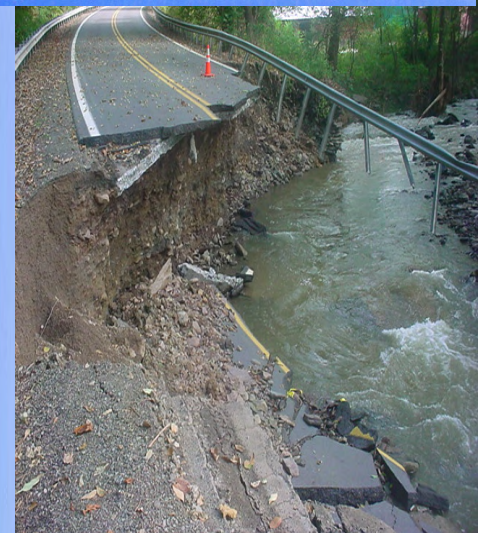


The Wyoming County Conservation District's:
9th Annual Fall Resource Tour
"Stream Corridor Management"





The Wyoming County

Conservation District Staff

Charlotte Severcool – District Manager
Bernie Scalzo – Agricultural Conservation Programs Coordinator
Doug Deutsch – Watershed Specialist
Dave Taylor – Resource Conservation Specialist
Dillon Marino – Stream Technician
Paul Hovan – Stream Technician
Jullee Chamberlain – Administrative Assistant
Laura Anderson – Environmental Education Coordinator
Carol Owens – Resource Planner/Information Systems Specialist
Don Overdorff – West Nile Virus Program Coordinator

Mission Statement:

“The Wyoming County Conservation District strives to maintain, improve, and sustain the natural resources of Wyoming County while promoting conservation based on education, planning, cooperation, and involvement of all citizens of the County.”

Stream Corridor Management Tour

Introduction

The stream corridor is an interaction point for water, energy, vegetation, and organisms (Fig.1). The movement of water provides critical functions essential for maintaining life such as cycling nutrients, filtering contaminants from runoff, absorbing and gradually releasing floodwaters, maintaining fish & wildlife habitats, recharging groundwater, & maintaining stream flows.

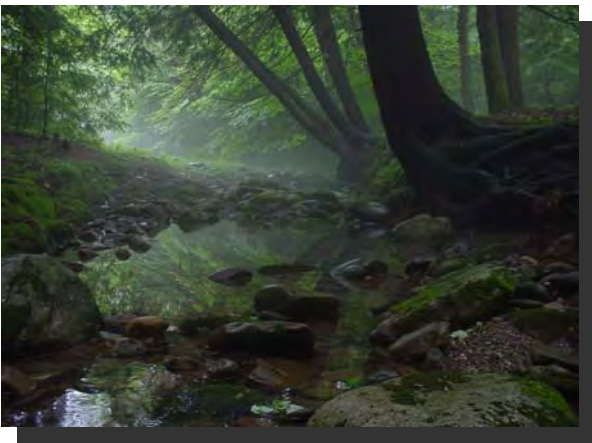


Figure 1: Water, vegetation, energy, and organisms meet and interact within the corridor. (Bowmans Creek)

Importance of stream corridor management

Pennsylvania has over 80,000 miles of rivers and streams that, comprise corridors of great value. Streams and stream corridors evolve with and in response to surrounding ecosystems. Changes within a surrounding ecosystem will impact the physical, chemical, and biological processes occurring within a stream corridor. Stream systems normally function within natural ranges of flow, sediment movement, temperature, and other variables, in what is termed "dynamic equilibrium." When changes in these variables go beyond their natural ranges, dynamic equilibrium may be lost, often resulting in adjustments in the ecosystem that might conflict with societal needs. In some

circumstances, a new dynamic equilibrium may eventually develop, but the time frames in which this happens can be lengthy, and the changes necessary to achieve this new balance significant.

Trees and shrubs along streambanks provide shade to keep water cool and provide cover, food, and spawning grounds for aquatic life. Wildlife such as deer also need trees and brush for cover and food. This area of land is called a riparian buffer. The riparian buffer protects streambanks from erosion and filters out sediment and pollutants before they reach the water. Maintaining a riparian buffer of at least 50 feet is a very effective method of stream corridor management.

Trampling by livestock erodes streambanks (Fig.2). Runoff carrying manure can contribute to the pollution of surface and groundwater. The following are ways to prevent this:

- ◆ Restrict farm animals from streamside areas with fencing.
- ◆ Avoid excessive runoff through proper pasture management and land clearing activities.
- ◆ Establish watering and feeding areas for animals away from slopes leading to the waterways.

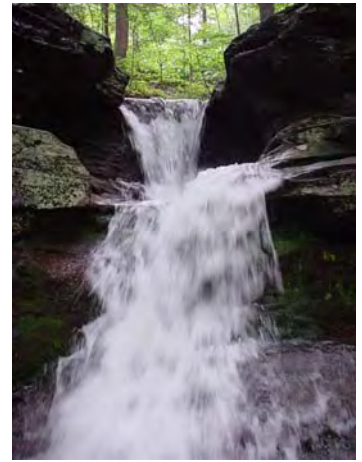
There are many ways to protect and properly manage the stream corridor. We will be displaying some of our recent stream corridor management/improvement projects on this tour today.

Figure 2: Livestock degrading streambank.



This tour was made possible by a PA Association of Conservation Districts (PACD) Chesapeake Bay Educational mini-grant.

Wyoming County Conservation District Stream Corridor Management Tour October 12, 2007



Tour Schedule

- 8:30 A.M. - Buses leave Tunkhannock High School
8:45 A.M. - Buses pick up others at Conservation District Office
9:05 A.M. - 1 - Byrd Hill Road - Dirt & Gravel Road Project
10:00 A.M. - 2 - Mehoopany Creek Stream Restoration Project
10:50 A.M. - 3 - Jenks Road - Joint project with FWS & NRCS
11:15 - 12:00 P.M. - ----- Lunch at Lazybrook Park -----
12:25 P.M. - 4 - S.J. Bailey Apartments (West Nile Virus)
1:05 P.M. - 5 - Kobylski Farm - Agricultural BMPs
2:00 P.M. - Return to Tunkhannock High School



Dirt & Gravel Roads Pollution Prevention Project

Byrd Hill Road – Meshoppen Township



Byrd Hill Road Dirt & Gravel Road Project – Meshoppen, PA

The Dirt & Gravel Roads Program is a cooperative program between the State Conservation Commission (SCC), the Wyoming County Conservation District, & the local municipalities.

Sediment as a result of soil erosion is the greatest source of pollution, by volume, to the waters of the Commonwealth. The many thousand miles of dirt and gravel roads throughout the state contribute greatly to this harmful form of water pollution. This effective program is designed to encourage rural municipalities to implement environmentally sensitive road maintenance practices to help reduce the amount of sediment entering our streams.

The project was about 2500 feet in length and was completed for approximately \$21,000. The project involved the use of **DSA** or Driving Surface Aggregate, which is a mixture of crushed stone developed as a wearing course for unpaved roads. The **DSA** was laid down with a paver, followed by a roller. The project also included the rehabilitation of 3 cross pipes, the installation of 1 new pipe.

District Manager Charlotte Severcool will give opening remarks.

Resource Conservation Specialist Dave Taylor will discuss the Dirt & Gravel Road program and explain how projects are selected.



Cross Pipe – Before



DSA is being applied using a paver.



Cross Pipe – After

Mehoopany Creek Streambank Restoration Project

The recent flooding events have caused many individuals to demand that our streams be cleared of all debris, have the streambeds dredged and channelized, and in some cases, build levees along streams to confine the stream to an unnatural, narrow corridor.

Stream hydrologists warn that dredging, channelizing and building levees along our streams only causes the water to travel faster downstream and provides stormwater with more energy to further erode streambanks – which in turn fills the streams back up with more debris creating the dilemma of having to clean up all over again!

We can continue to take a reactive approach to every storm event by spending millions of dollars on repairs to our streams or we can take a proactive approach by investing an equivalent sum into more effective watershed management practices.

Thanks to the hard work and dedication of the Mehoopany Creek Watershed Association, we are starting utilize more effective watershed management practices. The utilization of natural stream design principles that direct the force of flowing water away from the streambank and into the center of the stream, nearly 2,000 feet of the north branch of Mehoopany Creek has been restored.



Channel plug to maintain stream channel dimensions.



Rock cross-vane to control the stream's grade and flow.

Lars Lundin, president of the Mehoopany Creek Watershed Association will discuss the project's history and future restoration plans.

Dillon Marino and Paul Hovan will discuss natural stream design techniques.

For more information visit : www.mehoopanycreekwatershed.org

Emergency Stream Restoration – Joint Agency Project Jenks Road Fly Fishing Area – Eaton Township



This project is near a very popular fly fishing area on Bowmans Creek. Prior to the flood events experienced during June 2006, the streambank was protected with large R8 size rip-rap. The streambank also had several rows of mature trees and shrubs. After the flood, the stream had encroached on the bank about 20 feet, eroded away all of the rip-rap, and deposited a large amount of gravel in a deep pool section of the stream. The stream has expanded so much that it has posed a threat to a nearby residence. The USDA NRCS, US Fish & Wildlife Service, and the Wyoming County Conservation District have partnered together for a restoration project.

Inspections performed by the USDA NRCS and the Wyoming County Conservation District revealed that because of the proximity of the nearby residence (less than 50 feet), the site would be eligible for Emergency Watershed Protection (EWP) funding offered by NRCS.

The EWP portion of this project will include the placement of approximately 250 feet of rip-rap, relocating old rip-rap, and moving some gravel deposition from the center of the stream channel to the toe of the eroding streambank.



When the EWP portion of the project has been completed, the US Fish & Wildlife Service and the Wyoming County Conservation District will continue working both upstream and downstream to stabilize this section of the stream channel. This portion of the project will start just downstream of the Route 292 bridge over Bowmans Creek, and continue downstream about 5000 feet. This will involve the placement of 22 rock vane structures, several stream channel plugs, and geo-textile sills. The funding for this work comes from a Federal Appropriation for stream restoration in the Tunkhannock and Bowmans Creek Watersheds.

Watershed Specialist Doug Deutsch will discuss the Emergency Watershed Protection project.

West Nile Virus Program

Samuel J. Bailey Apartments – Nicholson Borough



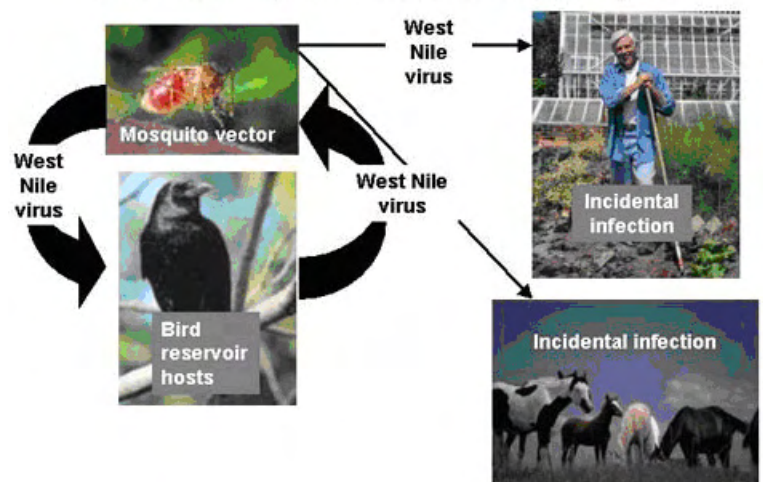
What is West Nile Virus?

West Nile virus is a mosquito-borne disease that can cause encephalitis, a brain inflammation. West Nile virus was first detected in North America in 1999 in New York, and in Pennsylvania in 2000. Prior to that it had only been found in Africa, Eastern Europe, and West Asia. Infected mosquitoes pass the virus onto birds, animals and people. West Nile virus cases in Pennsylvania occur primarily in the mid summer or early fall, although mosquito season is usually April-October.

Where do mosquitoes breed?

There are about 60 different species of mosquitoes in Pennsylvania. While most do not transmit West Nile virus, several mosquito species have been found to transmit the virus. Mosquitoes lay their eggs in stagnant water. Sources of stagnant water can be found in many places around the home or near streams. Weeds, tall grass, shrubbery and discarded tires also provide an outdoor home for adult mosquitoes. By eliminating places for mosquitoes to breed, we can go a long way to prevent West Nile virus.

West Nile Virus Transmission Cycle



How does the West Nile Virus Program work?

The West Nile Virus Coordinator, under the direction of the County Commissioners and the Conservation District, administers the Program. The focus of the program is to inform the public through educational programs and to monitor Wyoming County for the West Nile Virus by trapping mosquitoes and dipping for larvae. The program also involves the treatment of areas infested with vector species of mosquitoes in compliance with CDC (Center for Disease Control) Guidelines. The Adult mosquito samples are routinely collected and sent to a lab to be tested for West Nile Virus.

West Nile Virus Program Coordinator Don Overdorff and West Nile Virus Program Technician Sara Gannon will discuss the County's West Nile Virus Program.

Kobylski Farm – Agricultural BMPs



John & Rich Kobylski operate this farm near West Nicholson, PA in Wyoming County. They consulted the Wyoming County Conservation District and NRCS for assistance to improve their grazing operation. They have recently made several improvements to their operation including the addition of fencing, troughs, agricultural stream crossings, and riparian buffer plantings.

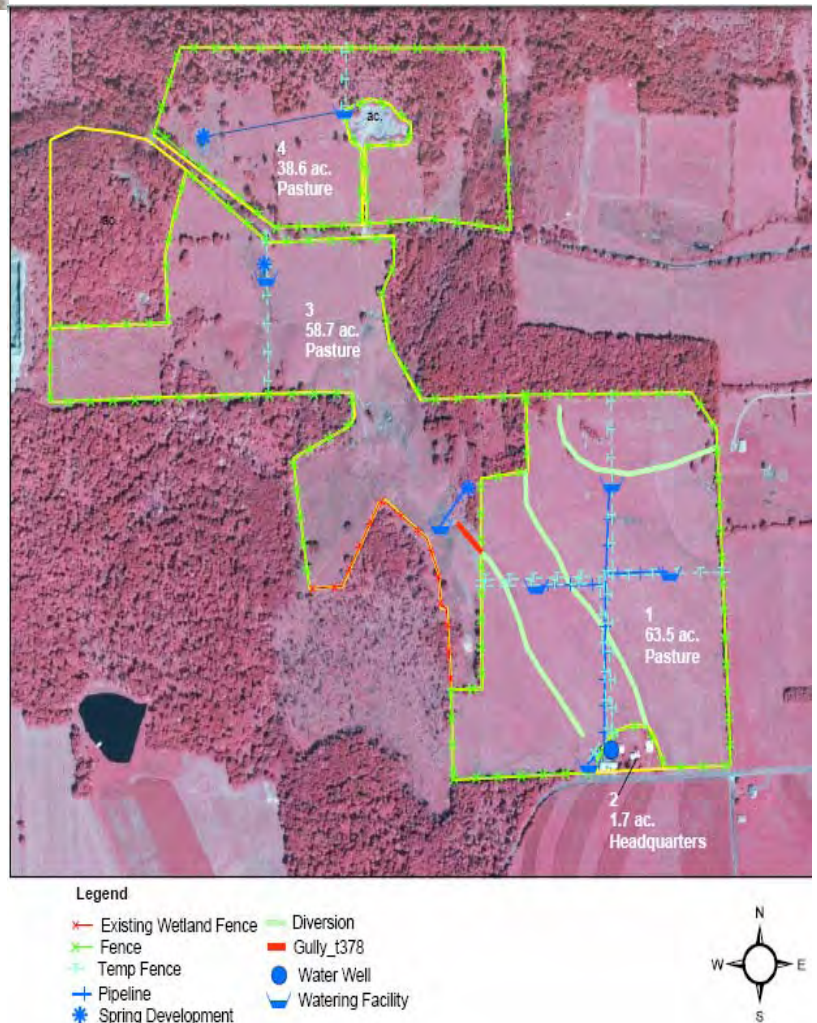
The Kobylski's worked closely with the County Farm Service Agency (FSA) and the Chesapeake Bay Foundation to enroll in the CREP program. The CREP program provided funding for many of the improvements made to their grazing operation.

What is the CREP program?

The Conservation Reserve Enhancement Program (CREP) is run by the FSA. The program provides funds to farmers for the purpose of preserving lands once used for agriculture, with the goal of introducing and encouraging plant life to prevent erosion and provide habitat.

The Kobylski's have created about 15 acres of riparian buffer (about 1,800 trees & shrubs) on this farm tract. Also, with the help of the CREP program, they have installed about 6200' of fencing, a new well, a stream crossing, and several new troughs.

Another source of funding for this project came from the Susquehanna County Conservation District Growing Greener Grant. This grant helped with several parts of this project including about 6500' of fencing. The Wyoming County Conservation District also contributed some PA DEP Chesapeake Bay Special Projects funding to assist the Kobylski's with funding their new watering system.



Jen Johns, the Chesapeake Bay Foundation's Stream Buffer Specialist will discuss some of the agricultural BMPs on this farm tract.