

# Re-plumbing the Chesapeake Watershed: Improving Roadside Ditch Management to Meet TMDL Water Quality Goals



STAC/USDA Workshop

9-10 October 2014

Easton, MD

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*and  
habitat*



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# Re-plumbing the Chesapeake: Workshop Steering Committee

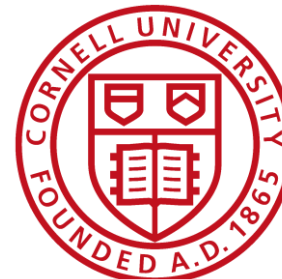
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- **Kathy Boomer** (co-leader), The Nature Conservancy
- **Rebecca Schneider** (co-leader), Cornell University
- **Steve Bloser**, Penn State
- **Ray Bryant** (sponsor), USDA-ARS
- **Peter Clagget**, USGS
- **Matt Ellis** (support), Chesapeake Research Consortium
- **Natalie Gardner** (support), Chesapeake Research Consortium
- **Alan Girard**
- **Norm Goulet**, Northern Virginia Regional Commission
- **Jennifer Greiner**, USFWS
- **Katherine Bunting-Howarth**, Cornell University
- **Amy Jacobs** (moderator), The Nature Conservancy
- **Donnelle Keech** (facilitator), The Nature Conservancy
- **David Orr**, Cornell University
- **Nicholas Parlato** (support), Cornell University
- **Michael Slattery**, USFWS

*Thank you!*

# Re-plumbing the Chesapeake: Workshop Sponsors

*Thank you!*



# Re-plumbing the Chesapeake: Welcome / Opening Remarks

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**Mr. Dirck Bartlett**

Talbot County Council



**Dr. Robert Summers**

MD Secretary of the Environment

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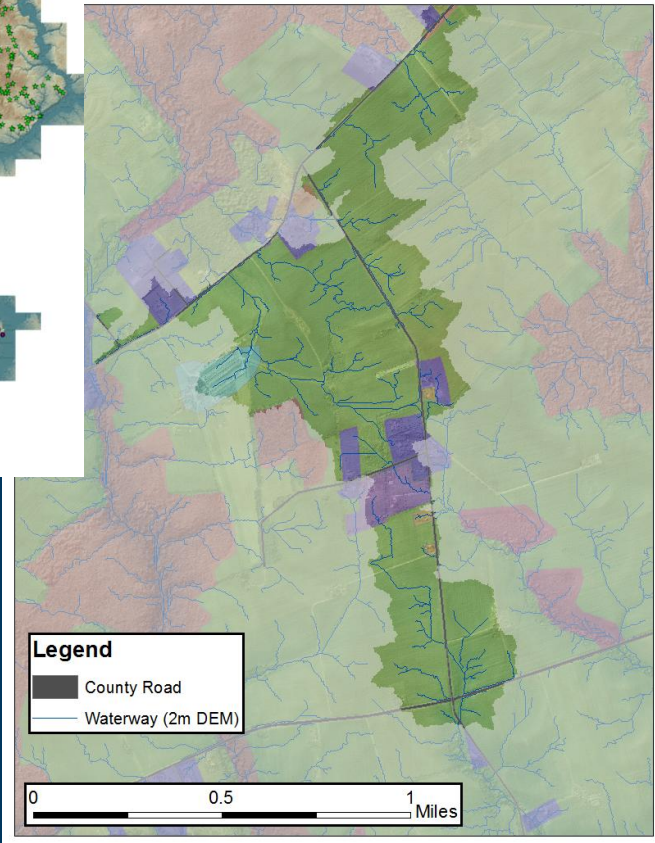
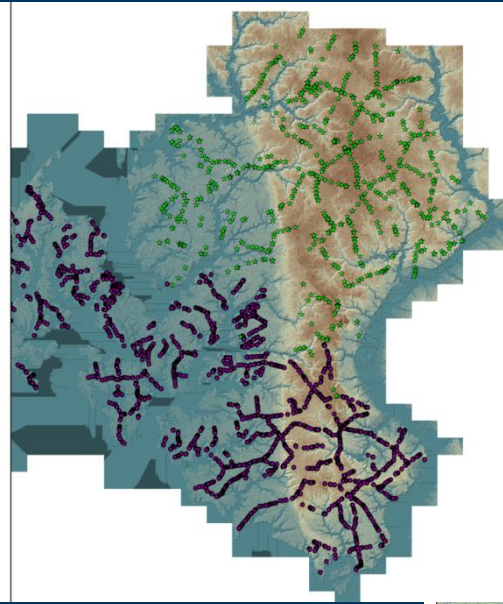
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# Re-plumbing the Chesapeake: History of Workshop Development



## Talbot Co Roadside Management Program

- More than **1000** County Road opportunities to mitigate ag & urban impacts, each year, intercepting up to **4,000 lbs TN**, **500 pounds TP**, and **10 tons of sediment**.

## QUESTIONS:

- Reliability of targeting?
- Best practice design?
- Acceptability by MDE/CBP?

# Re-plumbing the Chesapeake: History of Workshop Development

## Roadside Ditches

### Best Management Practices to Reduce Floods, Droughts, and Water Pollution

We all live in a watershed, and precipitation is the lifeblood of a watershed. When rainfall pounds impervious surfaces and compacted soils, it runs off rapidly instead of percolating down to the groundwater. The runoff can contribute to flooding and carries pollutants that degrade water quality.

Hundreds of miles of ditches criss-cross each watershed. While the ditches drain roads, they also efficiently intercept the runoff from adjacent hillslopes, capturing about 20 percent of the runoff in each watershed. Ditches rapidly shunt the water to streams, where it is discharged, like a high-velocity faucet. Ditches are also conduits of road salts, fertilizers, and viable pathogens from lawns and farms to streams. Unprotected ditches are a significant source of suspended sediment and gravel, turning the streams brown with each storm event. The ditch outputs disturb the natural stream flow and cause erosion along the stream banks.

The end results of these cumulative impacts are:

- increased flooding
- declining groundwater tables
- drier streams and empty wells
- greater streambank erosion
- increased pollution in our drinking water supplies

The management practices for roadside ditches, instituted nationwide almost a century ago, have been implemented in large part without considering the impacts on downstream water resources. Growing water scarcity and anticipated impacts from climate change, however, call for better water stewardship. We need to balance the value that ditches provide in protecting our roadways with the negative effects on our water.

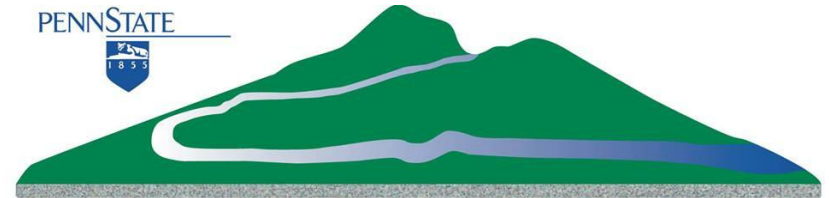
This fact sheet provides guidelines for adjusting ditch management practices to improve the quantity and quality of our water resources.



Recent research at Cornell University indicates roadside ditches are a previously unrecognized but critical contributor to flooding and pollution of our waters.



Cornell University



## Center for Dirt and Gravel Road Studies

### Major Changes in store for PA Dirt and Gravel Road Program Municipal Fact Sheet

Feb 2014

**Program funding increased from \$4 million to \$28 million annually!**

**Paved low traffic roads are now eligible for funding too!**

#### Summary for municipalities:

- Additional funding expected to be available starting in July of 2014.
- Funding available for paved (& tar-and-chip) roads with less than 500 vehicles/day.
- Program still focuses on water quality, simple applications, and local control.
- Training certification still required to apply for funding, and valid for 5 years.
- 6 Regional trainings to be held in 2014, see below.
- Contact your Conservation District for county-specific details.

#### 6 Regional ESM Trainings in 2014: You must be ESM certified to apply for funds!

Applicants must have been certified through the Environmentally Sensitive Maintenance (ESM) training within the past 5 years to apply for funds. Six regional ESM trainings with a capacity of 200 attendees each have been scheduled for the first half of 2014. If you have attended the ESM training

#### Dates and Locations:

March 26-27: Reading	April 22-23: St. College
April 30-May 1: Greensburg	May 6-7: Wilkes-Barre
May 21-22: Wellsboro	June 17-18: Titusville



# **Re-plumbing the Chesapeake: Workshop Goals & Objectives**

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- **Increase awareness of water quality/habitat impacts and opportunities associated with roadside ditches**
  - Review field and modeling inventories
  - Share management strategies
- **Develop management recommendations**
  - Identify barriers and opportunities to promote science-based management strategies

# Re-plumbing the Chesapeake: Workshop Structure

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- **SESSION I: Sizing Up the Problem**

Rebecca Schneider (NY)

Zack Easton (VA)

Beverly Wemple (VT)

Robin Van Meter (MD)

- **SESSION II: Mitigation Strategies**

Steve Bloser (PA)

Laura Christianson (MS)

David Wick (NY)

Jason Keppler (MD)

Ray Bryant (PA/MD)

William Ryall (MD)

Bernard Sweeny (PA/MD)

- **SESSION III. Barriers to Implementation**

Jeff Sweeney (CBP)

David Orr (NY)

Kari Dolan (VT)

Robert Shreeve (MD)

# Re-plumbing the Chesapeake: Workshop Discussion

## Re-plumbing the Chesapeake: Workshop Structure

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Beverly Wemple (VT)	Robin Van Meter (MD)

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Jeff Sweeney (CBP)	David Orr (NY)
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# Re-plumbing the Chesapeake: Workshop Structure



# Re-plumbing the Chesapeake: Workshop Discussion



- I. How do roadside ditch impacts & practices vary across the Bay watershed?
- II. What is needed to improve roadside management across the Bay watershed?



# Re-plumbing the Chesapeake: Workshop Discussion



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## Workshop Products:

- **Published STAC Report**
  - Share information
  - Provide recommendations
    - Science needs
    - Regulatory opportunities
    - Local opportunities
  - Outline next steps
- **Develop Information Network**

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