

STREAM SURVEYS SHOW IMPROVED WATER QUALITY

The Red Clay Creek has improved considerably since RCVA commissioned the first water quality study in the early 1960's. Beginning with scientists from the Academy of Natural Science in Philadelphia, the Red Clay was sampled for both chemical and biological parameters. Since those first surveys, techniques have changed and so has the quality of the stream.

Beginning in 1969 the U.S. Geological Survey developed a water quality assessment that has been used annually thereafter. There are two sampling points on the Red Clay, one at the bottom of the east branch just before the confluence with the west branch and a second on the lower part of the west branch below the bridge on Chandler Mill Road. In the last 40 years a number of discharges have been removed from the stream or have stopped altogether. In addition, improved soil conservation practices on farms and better management at development sites have reduced sediment loads and runoff. In 1998 the west branch sampling site was moved from a point above the Kennett sewage treatment plant discharge to its current location. The new site initially showed reduced water quality which has significantly improved after the new treatment plant went online in 2001.

The most recent samplings show the continued improving trend. Notable changes have been the significant reduction in phosphorous discharged to the stream and the continuing low level of nitrogen. These

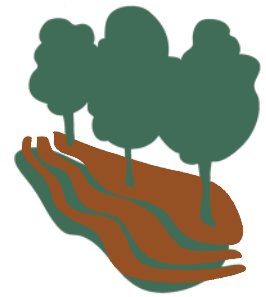
two elements can increase algal growth and reduce water quality. The index which measures water quality under the U.S. Geological Survey's program has continued to show slight but steady improvement in the past ten years. At this point, most of the significant impacts to the stream have been reduced or eliminated. To further improve water quality will require better management of stormwater and reduction of sediment loads in the stream.

The Pennsylvania Department of Environmental Protection in 2009 completed an overall assessment of the Red Clay Creek. This assessment is conducted every ten years and the latest results show little change from the 1999 levels. The upper west branch continues to be in good condition and meets state standards. The lower west branch and the entire east branch are still below state standards. The influences reducing water quality are primarily sediment and, to a lesser extent, nutrients. RCVA's Red Streams Blue Program has recognized the remaining problems and the program will focus on substandard streams by developing projects which will improve water quality.

The Red Clay Creek has come a long way from its former status as the worst stream in the region. Its improvement is one of the success stories in this area, but that improvement is still unfinished. You can follow progress through the newsletter and on the website under the Red Streams Blue Program.



Red Clay Valley Association



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REVIEW

The Review is published quarterly by the Red Clay Valley Association for its members.
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THIRD THURSDAYS FOR NATURE ENTHUSIASTS

Members and nonmembers are invited to an evening of fun and good company while learning something new about nature. The  symbol indicates a family friendly program.

March 18th - Family Stargazing 7:00 to 9:00 PM

Do you know how to find the big dipper in the sky? How about Polaris, our north star? Join us for an evening of stargazing and some Greek and Roman mythology about the constellations. Bring a blanket, a flashlight and binoculars if you have them. Hot cocoa will be provided!

April 15th - Green Roofs 5:30-7:00 PM

Join us for an informational community meeting about green roof technology and the environmental benefits of green roofs. What are the factors involved in designing and installation? This is a presentation of Weston Solutions, Inc. Bring your questions!



www.greengridroofs.com

Friday, May 21st - Myrick Center Camp Out - 6:30 PM to 8:30 AM, Saturday

This is a unique opportunity to enjoy the night so of the Myrick Center. Learn how to build a safe campfire, take a night hike, make s'mores, listen for owls and camp under the stars. This is a great way to introduce the family to camping in a safe environment with experienced staff. A camping list will be provided at registration. Space is limited.

June 17th - Lyme Disease Q & A 5:30 to 7:00 PM

Chester County has one of the highest rates of Lyme disease in the world. Learn how to protect yourself from the ticks that spread the disease, and what to do if you are bitten. Presentation by the Pennsylvania Lyme Disease Awareness Committee, a collaboration of the Chester/Delaware County Farm Bureau, the Lyme Disease Association of Southeastern Pennsylvania, Inc., and the Chester County Health Department.

BVA/RCVA Members: \$5.00 for ages 13 to adult. Kids are free.

Nonmembers: \$7.00 for ages 13 to adult. Kids are free.

Payment and registration are due by the Monday before your program. Children 12 years old and under are free and must be accompanied by an adult. Parking is on the office side of the property. Meet at the Browning Barn.

GARDENING FOR WILDLIFE...AND YOU! FREE EVENING PUBLIC LECTURE

Tom Brightman, Land Steward at Longwood Gardens, will be discussing the evolution of the garden habitat he and his wife tend in Kennett Square, PA. Using slides from his home garden, he will guide the audience in

- developing a vision for their garden
- cultivating a sense of place, native plant and wildlife interactions, and aesthetics
- learning about plant selection, management issues, and related topics.

When: **Tuesday, March 9, 2010, 7:00-9:00 pm**
Where: **Hockessin Library, Valley Road, Hockessin, Delaware**

Who: **Tom Brightman, Land Steward at Longwood Gardens;**

Tom is the Land Steward at Longwood Gardens, responsible for the health and care of the 700 acres of natural and perimeter land at Longwood and was previously the Easement Manager for the Brandywine Conservancy's Environmental Management Center. This event is sponsored by Red Clay Valley Association, Brandywine Valley Association, White Clay Creek Wild & Scenic Program, White Clay Watershed Association, and the National Park Service.

Registration is required as seating is limited. Call or email Red Clay Valley Association (610) 793-1090 or water@bva-rcva.org.

What Do Insects Say About a Stream?

Take a look! What is that thing in the picture? If you have any idea what this animal is, you must be a nature enthusiast. If you know that it's an insect, you're on the right path! Some of the characteristics of an insect can be identified in this picture; an exoskeleton, a body with three parts – the head, thorax, and abdomen – three pairs of jointed legs, compound eyes and two antennae.

Remember that insects go through many stages of life. Think of a butterfly, which goes through a lifecycle called a complete metamorphosis. A butterfly is the adult phase of this animal, but first it was an egg, then a caterpillar, then a chrysalis! The insect in the picture is a hellgrammite. After a hellgrammite hatches from an egg, it will live most of its life on the bottom of streams and rivers, and can often be found under rocks. In winter, the hellgrammite may burrow underground and when it emerges in spring or summer it will be an adult called a Dobsonfly. The Dobsonfly will start this cycle all over again by laying eggs, usually on the leaves of plants near a stream.

Hellgrammites are not poisonous, although they can pinch. This is how they catch their underwater food of insect larvae. They breathe with gills, can grow to be a few inches long and have two hooks at the end of their abdomen. Bear in mind, when you see an insect that might look intimidating, that they are part of the most diverse group of animals on Earth. Their role as citizens of the planet is important. Their presence can tell us about the health of a stream. Hellgrammites and Dobsonflies prefer to only live in and near clean, high quality waterways. This means that if you find them, the stream, creek or river where they live is healthy enough to support the population of these insects. Look for hellgrammites in riffle areas with fast moving water, under rocks and in piles of leaves caught on the rocks in streams and creeks. Dobsonflies, with their long mandibles and wings, can be found near trees, roots, and on leaves of nearby plants.

See if you can figure out who has longer mandibles, the male Dobsonfly or the female?

If you know the answer, write to me at water@bva-rcva.org.

Until then, have fun looking for insects!

*Your Friend,
Hellgrammite*



On January 19th this adult Bald Eagle was spotted along the Red Clay Creek !

Wish List -

Used maple sugaring equipment – spiles, evaporating pan, materials for display & to use

Chester County Astronomical Society

Date	Cloud Date
March 12th	March 13th
April 16th	April 17th
May 14th	May 15th
June 11th	June 12th

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Richard Lewandowski
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S. Damon Sinclair
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REVIEW

Upcoming events

Thursday, March 18th

Third Thursdays – Family Stargazing

Saturday, March 27th

Red Clay Valley Clean-up

Sunday, April 4th

Brandywine Hills Point-to-Point

Wednesday, April 14th

Annual Dinner

Thursday, April 15th

Third Thursdays – Green Roofs

Saturday, May 1st

Trout Rodeo @ Nixon Park

Friday, May 21st

Third Thursdays – Myrick Center Camp Out

Sunday, June 13th

Family Nature Day

Thursday, June 17th

Third Thursdays – Lyme Disease Q & A

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SUMMER CAMP



Space is still available!