

# STREAM LINES

The Newsletter of the  
Brodhead Watershed Association



Published by and for BWA members

January 2008

## Trout Trails and Tales

Learn more  
about this  
Community Art  
Project



### From Our New BWA President

#### Dr. Jeri Jewett-Smith

I am very excited to be able to serve the Brodhead Watershed Association as president for 2008. As an aquatic ecologist by training and director of East Stroudsburg University's environmental studies program, I understand the problems facing one of the fastest growing communities in Pennsylvania.

Our watersheds are under new stresses every day. The stresses come from climate change, invasive species, changes in land use, air and water pollution to name a few. BWA has taken a leadership role in identification and quantification of these stresses to help maintain the quality of our streams and watersheds. The leadership role includes education, research,

participation in public hearings and working with federal, state and local environmental agencies. Our dedicated Streamwatch volunteers sample the Brodhead and Cherry creeks and their tributaries monthly, so that any major chemical changes can be documented and brought to the attention of local and state authorities.

This organization has stood for sustainable use of water as a resource and recognition that water used in homes and businesses is a part of that resource, not a waste product.

With the help of the dedicated, knowledgeable and professional members of the board, I know that 2008 will be a year when the mission of the BWA

will be carried forward.

But an organization is only as good as its membership, so I encourage each and every one of you to become involved and introduce BWA to your friends and colleagues. Pass this newsletter on to interested friends. I challenge each of you to be a BWA member "finder" so that we can reach all stakeholders in the region, from Monroe County and beyond.



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### BWA Leadership Message Convinces County Voters

#### BWA PRESIDENT THERESA MERLI ELECTED COUNTY COMMISSIONER

Theresa Merli, a long-time member of BWA, supporter of sound environmental decisions, and BWA president and administrator, was elected County Commissioner of Monroe County in the November 2007 elections.

Sworn in on December 27, 2007 at the County Courthouse in Stroudsburg, Merli is now working on a range of issues facing the county. She is a member of the Conservation District Board, Assessment Board, and Election Board, among others, and President of the Board of Trustees for Pleasant Valley Nursing Home. She intends to

attend Planning Commission meetings regularly.

Asked about her priorities, Merli said "Healthy Growth is a top priority for me. The county's population was estimated by the US Census at 165,685 back in 2006 – that's 20 percent growth in six years. With that kind of population explosion, it's awfully tempting to go for quick-fixes to services and infrastructure. I think that is a mistake. Old thinking and old solutions just set us up for future problems. True leadership demands new thinking to create a framework for respon-

sible, *sustainable* growth."

Merli's duties as BWA's president have passed to Jerilynn Jewett-Smith, biology professor and Director of Environmental Studies at East Stroudsburg University.

Merli's administrative duties have passed to Jordan Gonda, a biology graduate of ESU who will be attending law school in the fall of 2008, with the goal of a career in environmental law.

The membership, board and staff of BWA wish Theresa success in her new, expanded role of service.

## ***DOING SCIENCE - Results of "General Aquatic Projects" by Senior ESU Students***

Science makes headlines – we've all seen what the popular media does with science stories.

Climate change! Stem-cell breakthrough! 21st century robots! Earthquake alert! Trans fats! The sky is falling!

The truth is, science has very few loud, ecstatic "eureka!" moments. Instead, it is more like a series of "hmm" moments that can eventually lead to a quiet "aha." Doing science is about eliminating wrong hypotheses, accruing bits of information that may lead somewhere, trying yet another possibility, studying yet another point of view – and testing, testing, testing.

In her Biology Senior Seminar at ESU, Jeri Jewett-Smith guides students along that path. Following are four investigations developed and carried out by seniors this past fall, all having to do with water quality in the Brodhead Watershed. You won't find any "eurekas" here. But plenty to "hmm" about. If you are interested in reading the full abstract of these projects, please call BWA at 839-1120.

### **Lower Brodhead**

Jordan Gonda, Casey Craig, and Anna Leigh Rowlands studied whether discharging treated sewage into a stream affects stream health. They chose a site on the Lower Brodhead Creek at the Manwalamink Sewage Treatment facility because drivers passing by had reported sewage odors.

The researchers studied three spots: one at the sewage outfall pipe, a second about 40 yards downstream (the "plume"), and the third above the outfall pipe to serve as a control. Water samples were collected on three different dates and tested onsite and in the lab. Rock scrapings taken at each site were also analyzed in the lab.

At the effluent pipe, the water had less dissolved oxygen and more nitrate and phosphate, compared with the upstream control site. The researchers expected that nitrate and phosphate levels at the plume site would also be high, but this was not the case – perhaps due to another stream

segment entering at the plume site.

On the other hand, greater numbers and varieties of algae were found at the control site than at the outfall pipe or in the plume. The scrapings at the control site also turned up snails, fish eggs and evidence of other aquatic life not found at the other sites. These findings suggest that sewage discharge indeed affects the chemistry of the water, and therefore has implications for the stream's aquatic life.

### **Swiftwater Creek**

A similar method was used by Dean Drakis and Nick F (need name?) to study stream chemistry in portions of the Swiftwater Creek and impact on microscopic creatures. Water quality conditions were assessed above and below a pharmaceutical company's sewage outfall pipe. The researchers took samples three times at each of the two sites and tested for water chemistry and the presence of periphyton, communities of tiny organisms that live on rooted aquatic plants.

Slightly higher amounts of nitrate and phosphate levels were detected below the outfall pipe. However, average phosphate levels downstream were much higher than the acceptable level mandated by the county.

Periphyton diversity was low both above and below the outfall pipe, with diversity being lower below the pipe. According to one index, this low level of periphyton classifies the stream as "polluted." However, a second index showed more pollution-tolerant periphyton existing above the outfall pipe. These contradictory results could have been influenced by an abundance of unidentified green algae found at both locations.

One reason that more pollution-tolerant periphyton would exist upstream from the pipe than downstream is that other businesses discharge wastewater into the Swiftwater Creek upstream from the sampling areas.

### **Forest Hills Run**

Karen Trebitz studied the effects of sewage discharge on the bugs - benthic macroinvertebrates- that live on stream bottoms. The new Mount Airy Casino is permitted to discharge 220,000 gallons per day of treated sewage into Forest Hills Run, which eventually flows into the Paradise Creek and thence to the Brodhead.

Trebitz used the presence of benthic macroinvertebrates to monitor water quality of Forest Hills Run upstream of the Carlton Road bridge. These "indicator" organisms are particularly sensitive to physical and chemical changes in their water habitats. Specimens were collected and water samples tested on two days – one in October before the casino's grand opening and one in November after the opening. The same species of macroinvertebrates were found both days – but the abundance of some species had increased while many others had drastically decreased. Oxygen levels rose slightly, pH and water temperature dropped slightly. Turbidity levels had almost doubled and phosphate levels increased significantly.

Trebitz concludes that if the chemistry of the water in Forest Hills Run is not stabilized, we can expect a decline in the richness of species diversity, along with general deterioration of the stream quality.

### **Lake Valhalla**

Michelle Stevens and Elizabeth Reese looked at the effect of Lake Valhalla on the communities of micro-plants, called phytoplankton, in Sambo Creek. They took samples at three locations – an inlet stream, the outflow into the Little Sambo and in the lake itself. They analyzed the phytoplankton and water quality at all sites, and found a very limited amount and variety of phytoplankton at the outflow compared to both the lake and the inflow. Although many phytoplankton specimens were observed in the lake, the outflow had very little diversity. This study supports the hypothesis that aquatic communities change from inflow to outflow.



# Trout Trails & Tales

Imagine strolling along Main Street, Stroudsburg, and coming face-to-face with a four-and-a-half foot trout. With ruby eyes. And golden scales. Followed by another in shades of blue Dresden pottery. And another, in patriotic stars and stripes.....

No, it's not a dream sequence from a Fellini film.

It's our own take on the "Cow Parade" that has circled the globe from Zurich to Chicago, Copenhagen to Istanbul, Moscow to South Africa. Instead of artists using paint, tile, fabric, mirrors and more to turn cow sculptures into graphic works of art, local artists will use their imaginations on the signature creature of our Pocono waterways – the lithe, athletic, gorgeous trout.

The giant, painted-and-embellished trout will be displayed throughout the Brodhead Watershed Community from June 2008 to September 2008. More than twenty-five trout sculptures will spawn in the watershed's shopping malls, businesses, schools, and restaurants. Tributary communities of the Brodhead will be included – such as the Cherry Creek, Pocono Creek, and Paradise Creek.

Organized by the Brodhead Watershed Association, Trout Trails and Tales brings together artists, sponsors, businesses, service clubs and social groups, enriching us all linking

art and nature and water stewardship. Trout Trails and Tales has support from so many partner organizations already, including the Pocono Healthy Community Alliance, Pocono Arts Council, Monroe County Conservation District, Monroe County Planning Commission, the Pocono Mountain Visitors Bureau, the Environmental Protection Agency and the Delaware River Basin Commission.

Mounted to stand five feet off the ground, with a snout-to-tail length of 58 inches, trout will be sponsored by local businesses and individuals, and each will be enhanced by a local artist, in media limited only by the artist's imagination. Designs will be chosen by jury.

The noble trout was selected not just for its simple beauty – but also because trout is indigenous to the creeks and streams of the Brodhead watershed, where breeding populations of several different species exist. The health of the trout population reflects the health of the overall

stream and the habitat that supports trout – and us.

BWA will use Trout Trails and Tales as a way to increase community awareness of how land use, stream flows, trout populations, water quality, and human activities are all intertwined.

An Artist Prospectus is available that outlines the specifics of the project. is available from the Pocono Arts Council. The design Deadline is February 29, with selected artists notified by March 24.

A kick-off event will happen on June 1 and the exhibit will run thru August. For further information, contact Laura at the Pocono Arts office, 570-476-4460. For information on sponsoring a trout, call BWA at 839-1120. For information on similar events use these links...

[www.pbase.com/neovolatile/slo\\_trout](http://www.pbase.com/neovolatile/slo_trout)

[www.wildsalmononparade.com](http://www.wildsalmononparade.com)



From "Trout About Town" Project in San Luis Obispo, CA

## Watershed Watch

**Recent applications filed and permits granted in the Brodhead watershed, from the PA Bulletin**

### STORMWATER DISCHARGES

#### Applications

Aug 4 -- Mount Airy I, LLC, Paradise Twp, discharge to Paradise Creek

-- Sanofi Pasteur Inc., Pocono Twp, discharge to Scot Run

July 14-- Franconia Mennonite Camp Assoc., discharge to Spruce Mountain Run and Middle Branch

Aug 25 -- SADG-2, Inc., Mount Pocono Borough, discharge into Yankee Run

Sept 29 -- Pocono Twp Supervisors, Pocono Twp, discharge to the Pocono, Scotrun, Transue, Swiftwater, UNT Scotrun creeks

Nov 17 -- The Spirit of Swiftwater, Pocono Twp, discharge to Swiftwater Creek (EV)

Dec 8 -- Sanofi Pasteur, Inc., Pocono Twp, discharge to Swiftwater Creek

Dec 29 -- First National Community Bank, Paradise Twp, discharge to Swiftwater Creek

-- Keystone Hollow Corp, Middle Smithfield Twp, discharge to Marshalls Creek

### STORMWATER DISCHARGES

#### Permits

July 21 -- Chelsea Smithfield Holdings, LLC, Smithfield Twp, for discharge into the Brodhead Creek (General Permit)

Sept 29 -- Mount Airy I, LLC, Paradise Twp discharge to Paradise Creek

Oct 6 -- Mark Styczen, Pocono Twp, discharge to Pocono Creek

Oct 13 -- Northland Dev. Corp, Pocono Twp, discharge to Butz Run & Cranberry Crk

Oct 20 --Ammre Holdings, LLC, Paradise Twp, discharge to Paradise Creek

-- Sanofi Pasteur, Inc., Pocono Twp, discharge to Swiftwater Creek

Oct 27 -- Smithfield Twp, discharge to Marshall Creek

-- Monroe-Pike Land, LLC, Stroud and Pocono Twp, discharge to Brodhead Creek

Nov 3 -- C & M at Mountain Hollow, LP, Stroud Twp, discharge to Brodhead Creek

-- Price Twp Development, Price and Smithfield Twp, discharge to Michael Creek

Nov 10 -- Bruce and Karen Ecke, Hamilton Twp, discharge to Lake Creek trib

-- Sanofi Pasteur, Inc., Pocono Twp, discharge to Scot Run

-- Sites Unlimited, Inc., Pocono Twp, discharge to Paradise Creek

Nov 17 -- Franconia Mennonite Camp, Barrett Twp, discharge to Spruce Mountain Run and Brodhead trib

-- 611 Commercial, Inc., Hamilton Twp, discharge to McMichael Creek-  
Dec 1 -- C & M at Mountain Hollow, LP, Stroud Twp, discharge to Brodhead Creek

Dec 29 -- Revapuri Maharaj Motel Investments, Inc., Smithfield Twp, discharge to Brodhead Creek

### WASTEWATER DISCHARGES

#### Applications

Aug 11 -- Delaware Water Gap Municipal Authority, renewal of discharge to Cherry Creek

-- Mount Airy I, LLC, Paradise Twp, renewal of discharge of 0.22 mgd to Forest Hills Run

### WASTEWATER DISCHARGES

#### Permits

Aug 18 -- Rock Tenn Company, Smithfield Twp, renewal of discharge to Brodhead Creek

Sept 22 -- Pleasant Valley Manor, Inc., Hamilton Twp discharge to McMichael Creek

Oct 20 -- Pocono Twp, new NPDES permit to discharge 2.0 mgd of treated sewage to the Brodhead Creek with temperature and groundwater monitoring requirements.

Nov 3 -- Mount Airy I, LLC, Paradise Twp, discharge to Forest Hills Run

### WATER QUALITY MANAGEMENT (facilities)

#### Applications

July 14 --Smithfield Sewer Authority for the construction of a sanitary sewer force main along East Brown Street.

Aug 18 -- Pocono Twp Supervisors/Dry Sewer Main Project (Phase I) for the installation of 4.5 miles of sewer main in the Swiftwater and Scotrun areas of Pocono Twp

#### Permits

Nov 3 -- Sanofi Pasteur, Inc. Pocono Twp, spray irrigation system

### WATER OBSTRUCTIONS AND ENCROACHMENTS

#### Applications

July 21 - DEPG Bartonsville Associates, LP, for fill in 0.43 acre of wetland and 0.24 acre of waterways for constructing a shopping center and hotel

## Watershed Watch... continued

Sept 1 (Environmental Assessment)

White Heron Lake, Middle Smithfield Twp, for the permanent fill of 0.04 acre of Palustrine Emergent Wetland for the construction of a spillway for the purpose of improving public safety

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Oct 13 – Brodhead Creek Regional Authority, Pocono Twp, to temporarily impact 0.09 acres of exceptional value wetlands along Scot Run to relocate a water main

Oct 27 -- The Spirit of Swiftwater, Inc., Pocono Twp, for construction of access/road crossing in a trib of Swiftwater Creek

-- Buck Hill Falls Company, Barrett Twp, for construction of culverts in a

trib of Buck Hill Creek, installation of sewer and water utility lines and fill of 0.04 acres of EV wetland

-- Rock Tenn Company, Smithfield Twp, for the construction of 580 LF of bank stabilization of the Brodhead Creek and removal of gravel bar blocking an intake pipe

#### Permits

Sept 8—PennDOT, in Smithfield and Middle Smithfield Twp, 13 water obstructions and encroachments in Marshalls and Pond creeks & tribs impacting over 1 acre of wetland

Oct 20 Mount Airy I, LLC, Paradise Twp, for construction of a 6-inch diameter pipe in Mount Airy Lake to supply water to a dry hydrant intake for fire protection

## Spring 2008 Calendar

March 8 – Landscaping for a Healthy Environment, sponsored by Monroe County Conservation District (MCCD), call 629-3061 for details

April 5 – Rain Barrel workshop, sponsored by MCCD, call 629-3061

April 26 - BWA's Native Plant Sale and MCCD's seedling sale

May 16 - WaterWaze, second annual watershed festival for 6<sup>th</sup> graders, Pocono Mountain East

May 18 – Cherry Valley River Ramble, 2-5 pm. Look for details on the BWA website soon.

June 1—Kick off event for Trout Trails and Tails Community Art Project

## New BWA Board Members

**Patricia Kennedy** is an Assistant Professor in the Communications Studies Department at ESU and resides in Stroud Township on McMichael Creek. Before joining the ESU faculty, Pat spent more than 20 years as an attorney, and she holds a Ph.D. in Mass Communications from Syracuse University. Her doctoral dissertation examined "Influences on media coverage of risk: A case study of the Walkerton, Ontario E.Coli Contamination".

**Ken Zinis** is an Environmental Engineer with sanofi pasteur and works in the Health, Safety and Environmental group. He has over 25 years of experience in the petroleum, chemical and pharmaceutical manufacturing industries and is a licensed wastewater treatment plant operator in NJ. Ken resides in Northampton County.

## Welcome New Members

**John & Linda Jo David**

**George & Carol Endres**

**Edward Filipkowski**

**Andy & Nancy Hunter**

**James Pringle**

**William Thorn**

**David & Louise Troutman**

## **Encourage a Friend to Join Today!!!**

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_

### **Circle One:**

Family \$30      Individual \$15      Senior \$10

Student \$5      Contributor \$100

Stream Sign Sponsor \$100      Adopt-A-Stream Site \$250

Other \$ \_\_\_\_\_

### **Return to:**

Brodhead Watershed Association

Box 339, Henryville, PA 18332

The official registration and financial information of Brodhead Watershed Association may be obtained from the Pennsylvania Department of State by calling toll-free, within Pennsylvania

**Brodhead Watershed Association**

**Box 339**

**Henryville, PA 18332**

**U.S Postage**

**PAID**

**Mt Pocono, PA 18344**

**Permit No. 12**



*The Brodhead Watershed Association is a non-profit organization formed in 1989 to promote and preserve the environment of the Brodhead watershed and the water quality of the Brodhead, Cherry, Marshals, McMichael, Paradise, and Pocono creeks and their tributaries.*

Contributing to this issue: Trish Attardo, Carol Hillestad, Theresa Merli, Don Miller, Edie Stevens and John Styk



