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Enter the 2008 Photo Contest "The Streams of Meigs County"

The Leading Creek Watershed Group and the Meigs Soil & Water Conservation District (SWCD) are accepting entries for their fourth amateur photo contest.

This year's theme is "The Streams of Meigs County." This contest is open to Meigs County residents of all ages, but photos must be taken within Meigs County and relate to the theme.

There is a limit of two photo submissions per person. Pictures of any format, size, black & white, or color will

be accepted. All photos are welcome, current or historical, and will be displayed at the SWCD office, but only three winners will be chosen for the cash prizes.

Photos will be judged by a panel of area experts and residents. Submissions are due to the Meigs SWCD office by Monday, March 31st, 2008. Photos can be delivered to the Meigs SWCD office in Pomeroy or e-mailed to Raina.Fulks@oh.nacdnet.net.

Winners will be announced at the Annual Leading Creek



Stream Sweep, which will take place on Saturday, April 19th at 9am at the Jim Vennari Park in Rutland. The top three photos will also be displayed at the Meigs SWCD booth during the 2008 Meigs County Fair and at the Meigs SWCD 2008 Annual Banquet.

To obtain the required entry forms and detailed contest rules please contact the Meigs SWCD office at 740-992-4282. We are looking forward to seeing how your photos will show off the streams of Meigs County!

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 Rutland, and Salisbury Townships in Meigs
 County
 U.S. Department of Agriculture
 U.S. Fish and Wildlife Service
 U.S. Office of Surface Mining
 4-H

Mark Your Calendar For The Annual Litter Clean Up!

The 8th Annual Leading Creek Stream Sweep will be held on Saturday, April 19th at 9am. Volunteers will meet at the Jim Vennari Park in Rutland where bags and gloves will be handed out and locations will be assigned.

Last year's Stream Sweep had one of the best turnouts, with 35 volunteers cleaning up litter at locations stretching from Albany to Langsville to Rutland and on. Thanks to the help of our partners like the Rutland Township Board of Trustees and the Meigs Transfer Station the trash collected filled up two dump trucks.

Stream Sweep volunteers can enjoy a free lunch and a free Leading Creek T-shirt. Another perk of attendance is seeing the announcement of the Annual Photo Contest winners.

Plan now to join the Leading Creek Watershed Group on April 19th and clean up the watershed!



Volunteers at the 2007 Stream Sweep gathered at the Rutland Jim Vennari park for a complimentary lunch and enjoyed the unexpectedly pleasant weather.



Calling All Bird Watchers

The 11th Annual Great Backyard Bird Count will be held February 15 - 18, 2008. This event is sponsored by Audubon and is great fun for the entire family or as a class activity. Tallies are compiled from all across the continent and show bird distributions and can indicate the health of the environment. For details go to www.birdsource.org/gbbc/

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What Can Algae Tell Us About Leading Creek?

By

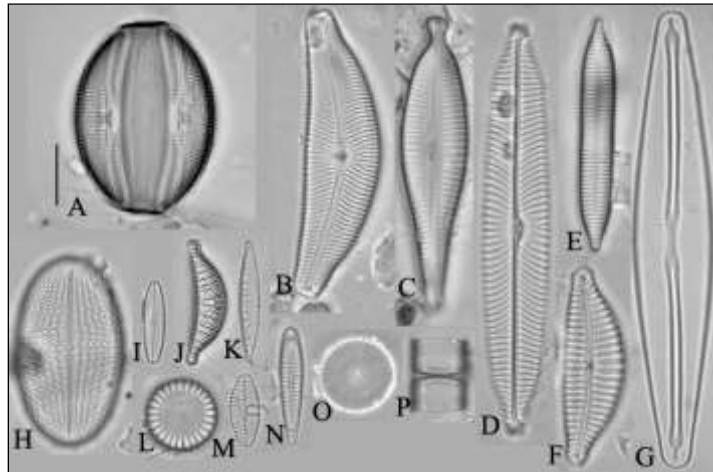
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Diatoms are unicellular algae that have glass cell walls (silica), which you can see in this figure. They have a wide range of shapes and sizes, and the characteristics of their cell walls are how they are identified in the microscope. These specimens have been cleaned with a strong acid, which allows features of the cell wall to be more easily viewed. When alive, diatoms are golden-brown. Scale bar = 10 μm which is approximately one 2500th of an inch.

The animals and plants of streams have long been a focus of water quality assessments and management decisions because they integrate how various types of pollution affect the aquatic community composition, structure, and function. While fish and macroinvertebrates have been and remain very important tools in assessment programs, **the recognition of algae's** importance in monitoring programs has greatly increased in recent years. Algae are the foundation of the aquatic food web as the food source, along with leaves, for macroinvertebrates and fish. Hundreds of algal species can be present at a stream site, and they have various responses to pollution and water quality degradation. This characteristic makes them especially useful for monitoring streams and for developing criteria on which to base management decisions and remediation goals.

Diatoms are the most

popular type of algae used in monitoring streams because they have many species and are very abundant, even in extremely polluted streams. Many of you have probably seen diatom communities in streams without ever knowing it. As individual unicellular organisms, they cannot be seen without using a microscope, but millions of them form a visible, slippery, brownish-gold film that covers rocks, sand, or other substrata. More than 100,000 diatoms can be present on an area the size of your thumbnail.

In the Leading Creek watershed, diatoms were very useful for understanding how various types of impairment

(e.g. acid mine drainage and excess nutrients) have affected the streams. The Thomas Fork watershed was predominantly impacted by acid mine drainage as evidenced by acidic pH, high concentrations of aluminum and iron. The domination by diatoms typical of acidic conditions provided biological support for this.

Two sites on Thomas Fork (river miles 5 and 7.1) and one site on Bailey Run (river mile 0.5) had the most severe AMD pollution in our study, with pH values between 3-4 and extremely high concentrations of aluminum and iron. Around

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river mile 2.8 of Thomas Fork the pH increased to about 5.5, aluminum and iron concentrations were much lower, and the number of diatoms typical of more neutral pH values (~7) increased. Diatoms are excellent indicators of the severity of acid mine drainage and indices have been and continue to be developed and tested at Ohio University.

Another major finding was the effect of the Parker Run mine discharge on the diatom communities downstream in Parker Run and in the main stem of Leading Creek. Total dissolved solids were extremely high downstream of the discharge and gradually became more diluted in Leading Creek nearer the Ohio River. Chloride toxicity has been a well-documented problem associated with this discharge, and the diatom community reflects this. Numerous species typical of high salinity levels were present in samples.

Additionally, a newly reported non-native (but not invasive) diatom species, *Thalassiosira lacustris*, was found thriving in Leading Creek around river mile 6.0.



Undergraduate researcher Sam Drerup collects a water chemistry sample from the acid mine drainage impacted Bailey Run (river mile 0.50) during a time of drought. *Frustulia* and *Eunotia* are diatoms frequently found dominating in acid mine drainage streams with acidic pH.

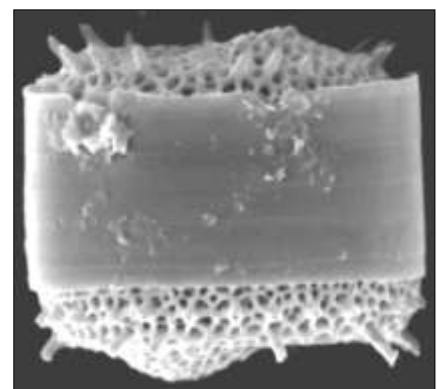
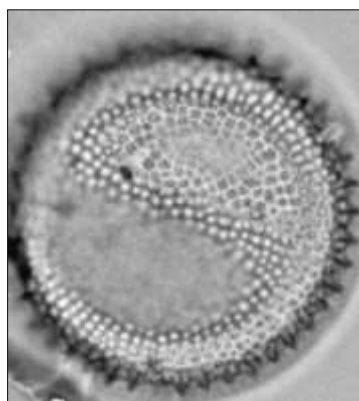
In this stream reach, dissolved solids emanating from the Parker Run discharge are diluted to a level which is optimal for its growth (note: these levels are still very high when compared to typical levels in this region and levels upstream of the discharge). This diatom is originally from the Baltic Sea and is usually found in US coastal rivers and estuaries, particularly along the Gulf of Mexico, and the Pacific and Atlantic Oceans.

Many non-native diatoms that spread throughout the

world tolerate various salinities, but prosper in human impacted locations with elevated dissolved solids and salinities, as was the case with this diatom species in Leading Creek.

This species does not appear to be causing any problems, but its arrival has been documented and studied so that any future spread can be determined. Throughout the watershed, diatoms were also responsive to nitrogen

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Thalassiosira lacustris is a non-native diatom found in Leading Creek. The image on the left is from a light microscope, and the image on the right is from a scanning electron microscope which allows for viewing fine details and three dimensional features of cells.

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and phosphorus levels.

All in all, diatoms have been very useful for detecting the severity of acid mine drainage and agricultural inputs, which are the two predominant sources of pollution in the watershed. This study is the first to document diatom community patterns in the Leading Creek watershed, and it can serve as a baseline for future algal research and stream monitoring.



Above: The Sheets property is shown with excellent riparian vegetation along Mud Fork that will now be protected in perpetuity.

Below: The Enterlines are shown here after signing their environmental covenant and receiving their payment.



Permanent Riparian Protection Gained in Watershed

The Meigs Soil & Water Conservation District and the Leading Creek Improvement Committee (LCIC) are proud to announce the completion of two environmental covenant projects that protect Leading Creek and tributaries.

The Sheets Environmental Covenant Project was completed in December 2007. It protects 40.16 acres along Mud Fork, including 5.01 acres of wetland, 21.95 acres of riparian land, and 13.2 acres of farmland.

The Enterline Environmental Covenant Project was completed in January 2008. This protects 12.3 acres along mainstem Leading Creek. These projects were funded by the U.S. Fish & Wildlife Service using funds from the Leading Creek Improvement Account.

A property owner holds more than the land itself.

They can also own rights to the land such as the right to farm, harvest timber, subdivide, extract minerals, or develop. Landowners have the right to place limits on the types of land uses that

may take place on the property through an environmental covenant. The primary objective of one is to eliminate development as a potential future land use. This is very similar to the function of a conservation easement.

Environmental covenants are permanent agreements that are recorded on the property's deed and "run with the land." The landowner will maintain ownership of the land and preserve it as they see fit. A landowner may also be able to benefit from financial incentives and compensation.

These projects protect valuable riparian, or streamside, lands. Riparian plants act as a buffer, reducing pollution that enters a stream. Roots from vegetation help water percolate into the ground which results in less flooding. Tree roots stabilize stream banks and reduce erosion.

Any interested streamside landowners within the Leading Creek Watershed can contact the Meigs SWCD at 740-992-4282 to help protect and maintain their land.

Teaching Teachers

Workshops are an excellent way for school teachers to keep updated on educational topics and to earn required continuing education credit. The Meigs SWCD held an Educator's Workshop on October 6th that focused on 'Project Learning Tree.' The class included lessons for grades K - 8th, and five educators were in attendance.

On November 5th a 'Healthy Water, Healthy People' Educator's Workshop and a 'Project Wild: Science & Civics' Educator's Workshop was held. This combined workshop focused on grades

5th - 12th, with eight educators at one class and nine educators at the second class.

On November 7th another 'Project Learning Tree' Educator's Workshop was held with five educators in attendance. Both formal and non-formal educators participated in these workshops to take advantage of the lessons that are all correlated to the State Science Standards.

Workshop participants receive free materials like workbooks, teacher's manuals, and water testing kits. They learn to assess physical, chemical, and



Teachers from many local schools learned along with non-formal educators at the classes, such as the Project Learning Tree Workshop shown here.

biological characteristics of waterways to understand how water quality is affected by human activity. Wildlife management, civic volunteer projects, and many other environmental topics are also covered during the classes.

More free workshops are being planned for 2008, so keep an eye out for announcements.

Leading Creek TMDL Plan is Approved

A Total Maximum Daily Load (TMDL) Report gives the maximum amount of pollutants a creek or river can receive on a daily basis without violating water quality standards set by the Ohio Environmental Protection Agency (OEPA). The Leading Creek TMDL Report is now complete and approved. This



plan was developed by the OEPA and will compliment other plans that have already been developed to help give a clear picture of where to focus watershed work and find solutions for water quality problems.

The Federal Clean Water Act requires this water quality plan to be developed and implemented for watersheds that are impaired, such as Leading Creek, and



this is the 29th TMDL Report approved in Ohio so far. TMDLs were calculated in Leading Creek for total suspended solids, total dissolved solids, and chlorides. One recommendation for improvement is to enhance treatment of the permitted discharge at Meigs Mine #31. To read the plan visit www.epa.state.oh.us/dsw/tmdl/LeadingCreekTMDL.html or call the Meigs SWCD office at 740-992-4282.

Leading Creek Watershed Group Membership Form

Join us today! Leading Creek wants *you* to become a member!

To become a member of the Leading Creek Watershed Group simply fill in your information below and drop this form off at our office or mail it to us c/o Meigs SWCD
33101 Hiland Road
Pomeroy, OH 45769

Yes, I want to join today!

And I want to donate! (see options below)

Name (Please print) Organization (if applicable)

Mailing Address

City State Zip

Telephone Email

Signature Date

Benefits of Membership

All members receive personal invitations throughout the year to participate in activities such as watershed tours, group contests, litter clean up days, and water sampling demonstrations.

Option to Donate

Here is your chance to help us restore and protect the watershed. All donations are used to directly benefit the efforts of the Leading Creek Watershed Group. Those who donate \$10 or more receive one of our newly designed t-shirts. Also keep in mind that your contributions are tax deductible.

Please make checks payable to Leading Creek c/o Meigs SWCD.

- \$10 *Donor* Preferred Shirt Size (If applicable) _____
- \$25 *Supporter*
- \$50 *Patron*
- \$100 *Sponsor*
- \$500 *Benefactor*
- Other \$_____

The Leading Creek Watershed Group is a partnership of residents, officials, and agencies united by common interest in restoring the Leading Creek Watershed to add to the quality of life for the residents of the watershed and surrounding communities.

Thank you for your membership and for your support!

CALENDAR OF EVENTS

February 28th: Leading Creek Improvement Committee Meeting at 9:45 a.m. Call for location.

March 20th: Leading Creek Improvement Committee Meeting at 9:45 a.m. Call for location.

March 31st: Deadline to submit Photo Contest entries to Meigs SWCD.

April 19th: 8th Annual Leading Creek Stream Sweep and announcement of Photo Contest winners

April 22nd: Earth Day

Office Closed for Holidays:
February 18th



www.geocities.com/meigsswcd

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