



# 2015 White Clay Creek National Wild and Scenic River Steering Committee Update



**WHITE CLAY CREEK**  
**National Wild & Scenic River**

*Ours to Enjoy. Ours to Protect.*

Promoting clean water through outreach, restoration, and land preservation.



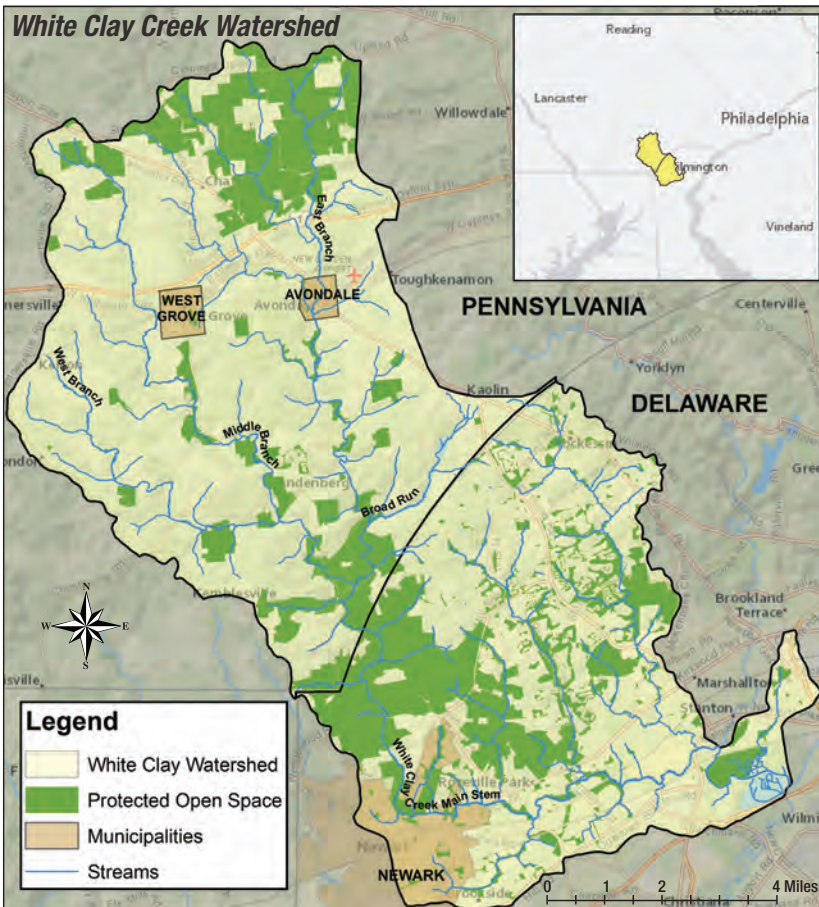
Curtis Mill Park Floodplain Buffer Enhancement © Kristen Molfetta

Welcome to the *White Clay Creek National Wild and Scenic River Program Update*. The Watershed Steering Committee presents our 2015 accomplishments to watershed partners, legislators, and our community.

## Land Use and Water Quality, It's All Connected

Water is everywhere; it lies beneath us, above us, and across the landscape. It falls from the sky, runs off our roofs and paved surfaces, rolls across the land and eventually ends up in our waterways. During its travels, water picks up and carries with it all sorts of things, like fertilizers applied to yards and farms, animal manure and human waste, and other pollutants. We all live in a watershed, an area of land that drains water, but it's not always easy to make the connection between our everyday actions on land and the quality of the water we rely on to drink and carry out everyday activities.

Often times the first step to protecting water is protecting land. The White Clay watershed is mainly comprised of private lands making it challenging to permanently protect additional land within the watershed. Through conservation and agriculture easements, and willing landowners, Wild and Scenic River funds have permanently protected over 20,000 acres of land in the watershed, and another 640 acres are currently under consideration for permanent protection in the next year.



## Partnership Wild and Scenic Rivers

The 1968 Wild and Scenic Rivers Act calls on the nation to preserve select rivers in free-flowing condition. Rivers are chosen on the basis of outstanding values such as scenic, recreational, ecological, geologic, historic or cultural.

Most National Wild and Scenic Rivers flow through federal lands, but Partnership Rivers flow through privately held lands or lands owned by local or state governments. The National Park Service provides funds and staff assistance to communities and local and state representatives to protect and manage these rivers for the benefit and enjoyment of present and future generations.

White Clay Creek was designated a National Wild and Scenic River by an Act of Congress signed into law by President Clinton in October, 2000. In 2014, nine additional stream miles were added to the original designation of 190, bringing the total miles protected under the Act to 199 miles.

In 2005, approximately 17% of the watershed was protected open space. Today, it is over 20,000 acres, or 29%.

Much of the protected lands contain high quality riparian (or streamside) forest buffers. Streamside plantings help keep unwanted stuff out of the water, the wider the buffer the better they perform. Buffers also improve stream habitat. This is important because streams with intact buffers and healthy aquatic habitat can process some of the pollutants that

eventually make it into the water thereby preventing them from moving downstream and eventually into the Delaware Bay.

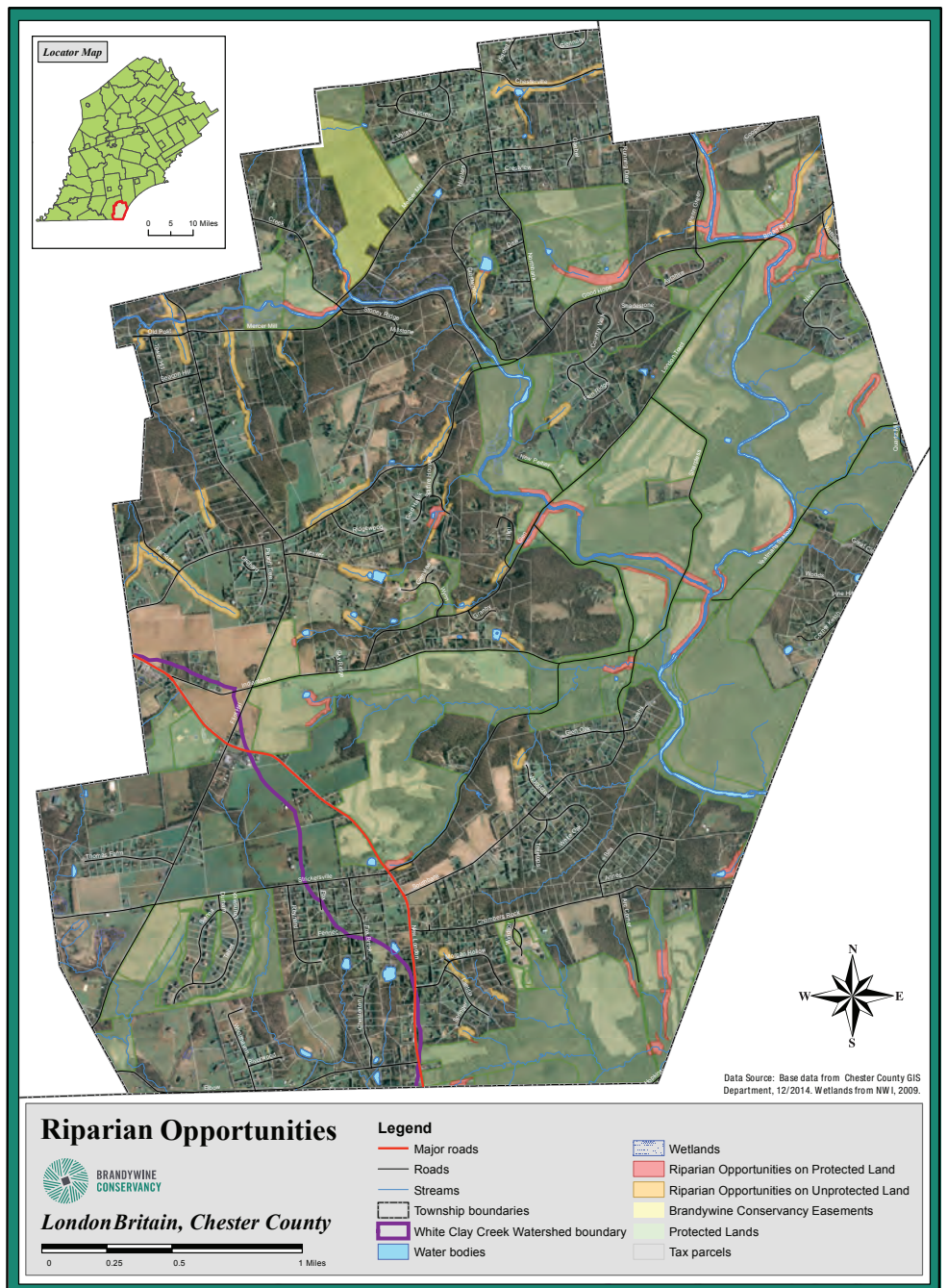
In 2015, our partner, Brandywine Conservancy completed GIS mapping to identify gaps in streamside forest buffers throughout the entire White Clay watershed. To do this, the stream layer was superimposed on 2013 aerial photography and a one hundred foot-wide riparian buffer zone was digitized, based on a visual assessment of the vegetation as either having an existing forested buffer or as lacking a forested buffer, a riparian gap. These more refined maps will enable us to take a closer look at missing links and their connectivity to surrounding protected lands and critical habitat areas, allowing us to focus reforestation efforts in areas that will create more interior forest and fewer edges, creating a healthier and more stable forest.

In 2016, we will fine-tune these maps by combining the GIS gap analysis with the updated Natural Resource Heritage Inventory records and scaling reforestation projects based on ease of installation for each municipality. Priority areas for reforestation, as well as identify smaller shovel-ready projects (i.e. gap of less than 3 acres) that the municipality can undertake on its will be identified. The gap analysis complements the more scientifically rigorous White Clay Creek Reforestation Plan (2009) but is more action-oriented with the goal of getting more trees into the ground in multiple locations and as quickly as possible.

“Of the many best management practices that improve the quality of waters and habitats ... the single best may be the restoration of riparian forest buffers along stream banks to provide critical barriers between polluting landscapes and receiving waterways.”

— Cindy Dunn, Secretary,  
Pennsylvania Department of Conservation  
& Natural Resources

Two buffer projects installed this year included the New Garden Township Park (Landenberg, PA) streamside buffer restoration, and the Curtis Mill Park (Newark, DE) floodplain buffer enhancement. The former project was funded through a Pennsylvania Department of Environmental Protection Growing Greener Grant and involved the installation of native trees and shrubs, establishment of a no mow buffer zone, and enhanced wetland plantings along a 1500' length of a headwater stream running through the park. The Curtis Mill floodplain enhancement was funded by the White Clay Restoration Fund (Delaware tax check off), students from Newark High School installed native trees and shrubs in a one-acre area along the main stem of the White Clay and are returning this spring to install pollinator-friendly plants in the open meadow area. The students gained a hands-on conservation experience to complement their in classroom studies. Additionally, the students were awarded educational funding to attend an applied watershed science field trip to Stroud Water Research Center.

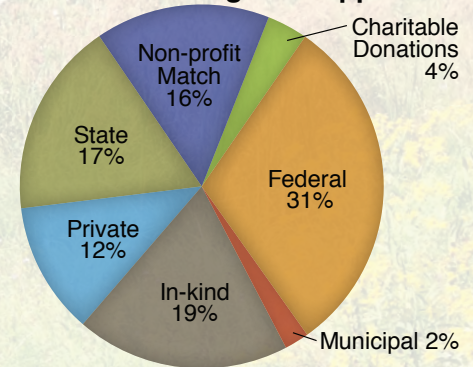


# White Clay Wild and Scenic Maximizes Federal Dollars!

Like all Partnership National Wild and Scenic Rivers, we leverage National Park Service funding with in-kind contributions from state, county, local governments, partner organizations, and the community. In 2015 White Clay partners spent \$72,721 in federal funds to leverage \$238,130 cash and in kind services. In other words, for every \$1 spent in federal funding an additional \$3.27 was leveraged for a return on value of 327%.

A special thanks to donors of monetary assistance and in-kind services provided to the Steering Committee in 2015: NPS (\$72,721), Suez (\$14,222), PA DEP (\$9,300), White Clay Creek Restoration Fund Contributions from Delaware tax filers (\$8,213), DNREC (\$3,285), Municipal support (\$5,180), Mushroom Farmers of Pennsylvania (\$1000), Delaware State Employee Charitable Contributions (\$219), other smaller contributions and approximately 1625 hours of professional and volunteer assistance with land preservation, ecological restoration, reforestation planning, events, outreach, mailings, and community volunteer time valued at \$51,834.

## FY2015 Program Support



## Fecal Contaminants and Water Quality

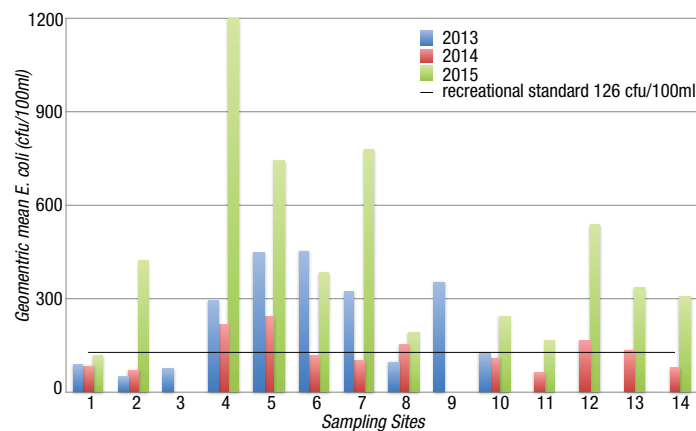
Fecal bacteria are a potential issue in White Clay streams. To understand the extent of this contaminant the Wild and Scenic Program conducted stream monitoring at fourteen locations during the recreational swim period (June-September) in the Pennsylvania portion of the watershed during 2012-2015. The data collected indicates high levels of fecal bacteria and correlates with preliminary results from USGS sampling in the White Clay Creek Preserve, and in 2014 sixty seven stream miles were added to the Pennsylvania Department of Environmental Protection impaired streams list for exceeding water quality standards for bacteria. Land use maps were created for the areas draining to each of our sampling sites to help determine potential sources of contamination. In 2016, we will continue sampling for fecal indicator bacteria and conduct additional testing using genetic markers to determine the presence or absence of suspected bacterial sources. Determining which bacterial sources are present in the water can lead to more cost effective restoration efforts targeted at those areas that will be most beneficial in terms of reducing pollutants.

Another fecal contaminant of concern is *Cryptosporidium*, a microscopic parasite commonly found in cow manure, and known to cause gastroenteritis (diarrhea, vomiting, cramps). In 2014, the City of Newark, SUEZ corporation, and the Wild and Scenic Program partnered with the Chester County (PA) Conservation District and a local dairy farmer to keep *Cryptosporidium* out of the water by implementing several best management practices on his farm, including a streamside buffer. We partnered again in 2015 with the Brandywine Conservancy and another local farmer to install a watertight containment structure for liquid manure storage with a leak detection line, and an improved heavy-use area at his dairy farm in London Grove Township, thereby minimizing the potential spread of *Cryptosporidium*.

## Helping Municipalities Achieve Clean Water.

The White Clay Creek Wild and Scenic River Program strives to help municipalities with their regulatory requirements to manage stormwater issues through land preservation and protection, public outreach and implementation of best management practices (BMPs). White Clay municipalities are required by the state to address stormwater problems within their political borders in accordance with the federal Clean Water Act. They are in a tough position that holds them responsible for cleaning up the streams to meet state water quality standards with very little resources to properly do such clean up. By leveraging our resources we will continue to help watershed municipalities implement their stormwater management and pollution requirements.

*E. coli* concentrations in the Pennsylvania portion of the watershed 2013-15

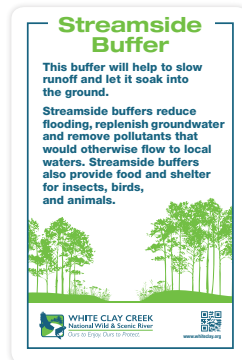


“Stormwater runoff is one of the largest water-quality problems that we face in the White Clay.”

— Shane Morgan,  
White Clay Watershed Coordinator

## Community Outreach

- Worked with University of Delaware Water Resources Agency to create the 2016 State of the White Clay Watershed Report.
- Created quarterly content for the New Garden Township e-newsletter on watershed-related topics directly reaching 470 township residents, and the London Grove Township newsletter reaching 8000 residents annually.
- Co-hosted a gathering of over 20 stakeholders interested in coordinating on a public outreach campaign for the entire Christina Basin, a 565 square mile, bi-state watershed that includes the White Clay.
- Co-produced the second video in a series entitled *Christina Connections: Why does clean water matter to you?*
- Removed 35 large bags of dump waste and approximately 56 bags worth of invasive species in White Clay Creek Preserve as part of the Christina River Watershed Cleanup with the help of 48 volunteers.
- Hosted our largest public outreach event, White Creek Fest which included 1400 attendees, the sale of 16 rain barrels sold, and the distribution of 250 reusable water bottles provided by SUEZ.
- Designed interpretive watershed signage for the Hunt of Louviers stormwater basin retrofit site (Newark, DE), and Goddard Park rain basins (London Grove, PA).
- Designed educational signage for nine specific Best Management Practices to be used throughout the watershed.
- Completed an inventory of the current White Clay Wild and Scenic road signs. Designed updated replacement road signs to be installed in 2016 by watershed municipalities.
- Co-presented 'Cleaning Water with Native Plants: Successful Detention Basin Retrofits' with Claudia West to 80 attendees at the Society for Ecological Restoration Mid-Atlantic Chapter's 10th Annual Conference.
- Exhibited at Newark Community Day with over 8,000 residents attending.
- Set up a discovery station during the Tri-state Marker Trail Dedication and Celebration Hike reaching over 250 hikers.
- Exhibited at the White Clay Watershed Association Annual Meeting to over 80 attendees.
- Updated the Whiteclay.org website and created a Mailchimp e-newsletter to deliver information to 320 subscribers.
- Continued to update social media presence on Facebook, Twitter, and Flickr.



New Garden Park Planting  
© Kelsey Moxey

## Watershed Monitoring and Projects

- Conducted bacterial sampling at 12 locations along the West, Middle, and East Branches in PA. Approximately 120 samples were collected and analyzed for *E. coli*.
- Led an enhancement planting of the Goddard Park Rain Gardens after winter vole damage with 10 volunteers from Bank of America, funding provided by SUEZ.
- Installed 9,500 sq. ft. of a water-tight containment structure for liquid manure storage and a leak-detection line, and an improved heavy-use area at a concentrated animal feeding operation in London Grove Township, PA.
- Planted native trees and shrubs along 1,500 linear feet of a second order stream in New Garden Township, PA (PA DEP Growing Greener Grant Project).
- Installed native trees and shrubs along 300 linear feet (1 acre) of the main branch in Curtis Mill Park, Newark, DE (White Clay Restoration Funds from Delaware tax check off).
- Improved protections for streamside forests in London Grove Township via existing ordinance language.
- Reviewed watershed wide natural resource ordinances for areas of strengths and weaknesses.
- Provided comment and suggestions to the Delaware River Basin Commission and Artesian regarding the New Garden Township Broad Run Well Monitoring Plan.
- Assisted the National Park Service in monitoring development proposals and permit applications for potential impacts to the White Clay Creek and its tributaries as designated streams within the National Wild & Scenic Rivers System.

## School Programs

- Awarded a school programming scholarship for a 4.5-hour educational field trip to Stroud Water Research Center for 31 students from Assumption BVM in West Grove (PA).
- Provided a hands-on learning component to a class of 50 University of Delaware undergraduates enrolled in *Conservation of Natural Resources*.
- Provided relevant field experience in water quality sampling and analysis to a graduate student from West Chester University via our summer intern program.

### PARTNERSHIPS

#### Cost-Effective, Sustainable, Catalysts

2015 Partners: Brandywine Conservancy, Chester and New Castle County Conservation Districts, Delaware Department of Natural Resources & Environmental Control, Delaware Nature Society, Friends of White Clay Creek Preserve, Friends of White Clay Creek State Park, Natural Lands Trust, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Department of Environmental Protection, Stroud Water Research Center, SUEZ, University of Delaware, White Clay Watershed Association, City of Newark, and Franklin, London Britain, London Grove and New Garden Townships, Chester and New Castle Counties.



# Upcoming Community Events 2016

## 8<sup>th</sup> Annual Creek Fest

Saturday May 7<sup>th</sup> 12:00 – 4:00 p.m.

Carpenter Recreation Area, White Clay Creek State Park

The family event of the spring! Listen to local band Chapel Street Junction, enjoy guided nature hikes, kids crafts, local food, colonial history re-enactors, fly fishing clinics, native gardening displays, rain barrels for sale, FREE water bottles to first couple hundred folks, and MORE. Co-hosted with White Clay Creek State Park, National Park Service and SUEZ.

### Spring Events:

- April 16 **White Clay Preserve Clean Up Event in London Britain Township, PA**
- May 7 **Pre-Creek Fest Stream Study**
- May 21 **White Clay Bioblitz**

### Fall Events:

**White Clay Watershed Association Annual Meeting**



For information on all of our projects and upcoming events visit our website [www.whiteclay.org](http://www.whiteclay.org)

 **WhiteClayWildandScenic**

 **WhiteClayWS**

 **WhiteClayWS**  
Check out our photos on Flickr!

The Watershed Steering Committee, with our local and state partners, is charged with promoting the long-term protection of the White Clay Creek watershed and its resources in Pennsylvania and Delaware through the implementation of the Watershed Management Plan. The Management Plan Coordinator position was added in 2002 to assist the Committee in project and administrative duties.

The White Clay Creek watershed contains some significant natural areas and outstanding values which enabled the watershed to achieve its federal designation as a Wild and Scenic River. The Wild and Scenic Rivers Program supports projects that protect this jewel of a landscape through community outreach and education, open space preservation, restoration, and research.

### White Clay Creek Wild and Scenic Steering Committee Members:

Kyle Sonnenberg, *Delaware Co-Chair, Vice President White Clay Creek Watershed Association (WCWA)*

Don Peters, *Pennsylvania Co-Chair, New Garden Township*

Martha Corrozi Narvaez, *University of Delaware Water Resources Agency*

Kristen Travers, *Delaware Nature Society/WCWA*

Douglas Janiec, *Sovereign Consulting Inc./WCWA*

Ed O'Donnell, *Fly Fishers*

Martin Wells, *London Britain Land Trust/WCWA*

Beth Burnam, *Brandywine Conservancy*

Erin McCormick, *Natural Lands Trust*

Brian Styche, *Chester County Planning Commission*

Susan Staats, *DNREC, Division of Parks and Recreation*

Gerald Kauffman, *University of Delaware Water Resources Agency*

Rick Mickowski, *New Castle Conservation District*

Aileen Parrish, *London Britain Township*

April Schmitt, *Friends of Pennsylvania White Clay Creek Preserve*

Jennifer Egan, *University of Delaware, Policy Fellow*

Mike Zuk, *Chester County Conservation District*

Thomas Zawislak, *President White Clay Watershed Association*

David Hawk, *Treasurer White Clay Watershed Association*

Shane Morgan, *Management Plan Coordinator - Staff*

Julie Bell, *River Manager, National Park Service liaison to Wild & Scenic Watershed Steering Committee*



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182 Sawmill Road, Landenberg, PA 19350