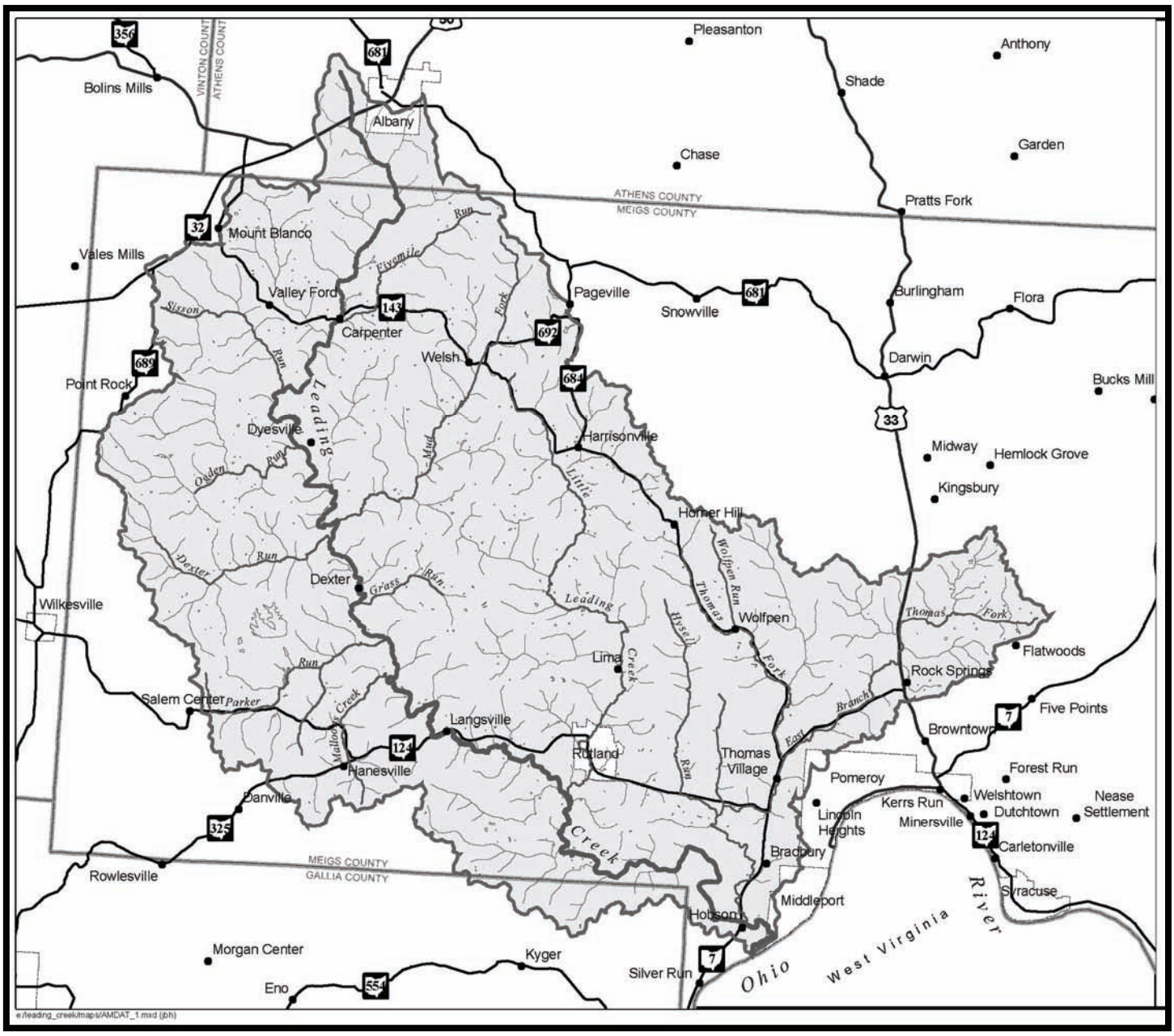
Volunteer Handbook

Leading Volunteer Monitors Program



Leading Creek Watershed

Meigs Soil and Water Conservation District
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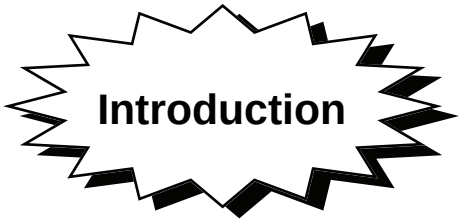


Welcome to Volunteer Monitoring in the Leading Creek Watershed!

Use this handbook as a guide to understand and follow the procedures of the Leading Volunteer Monitors Program. Your primary resource is the *Streamkeeper's Field Guide: Watershed Inventory and Stream Monitoring Methods,* produced by the Adopt-A-Stream Foundation. The book provides a thorough introduction to watersheds and watershed investigations.

This program is the first volunteer monitoring program in the Leading Creek Watershed. Volunteer monitoring is a growing concept in many watershed groups. Your commitment to the program is a big step toward increasing watershed restoration and protection initiatives in the Leading Creek Watershed.

Introduction to the Leading Creek Watershed

A watershed is an area of land in which all the water drains to a common outlet. All the land in the Leading Creek Watershed drains water to Leading Creek, which is 29 miles long. As water races down hills and across surfaces it is affected by the land and how we use it. It is important to consider what will happen downstream as we make land use decisions. The small tributaries running through are part of a group of sub-watersheds that flow together to form the Leading Creek Watershed. Leading Creek flows into the Ohio River, which runs into the Mississippi River, which empties into the Gulf of Mexico.

The Leading Creek Watershed consists of slightly more than 150 square miles, or 96,000 acres, in southeastern Ohio. The watershed comprises most of the western half of Meigs County and small portions of Athens and Gallia counties (see maps at the end of this document). This rural watershed is sparsely populated with several small communities such as Harrisonville, Langsville, Dexter, Carpenter, and Dyesville. Rutland is the largest community with about 400 residents and is the only incorporated village located entirely within the watershed. An approximate total of 7,500 people call the watershed home with the major land usage being agriculture. With nearly 70% of the watershed consisting of forestlands, the area is a striking and tranquil place.

Settlement of the Leading Creek Watershed began shortly after the Indian Wars concluded with the Battle of Fallen Timbers in 1794 and the 1795 Treaty of Greenville. Railways carved out some of the first settlements in the Leading Creek Watershed by connecting the area's gristmills, sawmills and coal mining towns. Large scale coal mining in the watershed began in the 1830's with debris and acid mine water piped directly into the local streams.

Historic land use practices have greatly modified the current condition of Leading Creek and many of its tributaries, or subwatersheds. Leading Creek has been severely impacted by sedimentation from abandoned mine lands and poor agricultural practices. This results in the decreased ability of the Leading Creek Watershed to support fish and other aquatic life. In addition, the buildup of sand and other materials has resulted in frequent flooding. Decades of unregulated coal mining left more than 2,000 acres of barren surface-mined land and contamination stemming from acid mine drainage affects more than 20 miles of streams in the watershed. Acid mine drainage (AMD) is a common result of unregulated coal mining that devastates stream habitats. Water coming from coal mines has a low, very acidic pH and contains high levels of metals.

In 1993, an underground coal mine was flooded with water, which caused the coal company to pump millions of gallons of untreated and partially treated acid mine water into Parker Run, a tributary of Leading Creek. This destroyed all aquatic life in a 15.5 mile stretch of Leading Creek. Following the event, the federal government charged the Southern Ohio Coal Company (SOCCO) with violations of the Clean Water Act and other environmental laws. As part of the settlement for this case, SOCCO was required to pay the U.S. Department of the Interior damages for injuries to natural resources. These funds, managed by the U.S. Fish and Wildlife Service, are often referred to as the Leading Creek Improvement Account. This account has provided financial support for projects conducted in the watershed, such as riparian protection and public education.

The Fish and Wildlife Service have provided funding to the Meigs Soil and Water Conservation District (SWCD), the local contact, to assist them in developing and implementing projects in the Leading Creek Watershed. The Fish and Wildlife Service and Meigs SWCD have established the Leading Creek Improvement Committee to provide advice on project selection.

The Leading Creek Acid Mine Drainage Abatement and Treatment (AMDAT) Plan identifies all sources of acid mine drainage and prioritizes the sources for treatment. The purpose of the Leading Creek AMDAT Plan is to detail the actions that are necessary to treat the sources of AMD in order to restore stream segments and streams in the Leading Creek watershed to meet their designated aquatic life use. The objectives are to define current water quality conditions, describe the extent to which AMD affects each of the subwatersheds that were mined before the passage of the Surface Mining Control and Reclamation Act (SMCRA) in 1977, and determine the projects and actions necessary to remediate impacted sites

To accomplish these objectives, staff of the Meigs Soil and Water Conservation District (SWCD), with assistance from Ohio Department of Natural Resources Division of Mineral Resources Management (ODNR-DMRM), began to systematically test the water quality within the Leading Creek Watershed in the spring 2003. In addition, from October 2005 to March 2006 Ohio University's Voinovich Center/ILGARD conducted further water quality investigations to gather the necessary information to complete the treatment strategy plans. Cost for the treatment suggestions were developed by ODNR-DMRM engineers and project officers. These assessments included measurement of field and laboratory parameters in all the impacted subwatersheds and at all of the existing sources. Current monitoring was used along with historical sources of data to determine the existing impacted sites. Based on extensive reconnaissance, two tributaries, Paulins Run and Thomas Fork, have AMD impacts that reduce the diversity and abundance of fish and macroinvertebrate communities.

The Meigs SWCD continues to conduct annual water quality monitoring in degraded areas of the watershed. Current water quality monitoring and biological studies allows the determination of significant sources of acid mine drainage and justification for treatment and abatement activities. Acid, metal, and flow budgets help determine the sources of acid mine drainage in the watershed and prioritize the treatment of those sources based on their relative effects on the watershed. Analyses allow the identification of the specific projects that are needed to restore streams and stream segments to Warmwater Habitat (WWH). Monitoring also assists with determining new areas in need of treatment, whether as a result of AMD or other types of land use impairments.

Job Duties

Job Title: Leading Volunteer Monitor
Coordinator(s): AmeriCorps Volunteer: Karla Sanders until August 10, 2010
Lauren Armeni from August 10 - June 1, 2011
Raina Fulks; Leading Creek Watershed Coordinator

Program Duration: One year; formally beginning June 28th, 2010
Attendance Requirements:

- Orientation/Introductory Session: **June 28th**, 6-8 PM Pomeroy Library
- Four Training Sessions: Meigs Soil and Water Conservation Area
  Training I. **July 16th**: 9 AM — 4:30 PM
  Training II-IV. TBA (fall, winter, spring): Half days
- Four Monitoring Sessions: Half day or full day (volunteer may decide)
  Seasonal: (summer, fall, winter, spring)
- Four Adopt-A-Highway Cleanup Sessions: Half day sessions
  Session I & II. Late summer and fall (date TBA)
  Session III. 2011 April Leading Creek Annual Stream Sweep
  Session IV. 2011 June Ohio River Sweep

Description of monitoring duties:

- Collecting water quality data from pre-determined sites using methods and skills taught during training sessions.
- Writing reports of monitoring findings and physical conditions of sites.
- Preparing and cleaning equipment before and after each monitoring session.
- Optional: Helping program coordinators enter volunteer data into Leading Creek Watershed ArcIMS database (www.watersheddata.com).

Benefits to volunteer include but are not limited to the following:

- Education about natural resources and water quality in southeastern Ohio through hands-on training and field experience.
- Ohio EPA Credible Data Program Qualified Data Collector (QDC) Level 1 training and certification.
- Interaction with Meigs SWCD and Ohio EPA employees.

Goal / outcome of volunteer position:

Increase collection of watershed data and information, build community interaction, educate watershed residents and university students to encourage stewardship of natural resources. QDC Level 1 qualification upon completion of training.

Skills / Experience desired:

No experience required; Volunteers must be willing to work in extreme conditions (i.e. rain / snow or shine, rugged terrain), work with other volunteers, and be self-motivated.

Special Requirements:

Volunteers must have own transportation and be willing to drive distances throughout the watershed.

Section 1 : Resources

The following resources are personnel, websites, materials, and contact information volunteers may use through the duration of the program. Resources are available to help volunteers address questions and concerns.

CONTACT

Meigs Soil and Water Conservation District office is located in Pomeroy, Ohio at
33101 Hiland Road
Pomeroy, OH 45769. Office hours are 8 AM—4:30 PM M-F.
Phone: 740-992-4282
Fax: 740-992-4248

Program Personnel: Current AmeriCorps volunteer, Raina Fulks; watershed coordinator, and Jim Freeman; Meigs SWCD wildlife specialist.

WEBSITE

Volunteers may find resources for the program online at the Meigs SWCD website:
www.meigsswcd.com
Volunteer information may be found under the Leading Creek Watershed page on the Volunteer page.

BOOK

The *Streamkeeper's Field Guide; Watershed Inventory and Stream Monitoring Methods* text is a great resource for volunteers to learn about watersheds and monitoring. The book includes the following informative chapters: Understanding Watersheds, Watershed Investigations, Monitoring Program Design, The Stream Reach Survey, Monitoring Your Stream's Physical Characteristics, The Spineless Ones, Water Quality, Credible Data, Presenting Your Data, and Streamkeeper Tales.

OTHER WEBSITES

There are many resources on the web for volunteer monitors. A simple Google search using "volunteer monitoring" will take you to dozens of excellent volunteer monitoring sites. The following lists a few of these websites volunteers may use to learn more about volunteer monitoring.

-USDA National Facilitation of CSREES Volunteer Monitoring Efforts Website
http://www.usawaterquality.org/volunteer/

-USEPA Volunteer Monitoring
http://www.epa.gov/volunteer/

-Ohio EPA Credible Data Program
http://www.epa.ohio.gov/dsw/credibledata/index.aspx
- Learn about credible data and what it means to have Qualified Data Collector (QDC) Level 1 status.

Section 2 : Objectives

The purpose of a watershed volunteer monitoring program in the Leading Creek Watershed is to increase citizen involvement so there may be greater stewardship and awareness of the watershed, as well as greater understanding of the watershed's water quality and areas of degradation.

The following list describes the program's five objectives:

1. Increase interest in providing watershed stewardship. The volunteer monitoring program will educate volunteers about watershed systems and local impairments to increase interest in protecting the Leading Creek Watershed.

2. Educate volunteers and provide professional skills training. Volunteers will acquire new skills and certification through the Ohio EPA Credible Data Program. Ohio EPA employees will conduct Level 1 Qualified Data Collector (QDC) training and provide certification for free.

3. Increase watershed surveying and collection of technical information to help prevent future impairments. Watershed coordinators and Meigs SWCD staff members will have a team to help manage the watershed, document watershed conditions, and increase the amount of data in the Leading Creek Watershed database.

4. Build outreach efforts and strengthen volunteer involvement. The program will help inform residents of the watershed about their water quality as well as offer a free opportunity for more people to become involved in the community.

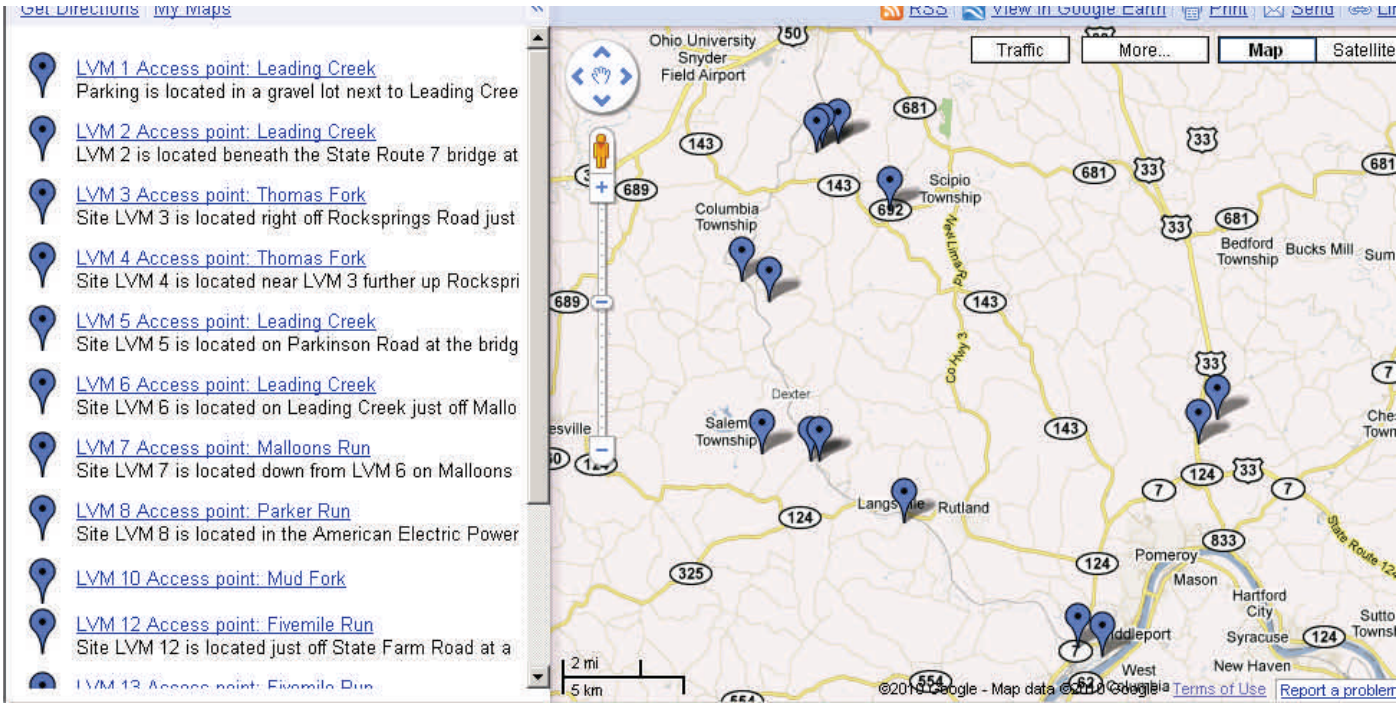
5. Serve as model to help improve surrounding watersheds. Outlying organizations and agencies may use the program as a model to implement in surrounding watersheds.

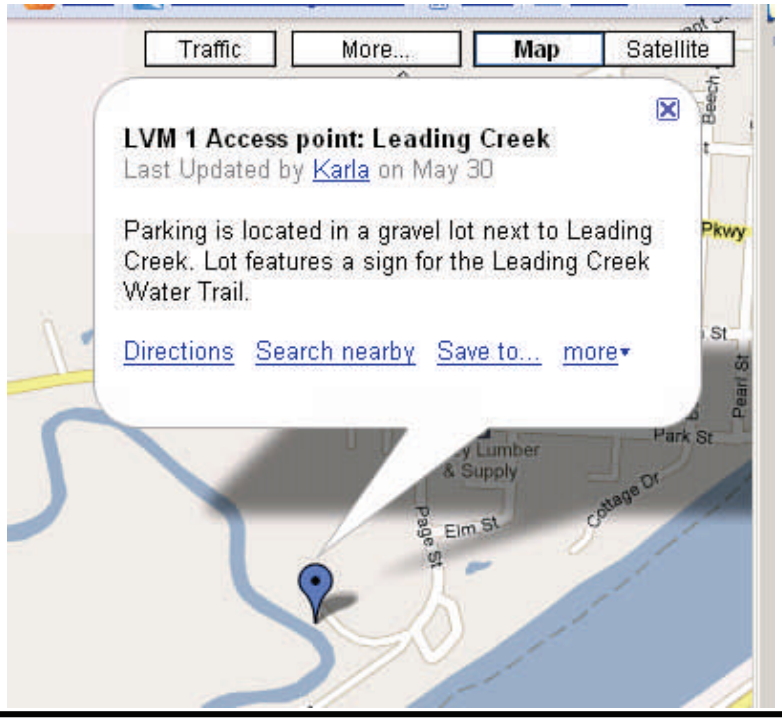
Section 3 : Study Area

The Study Area of the program is the Leading Creek Watershed. There are 23 volunteer monitoring sites, labeled LVM (Leading Volunteer Monitoring) 1—23.

An online link will be placed on the Meigs SWCD website www.meigsswcd.com under the volunteer page for the Google map. Volunteers may use this map for directions to each site. Further, a monitoring sites packet is available on the volunteer page. The sites packet describes each site, special instructions, and directions to each site.

The image below is a snapshot of the Google map showing each site location marked by a blue arrow. The arrows can be clicked on and a description of the site appears.





The image to the left shows a zoomed in section of the Google map shown above.

Section 4 : Monitoring Procedures

Volunteers will be provided with the *Streamkeeper's Field Guide* to assist with assessing the conditions of monitoring sites. Monitoring techniques will be taught during training sessions, beginning with the full day of training of July 16th. Volunteers will learn how to record field notes, take samples, and create reports of their findings.

Once a monitoring session is complete, the volunteers must return all borrowed equipment to the Meigs SWCD office and submit their field sheets and notes. The information from these field sheets and notes will be filed by program coordinators, included in annual reports, and presented on the Meigs SWCD website. Findings will also be entered into the watershed's online database www.watersheddata.com under Leading Creek Volunteer Data.

The following lists the procedures volunteers should follow on monitoring days:

1. Note the days you have signed up to monitor on the sign-up sheet provided during training.
2. On the day of monitoring check weather conditions and make sure they are suitable for being outdoors (i.e. no storms or blizzards. Light rain is okay but volunteers should not monitor during heavy rainfalls.)
3. Contact partner volunteer(s) to make sure they are still meeting you to monitor
4. Arrive to the Meigs SWCD office at the time listed on the sign-up sheet.
5. Check in with one of the program coordinators or staff and pick up a field sheet.
6. Sign out equipment needed for monitoring.
7. Make sure you have the following items before leaving to monitor:
    - Equipment and supplies needed:
        -Clipboard, field sheets, *Streamkeeper's Field Guide*, camera (optional), pen or pencil, test kit, meter (if accompanied by a program coordinator or staff), safety vest, gloves, trash bags, hip waders (if needed), first aid kit, bucket, tape measure.
    - Sunscreen / bug spray
    - Office phone number
    - Driver's license & Volunteer card
    - Local highway map
8. Make sure you know your route before you leave. Ask staff if you are unclear of directions.
9. Use caution when travelling to and parking at monitoring sites.
10. Once monitoring is complete, return to the Meigs SWCD and sign materials and equipment back in.
11. Make sure you leave with your field notes so you can create your reports.

Field Sheets

Field sheets will be available at the Meigs SWCD office and on the website (under the Volunteer page) for volunteers to use during monitoring sessions. The field sheets are based on a format found in *The Streamkeeper's Field Guide.* Volunteers may reference the book for information about filling out these sheets. Information from the sheets will be used to generate reports.

Field sheets will also be used to enter volunteer data into the watershed's online database found at www.watersheddata.com. Volunteer data will also be used for education and outreach purposes. Field sheets will be turned in by volunteers with reports. See page 18 for details about the report format.

Section 4 : Monitoring Procedures: Supplies

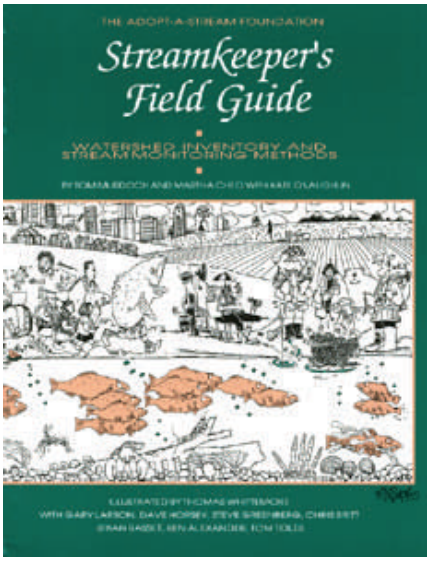
The following describes the supplies volunteers will be using in the field to monitor water quality.

· LaMotte Water Quality Monitoring Kit

Three of the kits, shown left, will be purchased for volunteers to share. Each kit includes 100 pH tests, 50 nitrate-nitrogen tests, 50 phosphate tests, 50 dissolved-oxygen tests, 20 alkalinity tests, 50 turbidity tests and temperature. The kit also includes a Water Quality Educator CD-ROM and a Monitors Handbook.

· Hanna HI 98280 GPS Multiparameter Meter

The meter tests pH, ORP, dissolved-oxygen, TDS, salinity, temperature, among other parameters. The meter features an internal 12 channel GPS receiver and antenna that calculates its position to track locations along with measurements. Each volunteer will have opportunities to use the meter.



· Streamkeeper's Field Guide, Watershed Inventory and Stream Monitoring Methods

Each volunteer will receive a copy of this illustrated and interactive book, which is a valuable resource for monitors. Chapters include: Understanding Watersheds, Watershed Investigations, Stream Reach Survey, Water Quality, Presenting Data, and many more. The book includes a number of hands-on activities, scenarios, data sheets, and over 250 pages of environmental science education related to stream health.

Section 4 : Monitoring Procedures: Supplies

· Hip Waders

Ten hip waders will be supplied for volunteers to share when sampling in deep water. Waders will not always be necessary, depending on the depth of the stream.

· Meter Calibration Solutions

Calibration solutions are required for the multiparameter monitoring meter. Volunteers will have an opportunity to learn why and how calibration solutions are used.

· Heavy Duty Buckets

Volunteers will have access to buckets to assist with monitoring events.

· Tape Measure

Volunteers may use tape measures to conduct stream surveys, as outlined in the *Streamkeeper's Field Guide.*

· Notebooks

Each volunteer will receive a notebook for recording field notes.

· Mechanical Pencils

Mechanical pencils will be used for taking field notes during monitoring events.

· Clipboards

Clipboards will be given out to volunteers to assist with taking field notes.

· First Aid Kit

First aid kits will be required in the field to assist in the case of an accident.

Section 4 : Monitoring Procedures: Supplies

· Safety Vests

Safety vests will be supplied to help protect volunteers working close to roads.

· Safety Gloves

Volunteers may encounter situations where the use of safety gloves will offer protection from potentially harmful materials. They will be used to clean up litter.

· Trash Bags

Trash bags will be provided to assist with litter clean-up events.

Notes about supplies:

As outlined in the program plan, the following supplies will be borrowed by volunteers but remain property of the Meigs Soil and Water Conservation District (SWCD):

- Multiparameter meter
- Hip waders
- Bucket, tape measures, first aid kits, clip boards
- Left over: tests from monitoring kits, safety vests, gloves, trash bags

The following will become property of Leading Volunteer Monitors:

- *Streamkeeper's Field Guide*
- Notebooks and pencils

Distribution of supplies:

Some supplies will be distributed during the June 28th orientation / introductory session (*Streamkeeper's Field Guide,* for ex.)

Volunteers will practice using all supplies during training.

Volunteers will be required to sign-out supplies from the Meigs SWCD office on the day of his or her monitoring event.

Leading Volunteer Monitors Program **Chemical Water Quality**

What is it we are sampling and assessing? There are 9 parameters; **pH, nitrate-nitrogen, phosphate, dissolved oxygen, alkalinity, turbidity, temperature, conductivity, and TDS.** The following is information from The Adopt-A-Stream Foundation: *Streamkeeper's Field Guide, Watershed Inventory and Stream Monitoring Methods*.

Understanding the chemistry of our streams is an important step toward determining the potential hazards to our water quality and discovering solutions for a healthier environment for humans and aquatic species alike. Evaluating the chemical water quality of a stream involves looking at the concentration of dissolved and suspended substances in the water. The chemical water quality of a stream is good if naturally occurring substances are present in the concentrations appropriate for the stream ecosystem. Problems occur when human activities alter the concentrations of naturally occurring substances or introduce substances that may be toxic to stream life.

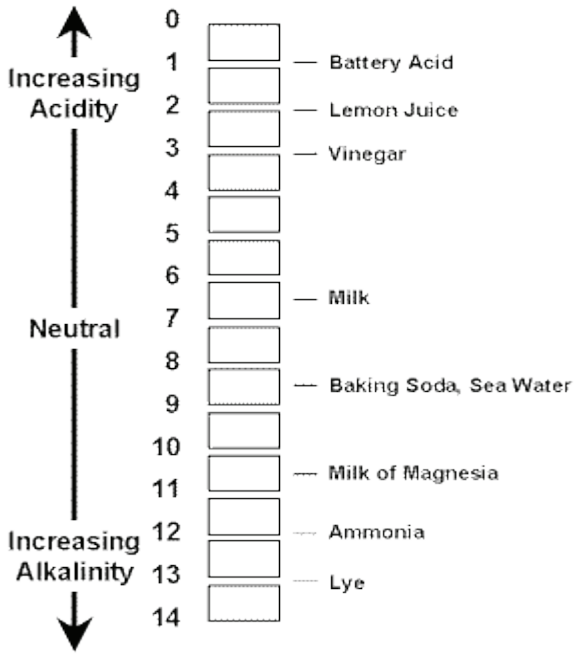
pH

pH is a measure of how acidic or basic the water is. Acids and bases are defined by the activity of two very reactive ions: hydrogen ions (H+) and hydroxyl ions (OH-). A solution that has more hydrogen ion activity than hydroxyl activity is considered acidic; one that has more hydroxyl ion activity than hydrogen ion activity is considered basic.

pH is an important limiting chemical factor for aquatic life. If the water in a stream is too acidic or too basic, the H+ or OH- ion activity may disrupt crucial biochemical reactions, harming or killing stream organisms.

pH is expressed in a scale which ranges from 1 to 14. A solution with a pH value less than 7 has more H+ activity than OH-, and thus is considered acidic. A solution with a pH value greater than 7 has more OH-activity than H+, and thus is considered basic. A solution with a pH of 7 is considered neutral; the H+ and OH- activity is balanced.

pH levels in the Leading Creek Watershed range from neutral to very acidic. Areas with more acidic waters are found in the southern areas of the watershed, particularly in the Thomas Fork and Cato's subwatershed areas. A recent 2010 sample at a Casto's tributary site showed a pH of about 3.



Nitrate-Nitrogen

Nitrogen promotes aquatic plant growth and occurs in natural waters in various forms, including nitrate, nitrite, and ammonia. Nitrate is the most common form tested. Test results are usually expressed as nitrate-nitrogen, which simply means nitrogen in the form of nitrate. Measuring nitrate requires a chemical reaction that yields cadmium, a toxic metal that requires special disposal. The treated sample can then be analyzed colorimetrically, which means the color of the sample reflects the concentration of the parameter being measured. The darker the color, the greater the concentration of the parameter.

The national drinking water standard for nitrate-nitrogen in the United States is 10 milligrams per liter (mg/l). However, polluted waters generally have a nitrate-nitrogen level below 1 mg/l.

Phosphate

Phosphorus usually occurs in nature as phosphate, which is a phosphorus atom combined with four oxygen atoms. Phosphate that is bound to plant or animal tissue is known as organic phosphate. Phosphate that is not associated with organic material is known as inorganic phosphate. Both forms are present in aquatic systems and may be either dissolved in the water or suspended (attached to particle in the water column).

Phosphorus is often the limiting nutrient for plant growth, meaning it is in short supply relative to nitrogen. Very small amounts of phosphorus – even as low as 0.01 mg/l – can have a significant impact on the plant growth in a stream, especially slower moving areas.

Dissolved Oxygen

Dissolved oxygen is the amount of oxygen dissolved in the water, and thus available for aquatic organisms to use. Almost all plants and animals, whether living on land or in the water, need oxygen for their growth and survival. This life-giving gas is present in the water in a dissolved form. Aquatic organisms have devised specialized means of extracting and storing oxygen from the water. Many aquatic plants have spongy tissue that enables them to store oxygen. Most aquatic animals possess gills or other types of specialized breathing adaptations.

Oxygen enters water from the air at the surface of the stream. Oxygen also enters the water from aquatic plants and algae. It is a by-product of photosynthesis, the process by which green plants use sunlight and carbon dioxide to produce their energy source, carbohydrates.

The amount of oxygen dissolved in water is expressed as a concentration. A concentration is the amount in weight (mass) of a particular substance per a given volume of liquid. The dissolved oxygen concentration in a stream is the mass of the oxygen present, in mg/l.

Section 4 : Monitoring Procedures: Parameters

The concentration of dissolved oxygen in a stream is affected by many factors. **One**, temperature; oxygen is more easily dissolved in cold water. Thus stream organisms that require high levels of dissolved oxygen, such as salmonids and many types of mayflies, stoneflies, and caddisflies, usually inhabit cold water streams. **Two**, flow; oxygen concentrations vary with the volume and velocity of water flowing in a stream. **Three**, aquatic plants; the presence of aquatic plants in a stream affects the dissolved oxygen concentration. As mentioned above, oxygen is released in water through photosynthesis. **Four**, altitude; oxygen is more easily dissolved into water at low altitudes than at high altitudes. **Five**, dissolved or suspended solids; oxygen is also more easily dissolved into water with low levels of dissolved or suspended solids.

Alkalinity

The alkalinity, or the buffering capacity or a stream refers to how well it can neutralize acidic pollution and resist changes in pH. Alkalinity measures the amount of alkaline compounds in the water, such as carbohydrates, bicarbonates, and hydroxides. These compounds are natural buffers that can remove excess hydrogen (H+) ions.

As increasing amounts of acid are added to a body of water, its buffering capacity is consumed. If surrounding soils and rocks are alkaline, they may eventually restore the buffering capacity, but a temporary decrease in alkalinity can allow the pH to drop to harmful levels. A total alkalinity of 100 – 200 mg/l will stabilize the pH level in a stream. Levels between 20 and 200 mg/l are typically found in fresh water.

Turbidity

Turbidity is a measure of the cloudiness of water. Cloudiness is caused by suspended solids (mainly soil particles) and plankton (microscopic plants and animals) that are suspended in the water column. Moderately low levels of turbidity may indicate a healthy, well-functioning ecosystem. Higher levels of turbidity pose several problems for stream systems. Turbidity blocks out light needed by aquatic species, and may increase the water's temperature above normal temperatures. Suspended soil particles may carry nutrients, pesticides, and other pollutants throughout the stream system, and they can burry eggs and benthic critters when they settle. Turbid waters may also be low in dissolved oxygen.

Temperature

Temperature is always included in water quality monitoring because it affects the concentrations and reactivity of many other parameters. As mentioned above, temperature influences the dissolved oxygen content of the water; as well as the rate of photosynthesis by aquatic plants, the metabolic rates of organisms, the sensitivity of organisms to toxic wastes, parasites and diseases, and the timing of reproduction, migration and aestivation of aquatic organisms.

Section 4 : Monitoring Procedures: Parameters

Conductivity

Conductivity is a measure of how well water can pass an electrical current. It is an indirect measure of the presence of inorganic dissolved solids such as chloride, nitrate, sulfate, phosphate, sodium, magnesium, calcium, iron, and aluminum. The presence of these substances increases the conductivity of a body of water. They help to conduct electricity because they are negatively or positively charged ions when dissolved in water.

Dissolved solids are essential ingredients for aquatic life. They regulate the flow of water in and out of organisms' cells, and are building blocks of the molecules necessary for life. A high concentration of dissolved solids, however, can cause water balance problems for aquatic organisms and decreased dissolved oxygen levels.

TDS

TDS, or total dissolved solids, is a measure of the combined content of all inorganic and organic substances contained in a liquid in suspended form. TDS is used as an indication of the presence of a broad array of chemical contaminants.

Primary sources for TDS in receiving waters are agricultural and residential runoff, leaching of soil contamination and point source water pollution discharge from industrial or sewage treatment plants. The most common chemical constituents are calcium, phosphates, nitrates, sodium, potassium, and chloride.

Schedule

TRAINING: July 16th 9:00—4:30 Conservation Area

Fall training: _____

Winter training: _____

Spring training: _____

LITTER CLEAN-UP

Fall: _____

Fall: _____
Leading Creek Stream Sweep
Ohio River Sweep

MONITORING

The following dates are available for monitoring:
August: 13, 23, 26, 27
September: 8, 10, 23, 24

October: 4, 8, 18, 22
November: 3, 5, 17, 19

January: 3, 7, 19, 21
February: 7, 11, 14, 23

April: 4, 8, 18, 22
May: 4, 6, 18, 20

See the sign-up sheet for details.
Sign up for at least four days.
Volunteers are encouraged to monitor at least three sites per monitoring session.
Volunteers must monitor with at least one other volunteer or program staff. Program staff will help volunteers arrange monitoring sessions with other volunteers.

Section 4 : Monitoring Procedures: Safety

One of the most critical considerations for the Leading Volunteer Monitoring Program is the safety of its volunteers. All volunteers will be trained in safety procedures and should carry with them the following set of safety instructions and the phone number of the program coordinator or team leader. Safety precautions can never be overemphasized.

The following are some basic common sense safety rules. At the site:

Always monitor with at least one partner. Teams of three or four people are best. Always let someone else know where you are, when you intend to return, and what to do if you don't come back at the appointed time.

Develop a safety plan. Find out the location and telephone number of the nearest telephone and write it down. Locate the nearest medical center and write down directions on how to get between the center and your site(s) so that you can direct emergency personnel.

Take a first aid kit into the field. Know any important medical conditions of team members (e.g., heart conditions or allergic reactions to bee stings). It is best if at least one team member has first aid/CPR training.

Listen to weather reports. Never go sampling if severe weather is predicted or if a storm occurs while at the site.

Never wade in swift or high water. Do not monitor if the stream is at flood stage. If you drive, park in a safe location. Be sure your car doesn't pose a hazard to other drivers and that you don't block traffic.

Put your wallet and keys in a safe place, such as a watertight bag you keep in a pouch strapped to your waist. Without proper precautions, wallet and keys might end up downstream.

Never cross private property without the permission of the landowner. Take along a card identifying you as a volunteer monitor.

Confirm that you are at the proper site location by checking maps, site descriptions, or directions. Watch for irate dogs, farm animals, wildlife (particularly snakes), and insects such as ticks, hornets, and wasps. Know what to do if you get bitten or stung.

Watch for poison ivy, poison oak, sumac, and other types of vegetation in your area that can cause rashes and irritation.

Never drink the water in a stream. Assume it is unsafe to drink, and bring your own water from home. After monitoring, wash your hands with antibacterial soap.

Do not monitor if the stream is posted as unsafe for body contact. If the water appears to be severely polluted, contact your program coordinator.

Do not walk on unstable stream banks. Disturbing these banks can accelerate erosion and might prove dangerous if a bank collapses. Disturb streamside vegetation as little as possible.

Section 4 : Monitoring Procedures: Safety

Be very careful when walking in the stream itself. Rocky-bottom streams can be very slippery and can contain deep pools; muddy-bottom streams might also prove treacherous in areas where mud, silt, or sand have accumulated in sink holes. If you must cross the stream, use a walking stick to steady yourself and to probe for deep water or muck. Your partner(s) should wait on dry land ready to assist you if you fall. Do not attempt to cross streams that are swift and above the knee in depth. Wear waders and gloves in streams suspected of having significant pollution problems.

If you are sampling from a bridge, be wary of passing traffic. Never lean over bridge rails unless you are firmly anchored to the ground or the bridge with good hand/foot holds.

If at any time you feel uncomfortable about the condition of the stream or your surroundings, stop monitoring and leave the site at once. Your safety is more important than the data!

When using chemicals:
Know your equipment, sampling instructions, and procedures before going out into the field. Prepare labels and clean equipment before you get started.

** The source of the safety information is the "Volunteer Stream Monitoring: A Methods Manual," developed by the U.S. Environmental Protection Agency's Office of Water.*

Volunteers should have fun with this program, in a safe way!

Program Procedures: Reports

Each volunteer will be asked to create one-page reports of their finds after each monitoring session. Volunteers should use their field sheets and notes to create these reports. Reports will be used for education and outreach purposes. For example, they will be summarized and information from them will be made available on the Meigs SWCD website. Information from them will also be used during public meetings, special events, and education programs with students.

The following questions and points should be addressed in the report:

- The date, time, and location monitoring site.
- Describe the procedures you used to monitor. What did you do? What equipment did you use? Were you confident about using the materials to monitor?
- In one or two paragraphs list the results for each parameter you tested during your monitoring session for each site. What do you think the numbers mean?
- Describe the physical condition of the site. Is there a lot of debris? Is it sandy / rocky? Is there a lot of vegetation, housing, nearby livestock, development, etc.?
- Did anything interesting occur during your monitoring session?
- What did you like / dislike about the site(s) you monitored?

Section 5 : Monitoring Sites

Sites are labeled LVM (Leading Volunteer Monitoring) 1—23. This sheet lists the sites, and more information about each site may be found on the volunteer page at www.meigsswcd.com. The site features a monitoring site packet and link to an interactive Google map showing the locations of each site.

LVM 1 Leading Creek Water Trail Marina, Middleport : Page Street Water Trail Marina

LVM 2 Leading Creek above mouth of Thomas Fork: Under State Route 7 bridge

LVM 3 Thomas Fork off of Rocksprings Road

LVM 4 Thomas Fork upstream Rocksprings Road

LVM 5 Parkinson Road bridge over Leading Creek before Langsville

LVM 6 Leading Creek near Malloons Run Mouth: Malloons Run Road

LVM 7 Malloons Run near mouth before Leading Creek

LVM 8 Parker Run on AEP Conservation Easement property: Parker Run Road

LVM 9 Debbie Bullington's Property (to be monitored by Debbie): Sidehill Road

LVM 10 Mud Fork mouth before Leading Creek**:** Old Dexter Road

LVM 11 Dyesville Run: Harmon Road

LVM 12 Five Mile Run near mouth before Leading Creek: Woodyard Road

LVM 13 Five Mile Run upstream from Site LVM 12: Woodyard Road

LVM 14 Five Mile Run further upstream from Dairy Farm: Woodyard Road

LVM 15 Upper Mud Fork: State Route 692

LVM 16 Rina Caldwell's Property (to be monitored by Rina and neighboring volunteers):

Nicholson Hill Road

LVM 17 Caty Crabb's Property (to be monitored by Caty and neighboring volunteers):

Beech Grove Road

LVM 18 Caty Crabb's Property (to be monitored by Caty and neighboring volunteers)

LVM 19 Casto's Tributary: State Route 143 at Humphreys Drive

LVM 20 The Unnamed Tributary & Thomas Fork: Thomas Fork ABOVE Unnamed Trib. mouth:

Bailey Run Road

LVM 21 The Unnamed Tributary & Thomas Fork: Thomas Fork BELOW Unnamed Trib. mouth

LVM 22 Headwaters of Leading Creek near OU Airport

LVM 23 Headwaters of Leading Creek

Volunteer Appreciation

Dear Leading Volunteer Monitor,

Your participation in this program means a great deal to the Leading Creek Watershed Group and the health of the Leading Creek watershed communities.

We hope you enjoy this program and know it may help you with your future endeavors. As a way of saying thank you, this page is dedicated to appreciating your time, commitment, and effort to be part of this program and bring new information to us about the Leading Creek Watershed.

We hope you continue to stay inspired and motivated to enjoy the beauty and tranquility of the Leading Creek Watershed while you work as a volunteer. We want you to have a fun time!

Below are some quotes for you.

“We make a living by what we get, but we make a life by what we give.”
~Winston Churchill

"Each time someone stands up for an ideal, or acts to improve the lot of others, or strikes out against injustice, he sends forth a tiny ripple of hope."
~ Robert F. Kennedy

"In helping others, we shall help ourselves, for whatever good we give out completes the circle and comes back to us."
~ Flora Edwards

“Volunteerism is the voice of the people put into action. These actions shape and mold the present into a future of which we can all be proud.”
~ Author Unknown

Thank you.