



WELCOME

to the White Clay Creek Watershed



White Clay Creek Watershed...Ours to Enjoy – Ours to Protect.

The wonderful resources that attract us to the White Clay Watershed have also led to its status as Wild & Scenic.

A watershed is all the area of land that drains into a body of water, and we all live in a watershed. The White Clay watershed is 107 square miles and includes parts of Chester County, PA and New Castle County, DE. Nearly 100,000 people call the White Clay Creek watershed home.

In 2000 federal legislation designated White Clay Creek and its tributaries in Delaware and Pennsylvania part of the National Wild and Scenic Rivers System. That marked the first time an entire watershed - rather than just a section of river – had been designated into the system. This “beyond-the-river-bank” approach takes into consideration the variety of influences outside the river corridor that affect river habitat and water quality.



As residents of the White Clay Watershed we enjoy its unique benefits but we also share responsibility for maintaining the characteristics that make the watershed special. How we maintain and manage our properties - our personal piece of the watershed - reaches beyond our property line.

Photos courtesy of Rick Darke (left), John A. Thomas (right).

- FORESTS
- STREAMS
- PARKS
- HISTORY
- WILDLIFE

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BOTTOM CROPS ARE INDICATED**

WHAT IS

Wild and Scenic?

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“... CERTAIN
SELECTED
RIVERS OF THE
NATION ...SHALL
BE PRESERVED IN
FREE-FLOWING
CONDITION, AND
THAT THEY AND
THEIR IMMEDIATE
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BE PROTECTED FOR
THE BENEFIT AND
ENJOYMENT OF
PRESENT AND FUTURE
GENERATIONS.”

- NATIONAL WILD AND SCENIC
RIVERS ACT (P.L. 90-542)

White Clay Creek National Wild and Scenic River

In October 2000, Congress designated 190 miles of White Clay Creek, and its tributaries, as a National Wild and Scenic River. The White Clay is the only National Wild and Scenic River protected in its entirety. National Wild and Scenic River designation encourages the appropriate development of land that can coexist with the river. This federal designation helps to preserve watershed features that enhance water quality, natural resources and the overall quality of life. This approach takes into account changing land uses and the effects they can have on river habitat.

The White Clay Creek Watershed Management Committee, which is made up of local citizens, representatives of conservation organizations, and delegates from state and local governments, including all 13 watershed municipalities, works to implement these goals. The National Park Service provides staff to help link the Committee to other agencies and the public, and it also provides technical and financial support. Together with partner organizations, the committee works to:

- Improve and conserve water quality and water quantity.
- Conserve open space, woodlands, wetlands & geologic features.
- Protect native plant and animal species.
- Preserve cultural, historical and archaeological sites.
- Enhance outdoor recreation opportunities.
- Encourage environmental education and watershed awareness.

To learn more - or to become involved – contact:

- *White Clay Wild & Scenic River Program:* www.whiteclay.org
- *White Clay Watershed Association:* <http://mercury.ccil.org/~wcwa/>



Baptist Meeting House
Circa 1729

Photo courtesy of Rick Darke (left).

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OUTSTANDING RESOURCES

in the White Clay Watershed

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An abundance of resources...

Fish and Wildlife Resources

The Watershed includes mature forest, open field, wetland, and river ecosystems, a variety of habitats that gives the watershed its rich diversity that includes 33 species of small mammals, 21 species of fish, and 27 species of reptiles and amphibians, and over 90 species of breeding birds. White Clay Creek is a major trout fishing stream, with both Pennsylvania and Delaware annually stocking both rainbow and brown trout.

Cultural and Historic Resources

The Watershed has been occupied by various peoples for more than 10,000 years. The Lenni-Lenape or Delaware natives lived along the banks of White Clay Creek, where abundant game and fertile lands provided the resources for intermittent village settlements.

Historic and architecturally important sites abound in the watershed. Eight sites in Pennsylvania, including Primitive Hall and Lunn's Tavern, are listed on the National Register of Historic Places. In Delaware, 30 properties representing the fields of commerce, architecture, religion and agriculture are listed on the national register.

Further points of interest are the Mason-Dixon Line markers and the Arc Corner monument.

Recreation & Open Space

About 10% of the watershed is protected open space, including the bi-state White Clay Creek Preserve and White Clay Creek State Park in DE. Besides fly-fishing, recreational opportunities in the watershed include hiking, jogging, bird watching, picnicking, horseback riding, biking, cross county skiing, sledding, swimming, and hunting.

Take advantage of the wonderful events and programs within the Preserve and Park:

- *White Clay Creek State Park (DE):* <http://www.destateparks.com/wccsp>
- *White Clay Creek Preserve (PA):* <http://www.dcnr.state.pa.us/stateparks/parks/whiteclaycreek.aspx>



Wood Geranium

THE WATERSHED'S NATURAL
VEGETATION INCLUDES 60 TREE
AND SHRUB SPECIES, MORE
THAN 20 FERN SPECIES, AND OVER
200 SPECIES OF WILDFLOWERS.

Photo courtesy of Jim White (right).

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RUNOFF

Affects the Watershed & Surrounding Areas

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Reducing runoff can help to protect our resources.

The Watershed is a wonderful place to work, play and live. As more and more people move into the watershed to enjoy its scenic beauty and proximity to metropolitan areas, however, stresses are becoming apparent on our land, water and other natural resources.

White Clay Creek provides an abundant drinking water supply, both for watershed residents and for much of northern Delaware, including the city of Newark. Of special significance is the high quality Cockeysville aquifer that provides well water to many homes. These water resources, though, are showing stress from the growing population and suburban development, and over 75% of White Clay Creek is currently designated "impaired" by the states of PA and DE.

As rainwater washes across the land, it carries sediment, nutrients and chemicals from lawns, parking lots and other land uses. Some of these soak into the ground and into our groundwater, while others go directly into our streams. The increase in impervious surfaces that accompanies development means that less water infiltrates into the ground. Consequently, more water – and the pollution carried with it - flows directly into streams during storms, increasing both flooding and pollution.

What can you do to reduce runoff?

Protect streams:

- Plant native trees and shrubs along stream banks.
- Fence cows, horses and other livestock out of streams.
- Don't mow up to the edge of a stream.

Around the home:

- Control soil erosion whenever you disturb the ground. Protect disturbed soils with plants or mulch.
- Pick up pet wastes.
- Direct downspouts away from paved surfaces and toward vegetated areas.
- Establish rain gardens that allow rainwater to slowly infiltrate into the ground and eventually recharge the ground water.
- Use rain barrels to collect and store water for gardening.



Rain barrels can collect and store water for gardening.

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LANDSCAPING CARE

Watershed-Friendly Pointers

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What can you do?

Homeowners can actually create more pollution on small parcels of land than many farms create over hundreds of acres. With more than 30 million acres of lawn in the United States, watershed-friendly lawn maintenance does make a difference!

Minimize Chemical Use

- Use organic alternatives to reduce the harmful effects from herbicides, pesticides, and chemical fertilizers.
- Test your soil for nutrient levels (with kits available from local garden centers) and use only the amount of fertilizer necessary.
- Don't fertilize before a rainstorm.
- Leave grass clippings on the lawn to help feed the lawn and reduce the amount of fertilizer needed.
- Compost lawn clippings, leaves, coffee grounds and vegetable scraps for easy, free and fast soil supplement.

Reduce Maintenance

- Don't mow lawns to less than 2 inches – longer grass develops a healthier root system, shades out weeds, keeps the soil cool, and reduces the need for watering.
- Create a low-maintenance yard by planting ground covers, shrubs and trees instead of lawn.
- Mulch planting beds to reduce the need for watering and to control weeds, thereby reducing the need for chemicals.
- Go native – native plants provide better wildlife food and habitat and are easier to maintain.

Landscape for Wildlife

- Share your yard with wildlife. Choose plants that provide food and shelter for birds, beneficial insects, and other animals.

Watershed-Friendly Home Care

- Care for your car to prevent oil or other chemical leaks.
- Pump septic systems at least every 3 years.
- Properly dispose of paints, cleaners and other chemicals.
- Limit the use of toxic products inside and outside your home.

Conserve water

- Fix leaky toilets and faucets.
- Wash full loads of clothes and dishes.
- Install low-flow shower heads, water saving toilets and other efficient appliances.
- Turn off the faucet when you brush your teeth, shave, etc.

Learn more at:

- <http://www.delawareestuary.org/publications/factsheets.asp>
- <http://www.delawarenaturesociety.org/conservation.html>



This "SmartYard" is an example of an attractive, watershed-friendly approach to landscaping.

...WITH MORE THAN 30
MILLION ACRES OF LAWN
IN THE UNITED STATES,
WATERSHED-FRIENDLY
LAWN MAINTENANCE DOES
MAKE A DIFFERENCE!

Photo courtesy of John Harrod (left).

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GO NATIVE

Natural Ways to Protect and Improve the Watershed



Restoring Trees and Native Plants

Healthy streams provide more than clean drinking water. They also provide places for recreation and habitat for many plants and animals.

For thousands of years the White Clay Watershed was almost completely forested. Today many of the streams no longer have trees along their banks. Their absence, combined with our growing population, has resulted in declining stream health.

A simple and cost-effective way to protect and improve the quality of White Clay Creek is to restore trees along the banks. A streamside (or riparian) area of native trees and shrubs helps protect streams from pollutants running off the landscape and also provides the habitat for in-stream organisms to process those pollutants that do get into their waters.

BENEFITS OF STREAMSIDE TREES INCLUDE:

1. Filter sediment and pollutants from runoff.
2. Create conditions that neutralize pollutants that get into the stream.
3. Reduce flooding during storms.
4. Lower cost of treatment for drinking water.
5. Stabilize banks and reduce erosion.
6. Provide shade for trout and other animals - including us.
7. Provide food and habitat for birds, fish and other animals.
8. Increase privacy and absorb noise.
9. Reduce time spent mowing the lawn.

Even if a stream doesn't flow through your property, going "native" is still important. Because they evolved in this region, native plants are adapted to our local climate, soils and animals. These plants, which provide important food and habitat for many animals, are easy to grow, require little watering, have natural defenses against insects and disease, and are low maintenance.

Exotic plants that did not originate locally can become invasive and take over forests, fields and other habitats because they do not have the same natural checks and balances that they had in their native lands.

Learn more at:

- The Stroud Water Research Center: www.stroudcenter.org



Planting trees along stream banks is a simple and cost-effective way to protect and improve the quality of the White Clay Creek.

HEALTHY STREAMS PROVIDE MORE THAN CLEAN DRINKING WATER. THEY ALSO PROVIDE PLACES FOR RECREATION AND HABITAT FOR MANY PLANTS AND ANIMALS.

Photo courtesy of John A. Thomas (left).

PLANTING SUGGESTIONS

for Landscaping in the White Clay Creek Watershed

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AVOID PLANTING THESE INVASIVE PLANTS

Norway Maple	<i>Acer platanoides</i>
Tree-Of-Heaven	<i>Ailanthus altissima</i>
Princess Tree	<i>Paulownia tomentosa</i>
Bradford Pear	<i>Pyrus calleryana</i>
European Barberry	<i>Berberis vulgaris</i>
Burning Bush	<i>Euonymus alatus</i>
English Ivy	<i>Hedera helix</i>
Privet	<i>Ligustrum vulgare</i>
Periwinkle	<i>Vinca minor</i>

RECOMMENDED NATIVE PLANTS FOR LANDSCAPING IN THE WATERSHED

Trees

Red Maple	<i>Acer rubrum</i>
Bitternut Hickory	<i>Carya cordiformis</i>
Pignut Hickory	<i>Carya glabra</i>
Shagbark Hickory	<i>Carya ovata</i>
Flowering Dogwood	<i>Cornus florida</i>
White Ash	<i>Fraxinus americana</i>
Green Ash	<i>Fraxinus pennsylvanica</i>
American Holly	<i>Ilex opaca</i>
Eastern Red Cedar	<i>Juniperus virginiana</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Sourgum/Blackgum	<i>Nyssa sylvatica</i>
Sycamore	<i>Platanus occidentalis</i>
Wild Black Cherry	<i>Prunus serotina</i>
White Oak	<i>Quercus alba</i>
Scarlet Oak	<i>Quercus coccinea</i>
Pin Oak	<i>Quercus palustris</i>
Willow Oak	<i>Quercus phellos</i>
Chestnut Oak	<i>Quercus prinus</i>
Red Oak	<i>Quercus rubra</i>
Shadbush	<i>Amelanchier canadensis</i>
Winterberry	<i>Ilex verticillata</i>
Maple-leaved Viburnum	<i>Viburnum acerifolium</i>

Perennials

Butterfly Weed	<i>Asclepias tuberosa</i>
New England Aster	<i>Aster novae-angliae</i>
Wild Ginger	<i>Asarum canadense</i>
Joe-Pye Weed	<i>Eupatorium fistulosum</i>
Black-Eyed Susan	<i>Rudbeckia hirta</i>
New York Ironweed	<i>Vernonia noveboracensis</i>

Learn more at:

- www.bhwp.org
- www.dehort.org/pubs/index.php

NATIVE PLANTS PROVIDE
IMPORTANT FOOD AND
HABITAT FOR MANY
ANIMALS, ARE EASY TO
GROW, REQUIRE LITTLE
WATERING, HAVE
NATURAL DEFENSES
AGAINST INSECTS AND
DISEASE, AND ARE
LOW MAINTENANCE.

GREEN PAGES



Whom to Call About the White Clay Creek Watershed

Delaware

To report spills within the City of Newark, contact the City of Newark Emergency Management Coordinator at (302) 366-7075 during business hours, and contact the DNREC Emergency Response Hotline at 1 (800) 662-8802 after business hours. For questions concerning Newark's Stormwater Program, contact the City of Newark Stormwater Program Coordinator at (302) 366-7040.

Almost all environmental concerns, especially those of an emergency nature, can be referred to the DNREC hotline at 1 (800) 662-8802.

CONCERN	ORGANIZATION	CONTACT
Soil Erosion	New Castle Conservation District 2430 Old County Road Newark, DE 19702	(302) 832-3100 ext. 3
Threats to Aquatic Life	DNREC – Division of Fish and Wildlife 89 Kings Highway Dover, DE 19901	1 (800) 662-8802 Emergency Response Hotline
Wildlife Conservation	DNREC – Division of Fish and Wildlife 89 Kings Highway Dover, DE 19901 Tri-State Bird Rescue and Research 110 Old Possum Hollow Road Newark, DE 19711 (care for injured birds)	(302) 739-9913 Enforcement (302) 739-9912 Wildlife (302) 739-9914 Fisheries (302) 737-9543
Dumping or other unlawful activity in Streams or Wetlands	DNREC – Division of Water Resources 89 Kings Highway Dover, DE 19901	1 (800) 662-8802 Emergency Response Hotline (302) 739-9950 (General Information)
Air Quality Concerns	DNREC – Division of Air and Waste Management	(302) 323-4502
Private Wells & Septic Systems	DNREC – Division of Water Resources Groundwater Section 89 Kings Highway Dover, DE 19901	(302) 739-5361
Recycling	Delaware Solid Waste Authority 1128 S. Bradford Street P.O. Box 455 Dover, DE 19903	Citizen's Response Line 1 (800) 404-7080 (302) 739-5361 (Office)

Pennsylvania

Report dumping, spills and other environmental emergencies IMMEDIATELY to the PA DEP Southeast Regional office, 24 hours/day, at (484) 250-5900.

CONCERN	ORGANIZATION	CONTACT
Soil Erosion	Chester County Conservation District 688 Unionville Rd., Suite 200 Kennett Square, PA 19348	(610) 925-4920
Threats to Aquatic Life	PA Fish & Boat Commission Southeast Region Brubaker Valley Road, PO Box 9 Elm, PA 17521	(717) 626-0228 (for law enforcement) (717)626-9081 (for education)
Wildlife Conservation	PA Game Commission Southeast Region 448 Snyder Road, Reading, PA 19605	(610) 926-3136
Activity in Streams or Wetlands, Dumping or Air Pollution	PA Dept. of Environmental Protection Southeast Regional Office Lee Park, Suite 6010, 555 North Ln. Conshohocken, PA 19428	(610) 832-6000 www.dep.state.pa.us
Private Wells & Septic Systems	Chester County Health Department 601 Westtown Rd., Suite 290, Box 2747 West Chester, PA 19380	(610) 344-6225
Recycling	Chester County Health Department	(610) 344-6225

WHITE CLAY CREEK
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OURS TO PROTECT