

Conodoguinet Creek Watershed Association Newsletter

January 2004

2003 REPORT TO MEMBERS President Gil Freedman

The Creek and your Association has seen changes over the year: After several years of drought, levels were not only back to normal but significantly above, for most of this year.

The Association has changed officers and several people have joined the board or rotated off. I want to recognize your leaders here and below. Evan Jenkins, Ray Stiteler, Diane Hollinger, Jerry Hollowell, John Perry and David Simko. All provide valuable expert advice. Unlike some organization boards and officers, we're not just pretty faces. They are our hard workers and innovators. I congratulate them. There are also regular members (and some non-members) that give of their time to the group.

There are many opportunities to contribute. Join our board and help the environment.

We're proud of our ongoing creek monitoring. Under Secretary Susan Parry's leadership our volunteers give of their time and skills in sampling and research. We've sharpened our chemistry and data-gathering skills with the help of ALLARM at Dickinson College. I'm proud to say our data will probably stand up in court, if need be. Our team consists of: Susan, John Davenport, Wilbur Wolf, Steve Kuhn, Holly Smith, Gordon Perkin, Don Seiple, Diana Bermingham, Chuck Schaefer, Evan Jenkins, Mike Foley, Laura Freedman and myself.

Our biggest pollution concerns are nitrogen and sedimentation. Nitrogen comes from abuse of fertilizer on the farm, golf course and home lawn. Nitrogen also comes from untreated sewage such as septic systems and small sewage plants. Just as important improperly treated sewage is a public health hazard as well.

Sedimentation (mud) comes from older farm practices and construction activity in the Cumberland Valley. With the help of our county Conservation office farmers are keeping their livestock out of streams and away from banks, and practicing no-till cultivation. No-till is a form of mulching that increases crop production and keeps the soil on the farm and retains precipitation. The office also polices builders to assure that the land is protected during construction.

Inadequate planning and regulation, and the resulting suburban sprawl leads to land uses that can hurt the Creek, Susquehanna and Chesapeake Bay. More and more of the land is being made impervious by streets and highways, parking lots, and roofs, including those of trucking terminals and warehouses. The Creek, and its limestone tributaries like Letort Spring creek have remarkable drought resistance, principally due to the great volume of precipitation that ends up in the ground instead of rushing off in storms. Probably more than half our people depend on wells for drinking water. Less area for percolation means less water to the ground and more chance of destructive floods. This can be reduced by making parking lots of porous materials or providing

more swales and retention areas. We should look at reusing already-developed land in our nice towns.

To learn more about groundwater movement in the Valley, particularly from the Yellow Breeches to our drainage, Shippensburg University will be conducting tracing research and we will provide testers.

Construction destroys wildlife habitat. Wildlife is driven away, usually to die.

We've learned that growth and interstate highways are polluting our air. Who would've thought we'd ever have an ozone problem here?

Our Rivers Conservation Plan for the middle reach of the creek is in the final stages. This study of resources can provide a basis for conservation planning.

Under past-President Wilbur Wolf's leadership Good Hope dam was removed in 2001. We've been restoring the banks and exposed riparian areas. Kurt Henry led the Association Creek wade in July that resulted in the collection of up to a ton of trash exposed as water levels return to normal after 150 years. Please check the Greenworks TV website for a nice interview with Kurt at http://www.greenworks.tv/watershedstv/more_information/featuredtopic_conodoguinnet.htm. Greenworks is produced by our own Kelly (Meinhart) Donaldson!

Creek Awareness and Activities: Our general meetings have showcased the state of the Creek, shad update and stream flow dynamics. Field trips went to vernal ponds, and uplands to see wildflowers. Kelly and Andrew Donaldson provide member service and are preparing a new membership brochure. Through Holly Smith's work we're reaching out to the public about our activities. We're providing educational displays and hands-on learning about the creek and its environs, and more. This newsletter, under Jane Earle, offers valuable water resources and watershed information as well as upcoming events; outings, meeting dates and schedules, and more.

Vice President Don Seiple plans our meetings, which are designed for educational impact. Chris Woltemade has developed and maintains our website, <http://www.ship.edu/~cjwolt/ccwa/>. This is a priceless resource.

Under Chris's leadership Shippensburg University students and citizens restored Burd Run, a formerly channelized tributary to the Creek, in Shippensburg. CCWA is contributing signs to the project that will make Burd a learning site through interpretation.

We were treated to a world-class video on vernal ponds and wetland life including salamanders, frogs and birds, at our February meeting. Shot and produced by local naturalist Gene Wingert, the Association is proud to offer the video for sale.

A Creek and Watershed visited and understood is a Watershed protected.

We network with other conservation organizations and State and local government units. Through state Growing Greener support for workshops and conferences we've learned more about how we can protect the environment. Some of these efforts have been directed at young people. I think this is very valuable.

On our watershed, Trout Unlimited stands as a guardian of the Letort. A sister watershed association husbands Big Spring. Big Spring is experiencing a resurgence of quality with the closing of the Fish Commission's hatchery at the headwater. Many native (Brook) trout are now found immediately below the former hatchery.

Shad restoration is problematical. With the breaching of Black Dam their migratory path is now open to the Newville area, but so far none have been found. Low populations passing York Haven below Harrisburg on the river suggests few made it to the Creek mouth. Let's hope for a better year next spring. Shad in the Conodoguinet will be a wonderful resource and evidence that we can live in harmony with the rest of nature.

However when it comes to government environmental regulation and enforcement, there seems to be more emphasis on accommodation, than prosecution, of polluters. It appears publicizing prosecutions could serve as an enforcement tool. We should continue to support these organizations, letting them know that their efforts are appreciated.

Treasurer Mike Foley, despite illness, has provided exemplary service, including overseeing our funds, addressing our insurance needs and keeping the IRS happy.

Gil Freedman, President

Program Meeting: Thursday, January 22, 2004 Waste Management: Protecting the Environment

Cumberland County Solid Waste Coordinator Thomas Imphong will speak to our group Thursday, January 22 at the Stuart Community Center, Carlisle. Municipal wastes and hazardous wastes must be managed properly to protect public health and the environment. Mr. Imphong will speak to the County program including landfills, reducing unauthorized dumps and hazardous waste concerns.

Our program will be held at the Stuart Community Center (formerly the Carlisle Community Center) at 7:00 pm and is free and open to the public. To reach the center, travel west or east on High Street to College Street (Route 74). Go north on College Street two blocks to North Street and turn west (left) on North Street. At the first street on right (Franklin Street) turn right, go two blocks and look for the center, a retired school building, at Lincoln St. on the far right corner. The parking lot is on the north or far side of the building.

For more information about the program, contact CCWA board member David Simko at (717) 730-5535, or visit the CCWA website at <http://www.ship.edu/~cjwolt/ccwa/>.

Conodoguinet Creek Watershed Association To Hold Public Meeting and Pancake Breakfast

Presentation of the Final Rivers Conservation Plan for The Middle Conodoguinet Creek

Saturday, February 7th

At Oak Flat Elementary School, in Newville, PA

The Conodoguinet Creek Watershed Association (CCWA) invites Cumberland County community members to participate in a public meeting and pancake breakfast to celebrate the completion of the *Middle Conodoguinet Creek Watershed Conservation Plan* on Saturday, February 7th At Oak Flat Elementary School, in Newville, PA. The presentation will be free to the public.

The *River Conservation Plan*, funded by the PA Department of Conservation and Natural Resources (DCNR), is the result of a five-year study process undertaken by the CCWA. The study area covers the middle portion of the Conodoguinet Creek watershed including all or part of the Borough of Newville, as well as Upper and Lower Frankford, Upper and Lower Mifflin, West Pennsboro, North and South Newton, Southampton, North and South Middleton, Dickinson, and Penn Townships in the County.

The goal of the study was to develop recommendations encouraging land use planning, including multi-municipal planning to address corridor-wide issues. The report will be a valuable resource for county and municipal bodies in creating and reviewing land use plans and policies for communities in the area. The CCWA welcomes input regarding the final plan from any and all interested parties.

If you would like to hear conclusions from the plan, or to find out more about the Conodoguinet Creek and its watershed, join us for breakfast beginning at 8:00 am.

A buffet will be available, followed by discussion about the plan and its recommendations.

“We are proud of the CCWA volunteer members’ hard work and dedication in protecting the Conodoguinet,” Gil Freedman, President said. “We also understand the pride our community has in the beautiful landscapes in Cumberland County. CCWA is dedicated to working with our fellow residents in helping to preserve the area’s environmental value for future generations.”

If you have questions or plan to attend the event, please contact Susan Parry, CCWA Secretary, at 717-761-1659, or sparry@dejazzd.com; Wilbur Wolf, CCWA Past President, at 717-776-5915 or wewjr@epix.net.

To get more involved with the CCWA, please call Kelly Donaldson, Membership Coordinator, at 717-761-2940, or on the web: <http://www.ship.edu/~cjwolt/ccwa/>.

DEP Brings Together Watershed Partners, Agencies on Bay Plan

DEP Deputy Secretary for Water Management Cathy Curran Myers announced that the department convened a new steering committee of watershed partners and state and federal agencies to oversee the state's efforts to reduce nutrient and sediment loadings to the Chesapeake Bay.

"Pennsylvania is committed to doing its part to restore the Chesapeake Bay," Deputy Secretary Myers said. "More than one-half of the Bay's fresh water flows from the Susquehanna River. "By reducing the nutrients and sediments that flow into our local streams, we will provide even greater benefits to the crabs and oysters in the Chesapeake Bay. Ultimately, this will benefit our Commonwealth as well. We will provide the necessary habitat for the American shad to return to the headwaters of the Susquehanna River, restoring this great fishery to Pennsylvania."

Pennsylvania has embraced the Chesapeake Bay Program for 20 years and has made great strides toward reaching water quality and living resource goals. With the signing of the Chesapeake 2000 Agreement, Pennsylvania committed to removing the Chesapeake Bay from the federal Clean Water Act's list of impaired waters by 2010.

Partners to this commitment include all the jurisdictions in the Chesapeake watershed-Pennsylvania, Delaware, Maryland, New York, Virginia, West Virginia, the District of Columbia. The agreement describes an ambitious process for achieving the task, the cornerstone of which is completion of basin-specific nutrient and sediment reduction tributary strategies by April 2004.

Thirteen Watershed Teams within Pennsylvania's Chesapeake basin will develop the components of the Chesapeake Bay Tributary Strategy. DEP organized the Watershed Teams to facilitate local watershed management planning efforts.

The teams, with help from local governments and citizens, will develop Tributary Strategies from the "bottom up." The strategies will identify Best Management Practices (BMPs) to address nonpoint source nutrient and sediment loadings and the most cost-effective approach to reduce point source nutrient loadings from wastewater treatment plants and industrial waste dischargers.

The Chesapeake Bay Tributary Strategy Steering Committee will support the Watershed Teams by identifying existing and needed resources to ensure implementation, and to assist with the tracking of actual nutrient and sediment reductions. In addition to numerous state and federal agencies, key watershed partners on the committee include the Alliance for the Chesapeake Bay, the Chesapeake Bay Foundation, Pennsylvania Farm Bureau and the Pennsylvania Association of Conservation Districts.

<> For information regarding Pennsylvania's Tributary Strategies and other Chesapeake Bay restoration initiatives, visit the DEP Web site at www.dep.state.pa.us or the EPA's Chesapeake Bay homepage at www.chesapeakebay.net/ .

WATERSHED SPOTLIGHT: "WEEKLY SPLASH"

Heishman Mill Bypass Channel

by Sara Nicholas, American Rivers

Article from POWR Watershed Weekly December 19, 2003

In early February, American Rivers and a group of conservation partners will break ground on a new project designed to take migratory fish around a dam that lies across Conodoguinet Creek in Carlisle, Cumberland County. The project, known as a "nature-like bypass channel," has become a frequent solution to fish passage in Canada and throughout Europe, but has only been a vision of engineers and fishery biologists here in the United States. When completed, the Conodoguinet bypass channel at Heishman's Mill will be the first true bypass completed in this country. A hybrid design in Guilford Lakes, CT, which combines a stretch of bypass channel with two more conventional Alaskan Steeppass fish ladders, was installed last summer by American Rivers and partners in New England on a tributary to Long Island Sound.

The idea of a bypass channel at Heishman's Mill – literally a new section of channel starting below the base of the dam, running inland across the floodplain, and reconnecting at a point above the dam – came from the dam's owner, Will Foshag. After spending the past 40 years restoring the historic grain mill that he purchased in the 1950's, Foshag did not want to see the dam removed. PA Fish and Boat Commission (PFBC) staff has been stocking the Conodoguinet for the past 6 years to reestablish a once strong American shad population. With the Black dam removed last summer, the Good Hope dam removed in 1999, and the installation of a fish ladder at the Carlisle Water Works in 2000, Heishman's Mill dam remains the last blockage on the creek. Letters from PFBC and PA DEP reminding Foshag of his obligation as a dam owner on a migratory creek to provide fish passage, inspired him to research alternatives to dam removal. The first alternative was a standard Denil-type fish ladder, which was already being used on numerous PA creeks and rivers. This method required building large, concrete appendages into the face of the dam on either side of the creek where fish would swim into an open end, travel through a series of small compartments or "baffles" and continue upward until emerging out the end on the opposite side of the dam. According to Foshag who is attuned to the rhythms and sensibilities of the 19th century mill, there were two major objections to a Denil fish ladder — cost and looks. "A small fish ladder can cost about \$250,000 and a larger one up to \$1 million or more," said Foshag. "Costs aside, the sight of a giant cement carbuncle on the dam would be nothing short of ugly."

Further research led him to the bypass channel designs. At one point, Foshag's living room floor was covered with more than 50 boxes of information, research papers, articles in 4 languages, and contacts on the subject. He contacted a leading bypass designer, Pyotr Paraceiwicz at Cornell University, who discussed the idea and thought the site might lend itself well to a workable bypass. Foshag approached American Rivers, where staff were searching for alternatives to the basic fish ladder that would look and perform more like a natural segment of a river. State and federal agency partners, while initially skeptical of an untested technology, soon lent their support. The project was permitted through DEP and PFBC even chipped in some funding. Jim MacBroom, a consulting engineer from CT who designed the hybrid bypass channel at Guilford Lakes, was hired through an American Rivers-NOAA Community-Based Restoration Program grant to complete a design of the bypass at the site. MacBroom has been encouraged by the ease of working along the Conodoguinet, which is relatively flat with a wide, undeveloped floodplain, unlike the highly urbanized and narrowly constricted rivers he worked with in New England. Foshag's neighbors

across the creek, Charlotte McTeigue and Marshall Leopold, have even given up several acres of their own creek-front property to accommodate the new channel that will cut through their meadow before it reenters the main channel of the creek.

Photo by American Rivers



Many groups are watching the development of the bypass, hoping it will provide landowners with an environmentally beneficial alternative to fish ladders in cases where a dam cannot be removed. Three colleges have already contributed to the project. Students at Shippensburg University under Professor Chris Woltemede did a survey and mapping of the site to provide a base map for the project. Students at Bucknell University's engineering department have contributed in two ways. First, a group of civil engineering students designed and built a walking bridge to span the new channel so that landowners would have vehicle access for maintenance, mowing and dam repair.

The bridge will be brought to the site and installed once the bypass is completed. Second, another set of Bucknell students under visiting Professor Bruce Savage modeled river flows to estimate the optimal size, substrate and other design elements of the channel to benefit American shad and to protect it against instability and erosion. Most recently, the mill owner has worked with students at Dickinson College in Carlisle to design an ongoing maintenance and monitoring project for the site. Researchers are eager to find out if and how well the channel passes target species such as American shad, as well as resident fish like suckers and small-mouth bass. American Rivers is currently looking for groups interested in performing monitoring and maintenance programs once the bypass is completed next summer.

“There are three basic elements of a bypass channel. “The channel itself is an extension of the creek, like an oxbow or a side channel, that passes river water, debris and sediment downstream and fish and other riparian species upstream and downstream.”

The channel is sloped on the sides and armored with river rock on its sides and bottom to prevent erosion. The opening of the channel below the dam involves a new cut into the stream bank and must be oriented to the main channel in such a way that fish can find it and be attracted in by the water flowing out of it. Finally, the top of the bypass channel cut into the bank upstream of the dam must have a water control structure – or head gate – to regulate the volume of flow through it. At very high flows, the bypass channel must be protected from too much flow volume that would wash out or blow out the channel, or scour out its protective rock substrate. Some bypass channels are only open to the creek during the migratory season, which in PA is from mid-April to mid-June. The bypass at Heishman's mill will be approximately 500 feet long, which allows a gradual rise that can accommodate the target species, American shad, which are notoriously poor at swimming up steep grades. It will be six feet wide, and lined with native stone. The channel will be divided into 6 or more sections, creating riffle areas between deeper pools where fish can rest before they rise to the next pool. The sides of the channel will be reinforced with large rock and boulders to armor them against high flows, flooding, and potential scouring. The design also calls for native shrubs

and trees along the channel to help anchor the channel banks and to augment wildlife habitat. The site will be available to interested researchers and students on request once it is operating. For more information, contact Sara Nicholas at snicholas@amrivers.org.

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