

# Great Miami River Citizens' Water Quality Monitoring

When: Third Saturday of each month  
March - November

Where: UC Center for Field Studies  
11053 Oxford Road, 45030

Sample drop off: 10:00 a.m. - 11:00 a.m.

Sample analysis: 10:30 a.m. - early afternoon

Bag lunch meal provided

Get started today! Contact:

**Nate Holscher**

513.761.4003

[Nate.Holscher@riversunlimited.org](mailto:Nate.Holscher@riversunlimited.org)

Please visit our web site for more information:

[www.riversunlimited.org](http://www.riversunlimited.org)

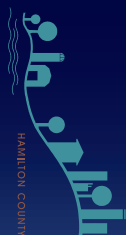
We would also like to acknowledge our sister programs, The Butler County Stream Team and Saturday Stream Snapshot, for their support.

## Safety Rules for Volunteer Monitors

- Watch weather reports prior to going into the field.
- Carry first aid kit and water.
- Dress properly for the weather.
- Sample in teams or with partners.
- Inform someone where you are going and when you plan to return.
- All monitoring stations should be safe for volunteers to access and perform their sampling.
- Inform sampling team members of relevant health information in case of emergency.
- If you do not feel comfortable with the monitoring site or your surroundings, leave the site.
- If a site appears severely polluted, report it.
- If you drive to a site, park in a safe location.
- Do not cross private property without permission.
- Watch out for poisonous plants and wildlife.
- Dress appropriately for protection against ticks.
- Do not wade in fast moving or high water.
- Use antibacterial soap after monitoring and do not eat until you have washed your hands.
- Avoid water contact with open skin.
- Avoid contact between chemicals and skin, eyes, or mouth. Wearing gloves is recommended.
- Properly clean and dispose of any spills of chemicals.
- Properly dispose of all wastes from tests.

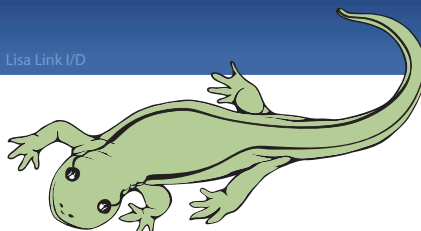
Center for Field Studies  
UNIVERSITY OF  
**Cincinnati**

HAMILTON COUNTY  
soil and water  
CONSERVATION  
DISTRICT



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**Citizens' Water Quality Monitoring**

Great Miami River Watershed  
HAMILTON COUNTY



The lower GMR water quality monitoring program is a collaborative volunteer effort supported by Rivers Unlimited and Friends of the Great Miami, and sponsored in part by the Hamilton County Soil and Water Conservation District and the University of Cincinnati Center for Field Studies. The goal of this collaboration is twofold: our first purpose is to educate the citizens of our watershed about water quality issues to encourage protection of the lower Great Miami and its tributaries as a valuable natural resource. The second objective is to provide quality data that meet EPA reportable standards.

Volunteers are the heart of our program and offer a personal connection with the streams they monitor, strengthening our program. Spending time on the water gives volunteers the opportunity to learn about water quality while collecting valuable data. The importance of volunteer monitoring and the data collected through groups such as ours is evident by the enactment of Ohio HB43; the primary reason for the legislation is the concept that the State should have as much good scientific information about our surface waters as possible in order to properly manage them.



## What We Monitor and Why...

**NITRATES:** a form of nitrogen found in aquatic environments.

### Why we test for nitrates...

Nitrate is necessary to aquatic plant life, but can result in excessive plant growth, especially algae, if available in disproportionate amounts. Sources of nitrates include sewage treatment plants, septic systems, fertilizers, industrial discharges, and animal manure.

**PHOSPHOROUS:** occurs naturally as phosphates which are necessary to aquatic plant life. Increases in phosphates can lead to excessive algae growth.

### Why we test for phosphates...

Excess phosphates can lead to excessive algae growth and possibly algae blooms. Sources of excess phosphates include sewage treatment plants, septic systems, fertilizers, industrial discharges, and animal manure.

**BACTERIA:** fecal coliforms are used as an indicator for fecal contamination.

### Why we test for bacteria...

The presence of fecal coliforms is a possible indicator of human and/or animal fecal contamination of water. Fecal contamination of water can lead to human illness if that water is ingested. Human and animal feces, leaking septic systems, wastewater treatment plants, and water runoff can all carry fecal bacteria to waterways.

**CONDUCTIVITY:** tells us how well the water sample can carry an electric current.

### Why we test conductivity...

Conductivity readings can indicate environmental problems such as excessive salts that may be harmful to plants. Too few ions may indicate high levels of oils or hydrocarbons that are not healthy for aquatic organisms or humans that come in contact with them. Conductivity can be influenced by the geology of the stream and surrounding watershed, temperature, and industrial and wastewater discharges.

**TURBIDITY:** the concentration of suspended solids in water, such as soil, microbial life, and algae.

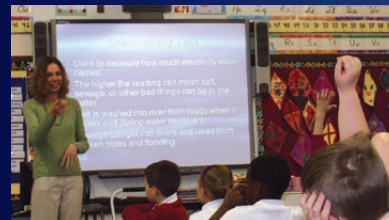
### Why we test turbidity...

A high turbidity level can result in higher water temperature from heat absorbed by the particles. This can also reduce dissolved oxygen (DO) in the water because warm water holds less oxygen than cold water. Both of these effects, among others, result in depleted habitat quality. Turbidity can be influenced by erosion, urban runoff, and algae blooms from excessive nutrients.

**pH:** measure of how acidic or basic water is based on a scale of 1 (acidic) to 14 (basic) where 7 is neutral.

### Why we test pH...

pH is an important measure because most plants and animals can only survive in a pH range from approximately 6.5 to 8. pH can be altered by acid rain, rocks in the stream, and wastewater discharges.



## Becoming a volunteer

### is easy and rewarding!

All sampling and analysis techniques are demonstrated by a qualified data collector. Sampling tests range in simplicity; we generally start volunteers out on less complicated tests but encourage all to step in where comfortable. Please view the preferred sampling site map on our website, [www.riversunlimited.org](http://www.riversunlimited.org), and decide which available sites you would like to adopt. We are happy to analyze any sites in our monitoring area that interest you. In order to get quality data, we request samples be taken at least six of the nine months of the monitoring season. We present our data annually at the Lower Great Miami Water Quality Forum held in February. The conference includes a presentation on the previous year's data trends and problem areas. This event is free and open to the public. Please join us and learn about your watershed.

### Goals of Citizens' WQM

- Educate the local community about water quality issues to encourage protection of our watershed
- Establish baseline data
- Supplement water quality data collected by agencies
- Document water quality changes over time (trends in water quality)
- Identify potential water quality problems
- Provide a scientific basis for making decisions on watershed management
- Provide information to evaluate the effectiveness of best management practices
- Determine the impact of land use activity (urban, industrial, agricultural, etc.)