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President's Message - Chet Dawson

The past year was a productive one for the Twin Walker Creeks Watershed Conservancy but also a sad one as we lost the beloved spouses of two of our long term members. I want to dedicate this coming year to the memory of these two wonderful women: Nancy Eisenhower and Noel McCullough. During 2013 we welcomed back a former Board member Paul Palladino and added a new member John Hahn while learning of the intended move to southern California of two stalwarts: Ralph and Linda Cioppa. The Conservancy currently uses the Cioppa's home address as our Conservancy address and effective with this newsletter that will change. Note our new address on the front page of the newsletter. Linda Cioppa has also served as Treasurer for the past several years and we want to thank her for her efforts. She also is on the board for the Pike County Conservation District and keeps up with several other organizations. Ralph has served the board in about every way and both will be missed. Irene DeVito is the new Conservancy Treasurer.

TWCWC made a committed effort to the community with a \$500.00 donation to the Shohola Student Action Fund and beginning with the 2014 DVHS Graduating Class will be providing a \$500 scholarship, awarded to a graduating senior who plans to continue their education at a two or four year college, in environmental studies or a related field. It is very rewarding that the dues and donations we take in can assist not only with our primary mission of protecting our watershed but also support the local community.

As we have since 2000 (Twin Lakes testing began in 1979 before the Conservancy was formed), we continue to monitor our three lakes and last year we also tested the water for the main tributary into Walker and the two Twin Lakes. A summary of the results of these tests is reported elsewhere in this newsletter. These tests have been limited to chemical and physical properties but this coming year we will also be testing the biological attributes of our lakes. Our testing program continues to be viewed as a model for the region and this past year Pat Dawson and Kirk Mackey talked to audiences at the Schuylkill Watershed Congress and the Pennsylvania Lake Management Society (PALMS) about our efforts. All three of our lakes face varying degrees of silt infiltration and there is a constant concern of how this will impact the lakes. A few years ago P.D. McCullough conducted a bathymetric analysis to determine the depths across the two Twin Lakes and this past year Scott Rando did the same for Walker Lake. These results, which can be found on the TWCWC web page, will serve as a baseline to track how much silt is settling on the bottom of our lakes.

We remain committed to the protection of our watershed and to keeping our neighbors informed. Our close association with the Pike County Conservation District plays an important role in our ability to serve the residents of our watershed. We welcome input and look forward to another rewarding year. Attached to this mailing is a return form for you to use to join TWCWC. Please support TWCWC by becoming a member and letting us know if you want to become involved. To learn more, view our website at (www.twcwc.com).

The mission of the Conservancy is to promote a better understanding of the Twin/Walker Creeks Watershed and its ecosystems and to protect, restore and enhance the watershed through proper management and watershed stewardship.

2013 Water Quality Monitoring Report for Walker Lake, Twin Lake and Little Twin Lake - Kirk C. Mackey and Pat Dawson

Kirk Mackey will be leading a workshop on May 31, 2014 at noon at his house to train volunteers to test the water quality for Big and Little Twin Lakes and Walker Lake. Volunteers, that have been through the training program and that currently conduct testing, are: Peter Loewrigkeit (who will be assisting Kirk with scheduling), Barbara Whitney, Justyn Comer, Glen Eisenhower, Linda and Ralph Cioppa, Scott Rando and Pat and Chet Dawson. The schedule for monitoring the 3 lakes during the 2014 season: 6/21, 7/19, 8/16, and 9/20.

Due to the large amount of rainfall last summer, the water quality of the 3 lakes was better than usual. However, F.X. Browne, the company that works with the laboratory that analyzes the samples and calculates the trophic state of the lakes, noticed that the phosphorous levels were not only unusually low but were the same for all 3 lakes for all four test months. These results skew the calculations for the water quality and there is a suspicion that preservatives were not included in the sample bottles used to collect these samples. A conference call is scheduled with F.X. Browne to discuss this problem.

While all three lakes remain good, Little Twin Lake continues to have the highest quality water and Walker Lake the lowest quality. Scott Rando charted the depths of Walker Lake to compare to a chart conducted in 1994 to determine if silt build up could be measured. While some increases in silt were seen near the shoreline there were no overall significant changes. Readings for conductivity spikes along the shoreline for the 3 lakes will be done this next summer to detect any septic problems and testing for zooplankton along with phytoplankton populations are being considered. Zooplankton keep phytoplankton populations in check and also serve as a food source for small fish. This information along with the fish survey of Walker Lake can determine if there is a good biological balance in the lakes.

Kirk and Pat were invited to present our findings at the Pennsylvania Lake Management Society annual meeting in March 2014. At the last minute, Kirk was unable to attend so Chet Dawson filled in for Kirk. There are plans to present the data to both the Twin Lakes Association and the Walker Lake Homeowner's Association at their annual meetings this summer.

If you are interested in becoming involved in this project, please contact Kirk Mackey (kirk.mackey@gmail.com)

Amphibians of the Watershed - Scott Rando



This is an American toad trying to attract a mate in Walker Lake during May of last year. American toads return to water during May to breed and can be heard during the day into mid-June before they leave the water for the rest of the summer.

One of the first signs of Spring, aside from the snow melting away, are the first chorus of Spring peepers in vernal ponds and wetlands in the evening, or perhaps the quacking calls of a colony of wood frogs calling by day, even as ice is still present in the pond. Frogs and toads are seen during the spring, summer and fall in the region, and they are not always near a water source. The American Toad, the most common toad in the region, can be found in back yards or other areas where they can get sufficient shade. All our frogs and toads have one thing in common though; they need a suitable water source to reproduce. Even amphibians that range far from water most of the time need a viable water source to breed.

Because all amphibians spend part of their life cycle in the water, and the fact that their skin is permeable to many contaminants, frogs and toads are considered bio indicators of the environment. Amphibian species in some areas have suffered a decline due to pollution; this has raised concern that some species may someday become extinct. The Twin and Walker Lakes watershed and most surrounding areas in the region have relatively good water quality. However, factors such as sensitivity levels to various contaminants by which species is not yet well understood. Many citizen science groups have organized to monitor amphibians in an attempt to monitor long term population trends of native species of frogs and toads by listening to courtship calls during breeding season.

In the three lakes of the watershed, pickerel frogs are usually seen and heard first, with their snoring calls. Green frogs emerge later in the spring. Finally, around May American Toads can be heard along the shore and in areas of cattail growth as the males call for a mate during the breeding season. Bull frogs are heard at night in the summer as a successive “bark”.

Green frogs can be found along lake shores and ponds from late spring on. Green frogs are similar to bullfrogs, but green frogs have a dorsal ridge. They range from olive to dark green, with rare blue phase that was seen on Walker Lake.



In the wetlands and vernal ponds are the spring peepers and wood frogs during the first mild days of spring. Grey tree frogs are also heard in May in ponds at night, and occasionally in trees during the summer after they disperse from the ponds after breeding.

Frogs and toads eat a lot of bugs; they are also on the dinner menu for many predators, and for that reason, they are wary. If you come up slowly and quietly to good shoreline habitat, you might view them. Most species can be heard at night at various times, so enjoy the night time chorus and if you would like to get involved in frog surveying, here is one group in our area: <http://paherpsurvey.org/amphibian-watch.php>.

Treasurer's Report - Linda Cioppa

This has been a quiet time for the Conservancy. Less than 35 people contributed to the Conservancy in all of 2013. So far this year we have had only 1 contribution. We have been able to continue to do the things we want to do, such as a newsletter, a new scholarship, etc., because of prior contributors. We are considering additional projects and would like your support. Please contribute as generously as you can.

We currently have \$5202.67 in our checking account and \$11453.13 in our Money Market account.

Ralph and I will be moving in the near future. Our house is on the market and will hopefully be sold fairly soon. As of this newsletter, Irene DeVito has agreed to pick up the Treasurer's responsibilities. I want to thank her and all the people I have worked with through the years for their support, their concern for the Community, and their positive attitudes.

We need your continued support. We ask that you please contribute to the Conservancy as generously as possible so that we may continue to provide education, information, programs, and services to our watershed residents.

The Twin/Walker Creeks Watershed Conservancy will be hosting a public meeting at the Walker Lake Clubhouse in October 2014 on the Pike County Conservation District/United States Geologic Survey 2012 - 2013 Baseline Groundwater Quality Assessment Study. The presentation will be conducted by a staff member of the Pike County Conservation District. The time and date will be announced in the future.

Summary of PCCD/USGS Baseline Groundwater Assessment (2012-2013) - Vincent Cordova

Pike County sits on a layer of Devonian age Marcellus Shale which has potential for natural gas drilling by process of hydraulic fracturing (fracking). There are some concerns this fracking may impact groundwater quality in shallow bedrock aquifers which is where the population of Pike County draws its drinking water. Having a baseline of data which shows current groundwater quality in these bedrock aquifers will be important in determining long-term potential impacts to this groundwater from gas drilling. In 2012-13, Lisa Senior (USGS Hydrologist) with assistance from Pike County Conservation District performed an assessment of groundwater in Pike County. This study was conducted to establish a baseline for groundwater quality accompanied by normal dissolved methane concentrations throughout Pike County's shallow groundwater. There was also a temporal aspect of this assessment for the purpose of measuring the natural variability of the presence and concentration of certain contaminants throughout one year. Many of the constituents measured were closely associated with the chemicals used in the fracking process.

The groundwater was sampled from wells distributed throughout the county. Water was evaluated for; major ions, nutrients, trace constituents, stable isotopes of water, radioactivity, and dissolved gases (i.e. methane). The temporal aspect of the assessment indicated up to a 20 percent variance of concentrations of the tested components. The sampling showed that some of the wells already had detectable concentrations of methane with two wells showing higher than recommended concentrations. Many of the wells also did show detectable levels of constituents associated with fracking brine; some natural, some anthropogenic.

This 2012-2013 groundwater quality study provided important information on Pike County's aquifers. Additional studies are needed to continue to answer questions derived from this baseline information.

The Pike County Conservation District is proud to work with the US Geological Survey to better assess both the quantity and quality of Pike County's groundwater resource. For more information please contact Pike County Conservation District at 570-226-8220 or visit pikeconservation.org.

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Watershed Conservancy**

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Individual (\$15) Family (\$25) or Student/Senior (\$10) \$ _____

Additional Donation: \$ _____

Volunteer Opportunities (please circle any areas that are of interest)

Lake monitoring Education (Children, Brochures, Other)

New programs (please note if you would like to participate or just learn more through our education program)

Invasive plant identification & control Macro-invertebrate stream testing Other interests _____

Suggestions for TWCWC _____

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