largest changes may have occurred in the West Branch Susquehanna River.

Susan Buda is an Aquatic Ecologist for the Susquehanna River Basin Commission. She conducts monitoring and assessment work throughout the entire Susquehanna River Basin, mostly focusing on benthic macroinvertebrate populations. She received a B.A. from Bucknell University in Environmental Studies and an M.S. from Penn State University in Environmental Pollution Control. Susan currently works for the Commission out of her home in State College, PA.

Using Manure to Produce Biofuels on PA Mined Lands

Dr. Rick Stehouwer, Penn State University
Scott Van de Mark, PA Environmental Council

The Chesapeake Bay Watershed in Pennsylvania is impaired by excess nutrient loading due to multiple sources including agriculture. Pennsylvania has 180,000 acres of abandoned mine lands and annually approximately 5,500 acres of active coal mines require reclamation. Restoration of soil quality and productivity on these degraded lands requires large nutrient and carbon inputs and thus a potential use for excess manure.

Since 2005, The Pennsylvania Environmental Council in partnership with Penn State University have been developing a mine reclamation technique using poultry manure stabilized with paper mill residuals or by composting to sequester nutrients and allow sustained production of biomass energy crops. If applied on a broad scale in PA this technique can reduce poultry manure land application in the Bay Watershed while simultaneously restoring mined lands.

The project partners implemented a 30-acre demonstration project in 2008 and 2009 in Clearfield County, PA. The demonstration project will address several topics: 1) nutrient and carbon inputs, fluxes, and sequestration from manure application and switchgrass growth, 2) production of three warm season grass

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species in mono and mixed culture on mined land reclaimed with poultry manure mixed with paper mill sludge or composted manure, 3) economics of commercial-scale mine reclamation using poultry manure and paper mill sludge versus conventional mine reclamation, 4) economics of warm season grass harvest and sale as biomass to local markets in mining regions, 5) potential of PA nutrient trading program to offset poultry manure transportation costs to mine reclamation sites.

Dr. Stehouwer has been on the Crop and Soil Sciences faculty at Penn State University since 1997, and is the state extension specialist in environmental soil science. His extension program covers soil based recycling of by-product materials, compost production and utilization, recycling of urban/suburban organic materials back to agricultural soils, manufactured topsoils, mine reclamation, and remediation of contaminated soils and brownfields. Dr. Stehouwer maintains an active research program to support his extension efforts. Present and recent research projects include: organic carbon and nutrient dynamics in abandoned mined lands reclaimed with manure, production of biomass crops on reclaimed mined lands, use of spent foundry sands and composts as components of manufactured topsoil, and nutrient flux from mined lands reclaimed with biosolids. Dr. Stehouwer also teaches Introductory Soil Science to over 300 students each year at Penn State University.

Scott Van de Mark is the Director of Special Projects with the Western Pennsylvania office of the Pennsylvania Environmental Council (PEC). Van de Mark is a project manager for environmental quality trading, energy and climate projects with PEC. Van de Mark assisted the PA Department of Environmental Protection with the development of water quality trading policy and online trading tools for the Chesapeake Bay Watershed in PA. Recent projects managed by Van de Mark include the ad hoc PA Climate Change Roadmap, the PA DCNR Carbon Management Report and assistance with the Park-the-Plow no-till cropping practices project managed by the Capital RC&D. Van de Mark is the PEC representative on the Pennsylvania Sustainable Energy Board. From 1987-1991, Scott worked as an Environmental Scientist with Environmental Strategies Corporation (ESC), in Pittsburgh. He has a B.A. from the University of Vermont in Economics and Environmental Studies and a M.E.S. from the Yale School of Forestry and Environmental Studies.

Update of DEP Bureau of Abandoned Mine Reclamation Projects in the West Branch Susquehanna Watershed

Pamela Milavec, DEP Bureau of Abandoned Mine Reclamation

The Bureau of Abandoned Mine Reclamation (BAMR) has a number of recently completed and ongoing projects that support restoration of the West Branch Susquehanna River. The BAMR-funded Barnes-Watkins Refuse Pile Reclamation Project was completed in 2008 and provided complete reclamation of an18-acre refuse pile in the headwaters. Recent stream surveys show that both fish and macroinvertebrate populations are quickly improving downstream of the site.

Many other projects are underway. They include the Barnes and Tucker Lancashire #15 AMD treatment plant, the Growing Greener-funded Bear Run Watershed Renaissance project (BAMR is one of many partners in this effort), and the proposed Cresson AMD Treatment Plant in the headwaters of Clearfield Creek (feasibility phase). Moving further downstream, the Bennett Branch Sinnemahoning Creek water-

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shed restoration is continuing with both surface reclamation and construction of an AMD treatment plant and collection system. Also in the Bennett Branch watershed is the wrap-up of the Dents Run Restoration Project with the U.S. Army Corps of Engineers and the Bennett Branch Watershed Association. In addition to the AMD projects, there is a 146 acre reclamation project underway in the Moshannon Creek watershed, near the Village of Grassflat. The presentation will provide an update on the current status of these projects.

Pam is employed by the PA Department of Environmental Protection, Bureau of Abandoned Mine Reclamation. She works in the Cambria District Office, where she is Environmental Services Section Chief. This Section is responsible for watershed planning and project development of AMD treatment and abatement projects in the bituminous portion of the state. The Section also provides biological, hydrologic and environmental services to the Bureau and assists in monitoring and operation of passive treatment facilities.

Pam has been with DEP for 26 years, working also as a water pollution biologist and water quality specialist. She has a B.S. in Biology from the University of Pittsburgh at Johnstown.

Innovative Revegetation Treatments and Beneficial Uses of Iron- Bearing Sediments in Abandoned Mine Drainage Kill Zones

Dr. Mary Ann Bruns, Penn State University

When acidic abandoned mine drainage (AMD) mixes with soil or water of more neutral pH, iron(II) undergoes oxidation to form yellow-orange iron (hydr)oxide precipitates. Thick mounds of these precipitates have accumulated during decades of AMD flow over a two-acre “kill zone” near the former village of Sylvan Grove in Clearfield County, PA. There, barren sediment mounds are intersected by gullies carrying AMD to Brown’s Run and then into the West Branch of the Susquehanna River. Penn State graduate student Mary Kay Lupton, who grew up near Sylvan Grove, conducted master’s thesis research here from 2006-2008. After identifying three areas within the kill zone based on sediment thickness, she used low rates of lime and compost to revegetate small plots in each area. Lime and compost were incorporated by rototilling, and plots were broadcast with a mine reclamation seed mix and mulched with oat straw. Overall, vegetation grew best in areas with thinnest sediment layers, but continuous and dense plant cover also was achieved in thicker sediments amended with compost. This study showed that even low additions of organic matter and lime can counteract adverse effects of acidic iron-bearing sediments on plant growth. Since iron oxide minerals bind tightly to organic nutrients, we also evaluated use of AMD sediments to reduce odor and EPA-regulated gas emissions from dairy manure. Of a total of seven manure treatments, AMD sediments were most effective in reducing odors and ammonia emissions. Since only one rate of AMD treatment was tested, more rates must be evaluated to determine feasibility of this potential beneficial use.

Mary Ann Bruns is Associate Professor of Soil Microbiology in the Dept. of Crop and Soil Sciences at Penn State University, University Park. She received her Ph.D. in Crop and Soil Sciences from Michigan State, M.A. in Urban and Regional Planning from University of Iowa, and B.A. in Microbiology from the University of Nebraska. At Penn State, Mary Ann teaches soil ecology and environmental soil microbial

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ogy. She and her students use laboratory culturing, microscopy, and molecular biology methods to investigate microorganisms responsible for carbon, nitrogen, sulfur, and iron cycling in soils and sediments. Her group is monitoring plant growth, soil microbial communities, and iron oxide sediments in compost-treated plots at an acid mine drainage "kill zone" near Kylertown, PA. Her group also conducts research on the role of microorganisms in rock weathering, initial stages of soil formation, and soil amendment dynamics.

Primacy Bond Forfeiture Reclamation and Mine Drainage Treatment Projects in the West Branch Susquehanna Watershed

Mario Carrello, DEP Moshannon District Mining Office
Eric Rosengrant, DEP Moshannon District Mining Office

In 2004 the Department assigned responsibility for the reclamation of the Title V Primacy Bond Forfeiture (PBF) sites to the Bureau of District Mining Operations (DMO). Historically, DMO has been able to reclaim many mine sites about to be abandoned and forfeited by working out reclamation contracts with the surety companies during the forfeiture process. Many of these sites have also been taken over by local licensed coal mine operators by permit transfer or repermitted using remining incentives. Because of DMO's success and established working relationships with local licensed operators the entire PBF inventory was transferred from BAMR. This presentation will review the history of the PBF program, share our experiences on several completed and ongoing projects and encourage watershed groups to apply for grants to assist the Department in the restoration of these sites.

Mario Carrello works for the PA Department of Environmental Protection as a Watershed Manager in the Moshannon District Mining Office. Mario is responsible for working with volunteer watershed associations, administering Growing Greener grants , and he also works with the primacy bond forfeiture program. He has worked for the DEP for 28 years. Prior to his current position, Mario worked in the Department as a Compliance Specialist and Surface Mine Inspector. He received a B.S. in Biology, and M.S. in Ecology from Penn State University.

Eric Rosengrant is a Mining Permit and Compliance Specialist at the DEP's Moshannon District Mining Office. Aside from his duties carrying out compliance activities, he oversees the operation and maintenance of treatment systems for the Al Hamilton Treatment Trust on behalf of the Department and the Clean Streams Foundation. Eric is involved with the planning, design, funding, construction, and ultimately, regular inspection of treatment systems built for the Hamilton and other trusts, as well as for ABS and other acid mine drainage discharges. He has also been part of the Primacy Bond Forfeiture program to reclaim abandoned mine sites. Prior to holding his position in Mining, Eric spent 15 years in the DEP's Water Quality program working with sewage and industrial wastewater treatment, nutrient management, and in spill response. Eric holds a BS degree in Environmental Resource Management from Penn State University.

Assessment of the Impact of a Passive Treatment Facility to the Recovery of an AMD-Impacted Tributary within the Beech Creek Watershed

Dr. Mohamed Khalequzzaman, Lock Haven University
Dr. John Way, Lock Haven University

Acid mine drainage (AMD) plagues most tributaries throughout the heavily forested plateau of the Beech Creek watershed, a northcentral PA basin contributing net acidity to the West Branch Susquehanna River. As part of a multi-year, community-based research project, water samples have been collected from PA DEP BAMR's Abandoned Mine Land Reclamation Project (BF 438-102.1), an AMD passive treatment facility, since it went online in the spring, 2006. The 2006-09 field seasons yielded geochemical data from this site, including pH, conductance, net acidity, alkalinity, DO, ORP, major anions, cations, and several trace metals, from collection and treatment ponds, artificial wetlands, and its natural, down-gradient drainage system.

Data analyses and field observations demonstrate that the effectiveness of this passive treatment system has declined progressively throughout the sampling period. This facility does not appear to be achieving its original design goal, to provide significant water-quality improvement to the Middle Branch of Big Run.

Currently, this facility requires major maintenance in order to return it to original-design functionality. As a direct result of this ongoing monitoring program, several recommendations have been provided to the local watershed association and to the DEP relative to modifications and retrofits to this treatment system. The findings of this study also have implications applicable to the standard design used for other passive AMD-treatment facilities in Pennsylvania and elsewhere.

Dr. Md. Khalequzzaman holds a M.S degree in Mining Engineering/Geology from Azerbaijan Institute of Petroleum & Chemistry in Baku, formerly U.S.S.R., a M.S. and Ph.D. in Geology from University of Delaware. He is a professor of Geology at Lock Haven University of Pennsylvania for the last nine years. He teaches several upper division geology courses, has numerous publications on water and energy-related issues, as well as several national and international awards. His research focuses on the impacts of coal mining and agriculture in stream and soils in central PA. Recently, on invitation by the government of Bangladesh he participated in a round-table discussion on coal policy and coal mining option in Bangladesh.He is involved in community-based watershed alliances and environmental research in both Bangladesh and Pennsylvania.

John H. Way received his B.A. in geology from Franklin & Marshall College, his M.S. in geology from Univ. of Pennsylvania, and his Ph.D. in geology from Rensselaer Polytechnic Institute in Troy, NY. He worked as a field geologist with the Pennsylvania Topographic and Geologic Survey for 15 years, and later as a faculty member in the Department of Geology and Physics at Lock Haven University of Pennsylvania for 18 years. Way's geologic maps and publications focus on sedimentology, stratigraphy, environmental geology, and geological education. Since retiring from LHUP in 2004, Way continues active field work. Among several concurrent research projects, he is collaborating with his colleague, Dr. Khalequzzaman, assessing and monitoring water quality and collecting baseline data in watersheds of northcentral PA heavily impacted by acid-mine drainage, nutrient overloads, and other water-quality issues.

Passive Treament System Success Story: The "Anna S" in the Babb Creek Watershed

William Beacom, Babb Creek Watershed Association
Dr. Bob Hedin, Hedin Environmental

The Anna S deep mine complex in Morris (Tioga County) has been a major source of acid mine drainage pollution to Wilson Creek, Babb Creek, and Pine Creek for decades. The mine produces several AMD discharges with pH 3 and Al and Fe concentrations as high as 50 mg/L. In 2004 the Babb Creek Watershed Association installed a passive treatment system for three of the AMD discharges. The complex consists of two independent treatment systems that contain eight vertical flow ponds and four constructed wetlands. The systems have performed well during their six years of operations. The final effluents have always been alkaline with low concentrations of metals. The systems have produced, on average, 2,300 lb/day of net alkalinity and removed 143 lb/day of Al and 125 lb/day of Fe. The treatment systems are an important component of the Babb Creek restoration.

Bob Hedin, Hedin Environmental, will describe the systems' design and treatment effectiveness. Bill Beacom, Babb Creek Watershed Association, will describe the systems' funding and operation and maintenance responsibilities.

William C. Beacom is the chairman of the Babb Creek Watershed Association. He earned a B.S. degree in Forestry from West Virginia University. Bill is retired after working for over 35 years with the PA Bureau of Foresrty of which the last 22+ years was spent as the Resource Management Assistant on the Tioga State Forest District in Wellsboro.

Bob Hedin is the owner of Hedin Environmental, a small firm that specializes in mine drainage studies and the design of passive treatment systems. Bob got his background in mine drainage as a research scientist with the Department of Interior and has been a mine water consultant since 1994. Hedin Environmental has completed a dozen stream restoration plans and designed about three dozen passive treatment systems. The firm has a strong research interest and has been active in resource recovery, innovative limestone treatment systems, and manure nutrient management. Bob has worked on the Anna S project since 1996 when the project was first conceptualized by Bob McCullough, Jim Barr, and the Moshannon District Mining Office.

Movie Feature: "Out of the Ground: Western Pennsylvania's Coal Mining Experience"

By Andy McAllister, Western PA Coalition for Abandoned Mine Reclamation

The region surrounding and including Pittsburgh in Southwestern Pennsylvania has been profoundly shaped by its industrial past. A unique set of circumstances converged here that destined Pittsburgh to become the Steel City, the capital of the world's industrial might for nearly a century. The history of the region's iron and steel industry has been fairly well chronicled and is generally known as part of our heritage. Not so well known is the story of the supporting industry that literally provided the fuel of the Pittsburgh region's meteoric rise to prominence, the fuel of the Industrial Revolution, coal.
Beginning with our present-day abandoned coal mine legacy as a touchstone, "Out of the Ground" takes you on a journey back through time as it examines the lives and struggles of the region's coal miners - from the mid 18th century until the decline of the industry in the mid-1950s. With particular focus on our largely immigrant ancestors who lived, worked, and died in the region's coal mining communities during the late 19th and early to mid 20th centuries, "*Out of the Ground*", a feature-length documentary featuring music by national recording artist Ken Bonfield, will tie our present-day lives to theirs. We are sure for many this will invoke a sense of pride in the region, its people, and for their contribution toward the shaping of a nation.

"*Out of the Ground*" is a fascinating journey through the lives of coal mining families who, in spite of fear, oppression, and threats, built strong communities--places where memories of our coal mining past still linger.

Andy McAllister works as the Regional Coordinator for the Greensburg-based Western Pennsylvania Coalition for Abandoned Mine Reclamation (WPCAMR). WPCAMR is a non-profit, non-partisan, local, state, federal, and industry partnership dedicated to improving water quality and endorsing the reclamation of abandoned mine lands in Pennsylvania's bituminous coal region.

With over 20 years of professional experience in the fields of Aquatic Biology and Water Pollution, Andy has lived and worked throughout the Eastern half of the U.S. and abroad. As a biologist involved in abandoned mine reclamation activities in the bituminous coal region and descendant of immigrant coal miners, he developed a keen interest in our industrial past. That interest, and the research that followed, resulted in his first documentary film, "Out of the Ground".

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The West Branch Susquehanna Restoration Coalition would like to thank everyone in attendance!

To find out more about the WBSRC and to join visit www.wbsrc.org.

Thanks to our many partners!

Watershed Associations and Communities
Anderson Creek Watershed Association
Babb Creek Watershed Association
Beech Creek Watershed Association
Bennett Branch Watershed Association
Chest Creek Watershed Alliance
Clearfield Creek Watershed Association
Deer Creek Watershed Association
Kettle Creek Watershed Association
Moshannon Creek Watershed Coalition
Spring Creek Watershed Community
West Branch Susquehanna Rescue Watershed Group

Conservation Districts
Cambria County Conservation District
Centre County Conservation District
Clearfield County Conservation District
Clinton County Conservation District
Elk County Conservation District
Indiana County Conservation District

Conservation Groups
Bilger's Rocks Association
Cambria County Conservation & Recreation Authority
Clearfield County Senior Environment Corps
Clearwater Conservancy
Curwensville Anglers Restocking Program
Eastern PA Coalition for Abandoned Mine Reclamation
North Central Forest Landowners Association, Inc.
Pennsylvania Forestry Association
Pennsylvania Tree Farm Program
Trout Unlimited
Western Pennsylvania Conservancy
Susquehanna Greenway Partnership
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Trout Unlimited Chapters
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