# LEADING CREEK

## Restoring our watershed through the Leading Creek Improvement Committee

BY

MEIGS SOIL & WATER CONSERVATION DISTRICT

AND U.S. FISH & WILDLIFE SERVICE

Leading Creek at
Folden Road Tunnel

# WHAT'S A 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. 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.

Watersheds are often connected. Small watersheds come together to form larger watersheds and so on. 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. Connections such as these demonstrate the importance of conservation and protection of our local water resources. Actions in Meigs County could potentially benefit or harm the lives of people in communities all the way to the ocean. This includes things like using water at work or on farms, recreational uses, and vital uses like drinking water supplies.


Watershed Map for Leading Creek

Leading Creek begins in Athens County and then winds south through Meigs County. It skirts the Gallia County line before joining with the Ohio River near Middleport.

Photo of the Ohio River by Sarah Lawrence

# The Leading Creek Watershed

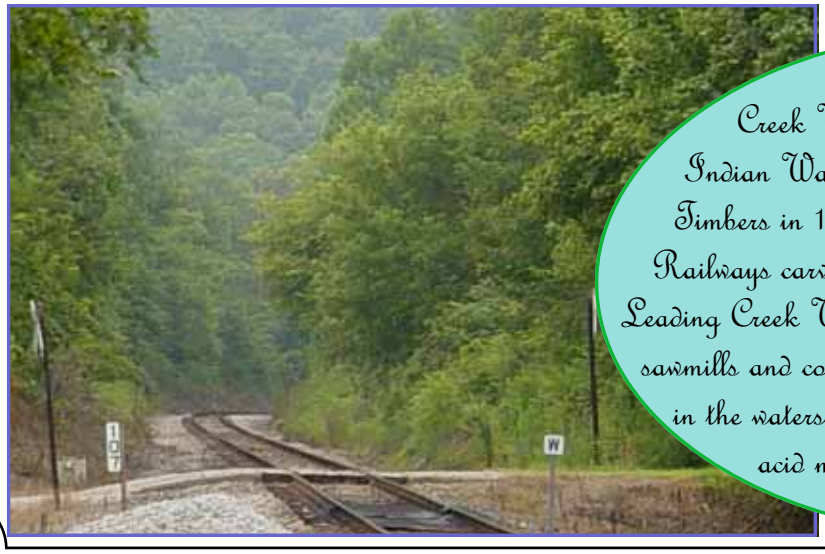
The Leading Creek Watershed consists of slightly more than 150 square miles, or 96,000 acres, in southeastern Ohio. The watershed comprises most of the western half of Meigs County and small portions of Athens and Gallia counties. Leading Creek stretches about 30 miles through the Appalachian foothills before discharging into the Ohio River near the community of Middleport.

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 Leading Creek 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.

Leading Creek at river mile 10.3

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.

But despite the water quality issues in local streams, the people of the Leading Creek Watershed have shown a venerable stewardship for the land. Annual litter clean ups along Leading Creek have been great successes each year since 2000.



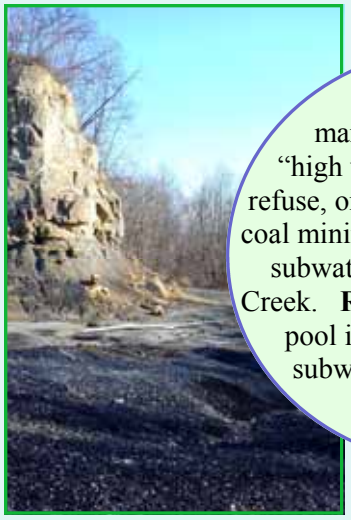
Settlement of the Leading Creek Watershed began shortly after the Indian Wars concluded with the Battle of Fallen Timbers in 1794 and the 1795 Treaty of Greenville. Railways carved out some of the first settlements in the Leading Creek Watershed by connecting the area's gristmills, sawmills and coal 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.

# COAL MINING REMNANTS

Historic land use practices have greatly modified the current condition of Leading Creek and many of its tributaries, or subwatersheds. Extensive clearing of forestlands for agriculture and settlement left hillsides bare and exposed highly erodible soils. Today, sediment resulting from abandoned mine lands, agricultural use, and stream bank clearing fills many of the stream channels. 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.

**Thomas Fork, a tributary to Leading Creek, has an unnamed tributary that constantly discharges acid mine drainage with an average pH of 2.5 directly into the stream. It is the top source of acid mine drainage in the Leading Creek 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.



**Left:** This man-made cliff, or "high wall," and the coal refuse, or "gob," is left from coal mining in the Titus Run subwatershed of Leading Creek. **Right:** This large mine pool in the Bailey Run subwatershed is filled with AMD.

# Leading Creek Improvement Committee

Numerous biological and water quality surveys have been conducted in the Leading Creek Watershed after the Southern Ohio Coal Company (SOCCO) Meigs #31 Mine discharge. Following the event, the federal government charged the Southern Ohio Coal Company 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. The Leading Creek Improvement Account has provided financial support for projects conducted in the watershed, such as riparian protection and public education. SOCCO also created a 993 acre conservation easement in the name of the Meigs Soil & Water Conservation District (SWCD). This easement protects land along Leading Creek and tributaries such as Parker Run and Malloons Run from development and provides a continuous tract of wildlife habitat.

The U.S. Fish and Wildlife Service is required to use the monies in the Leading Creek Improvement Account to restore, replace, or acquire the equivalent of the resources injured in the 1993 event. The Fish and Wildlife Service is required to accomplish projects in an expeditious and ecologically sound manner. They have provided funding to the Meigs 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.

As a result of the creation of the Leading Creek Improvement Account, money is available to improve natural resources in and around Leading Creek and its tributaries. Unlike many programs such as CRP, WHIP, and EQIP no matching funds are required from landowners. This is a wonderful opportunity for property owners to both improve their land and the environment. To have the greatest impact we need to act now to prevent further loss of resources.

# LCIC Project Types

Landowners in the Leading Creek Watershed are encouraged to contact the Meigs SWCD in Pomeroy, Ohio to find out more about opportunities for their land along streams. Meigs SWCD staff also regularly contact landowners along priority streams in the watershed to offer programs through the Leading Creek Improvement Committee. Watershed landowners can participate in many projects that can help improve and protect Leading Creek and enhance their land.

Some examples of the projects being offered to landowners include but are not limited to:

- Streamside, or riparian, protection through tree and shrub plantings
- Riparian protection through fencing and livestock exclusion
- Streambank stabilization and erosion control
- Conservation of land through creation of an Environmental Covenant
- Reclamation of abandoned mine land and remediation of acid mine drainage

# Streambanks & Soil

Excess sediment in streams can choke aquatic life. Changes in land use within a watershed will change sediment types and amounts in a stream. Activities such as construction, logging, farming, and unregulated mining are just some of the ways this can happen. Following best management practices can help prevent this problem.

When a large input of sediment is forced into a stream system, the sand and soil moves downstream through the watershed. Unreclaimed strips mines once contributed to this in the Leading Creek Watershed.

Several feet of sand covering the streambed of Mud Fork with water below it

Many landowners recall that about 30 years ago several tributary streams were filled nearly to the top of the banks with sand. Now many of the same streams have been naturally cleaned out, some to the extent that the streambanks are now ten feet high or more.

These steep banks can cause problems for landowners. Those that own streamside land in the Leading Creek Watershed may be able to take advantage of streambank stabilization projects through the Leading Creek Improvement Committee.

# Riparian Habitats

Riparian forest buffer project that converted croplands into a protected area by the stream and created a wildlife habitat

It is important to have plants and trees along streams or shorelines to maintain banks and to protect water quality. The transition area between the land and water is known as the riparian habitat. It is very sensitive to changes in water levels and other influences that result from changes in the land use or climate. This riparian zone can provide a canopy to shade aquatic ecosystems, filter out pollutants in runoff, stabilize streambanks, and decrease erosion. Riparian habitats can benefit from something as simple as planting trees or simply protecting it and leaving it to nature. The Leading Creek Improvement Committee can assist landowners in the establishment of riparian protection zones along streams in the Leading Creek Watershed.

# AGRICULTURE & STREAMS

Improper management of waste from livestock can become a serious problem to the land and water of a farm.

Grassed waterways are placed in natural drainage ways or swales to reduce erosion and prevent gullies. These areas are not farmed, but left in permanent grass and mowed. Grass filter strips are similar and provide buffers between crop lands and streams. They absorb excess chemicals and nutrients and can provide habitat for small birds and mammals.

The Leading Creek Improvement Committee has worked with several landowners to implement these types of projects on farms in the watershed. Landowners in the Leading Creek Watershed can contact the Meigs Soil & Water Conservation District to learn how the Leading Creek Improvement Committee can help improve their farm and protect the watershed at the same time.

A properly managed farming operation can be an asset to the economy and to the land. Excluding livestock from certain areas is a key part of agriculture management.

Allowing livestock to graze in woodlands increases soil erosion, eliminates wildlife food and cover and decreases bird and small mammal populations. Grazing animals along riparian corridors destabilizes the streambank, which causes soil erosion and reduces the quality of the riparian zone.

One solution to these problems is to simply fence animals out of these areas and provide alternative water sources or suitable stream crossings.

Correctly storing and spreading manure is another critical issue on farms. Animals wastes can directly enter and contaminate fresh water sources if not well handled. This can increase the nutrient levels in the water to unsafe amounts for both animals and humans. Waste must be dispersed in a proper way so that plants can absorb the nutrients.

Fencing cows out of a stream will also reduce the direct deposit of animal wastes to a stream. A well managed pasture can be productive and environmentally positive.

This grass filter strip project is combined with streamside trees to provide a barrier between a corn field and a stream.

# Environmental Covenants

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 also 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 an environmental covenant 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.' This means the environmental covenant will remain in place even if the land is sold. These agreements can be tailored to each individual's needs. They allow the landowner to maintain ownership of the land and preserve it as they see fit. Some examples of practices a landowner may continue to do on land under an environmental covenant include hunting, fishing, and maintaining existing trails.

When protecting land with this type of agreement, the landowner will be assured that the property will never be developed, yet can still maintain ownership of the land and still enjoy the property. Environmental covenants are a valuable tool that can be considered in future plans for families that own single tracts of land or several. They can be utilized to help ensure that property is protected as open and green space in the Leading Creek Watershed. A landowner may also be able to benefit from financial incentives and compensation.

Today's pressure from encroaching development and urban sprawl have sparked a growing concern over the loss of green space and natural resources. Through the Leading Creek Improvement Committee, a landowner can permanently protect land for wildlife habitat and help to protect a piece of the Leading Creek Watershed.

Franklin Real Estate Company, an affiliate of American Electric Power, granted the Meigs SWCD a conservation easement of 993 acres that creates habitat protection for parts of Leading Creek and tributaries. Shown here is a stretch of Malloons Run that is part of the easement and has excellent water quality.

# Education & Outreach

Educating people of all ages is vital to the success of any project and to the health of Leading Creek. That's why the Leading Creek Improvement Committee helped to fund several education and outreach events and activities in 2007.

The Leading Creek Stream Sweep was a great success with a record number of people attending to pick up trash in several different areas of the watershed.

The 2007 Leading Creek Watershed Day Camp was a two day outdoor day camp for children. Presenters from many different organizations helped out by teaching lessons in their area of expertise. The stations at camp included topics such as wildlife, forest fire prevention, water pollution, bugs in the stream, and mining history.

Teachers and organizations with education programs were able to attend Educator's Workshops. These workshops give educators creative ways to teach environmental and scientific subjects and still correlate lessons to the Science Standards. The programs covered included 'Healthy Water, Healthy People,' 'Project Learning Tree,' and 'Project Wild: Science and Civics.'

Another annual watershed event is the fall Leading Creek Watershed Tour. Participants get to see current projects and new parts of the watershed while enjoying the colors of fall in nature.

To keep the communities notified and up to date on watershed activities, the Community Watershed Bulletin Boards Project was started. By posting these bulletin boards in local businesses, the hope is to get more watershed residents involved.

Fish shocking by OEPA in Leading Creek during a watershed tour

The 7th Annual Leading Creek Stream Sweep

Children learning about chemistry and water quality at Leading Creek Watershed Camp

A presenter at Watershed Camp brought raptors from Hocking Hills State Park

*This publication was created by*

**Meigs Soil & Water Conservation District**

33101 Hiland Road
Pomeroy, OH 45769
740-992-4282

*in partnership with*

**U.S. Fish & Wildlife Service**

6950 Americana Parkway, Suite H
Reynoldsburg, OH 43068
614-469-6923

*This publication was funded by* U.S. Fish & Wildlife Service.