



# Outdoor Education

The Geauga SWCD provides assistance to schools to utilize the outdoors and extend their indoor curriculum to the school yard and beyond.

## Stream Quality Monitoring (SQM)

SQM is an excellent way for youth and adults to learn about the macroinvertebrates that live in streams. It is an interactive learning experience which allows participants to study water quality and the importance of keeping our water resources clean. An in-class presentation on macroinvertebrates is available to help prep students for this adventure.

### ◆ 4th-6th Grade

Students will use a kick seine to collect and identify macroinvertebrates to determine the water quality.

### ◆ Middle-High School (Grades 7-12)

Students will collect macroinvertebrates and study various components of stream habitat. Chemical tests will be performed for pH, nitrates, phosphates, temperature, conductivity, salinity, dissolved oxygen, and turbidity.

## Additional Conservation Opportunities

- \* Outdoor Education Grants
- \* Teacher Workshops for Graduate Credit and CEU's
- \* "Watershed Ripples" Newsletter
- \* Science Fair Judging
- \* Annual Conservation Poster Contest
- \* Millennium Youth Conservationists Club
- \* Envirothon Information and Assistance
- \* Teacher of the Year Contest

All programs are aligned to the Ohio Academic Content Standards established by the Ohio Board of Education and are presented free of charge. Although specific presentations are listed, the Geauga SWCD can work with you to provide a presentation tailored to a specific topic or curriculum. Contact Ron Etling, District Conservation Educator, at 440-834-1122 or [retling@geaugaswcd.com](mailto:retling@geaugaswcd.com), to schedule a presentation.

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### *Geauga SWCD Mission:*

*"To conserve, protect, and enhance the resources of Geauga County by providing leadership, education, and assistance to all."*

### Geauga Soil and Water Conservation District

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All services are provided without regard to race, religion, gender, age, physical or mental handicap, national origin or politics.



Geauga Soil and Water Conservation District

# Nature Education Programs

## 2009-2010



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*The programs highlighted below have been designed to meet the Ohio Academic Science Content Standards. These correlations can be viewed online at <http://www.geaugaswcd.com/correlations.htm>. In addition, all programs offered by Geauga Soil and Water Conservation District are supplemented with pre and post activity guides for teachers.*

### **Soil Sleuths**

Students will discover the properties of soils through demonstrations, experiments, and activities. This program offers a hands on learning experience for all.

- ◆ **Grades K-2**  
This presentation allows the students to participate in the “Flower Pot” activity to gain an understanding of the concept of permeability while learning about the different parts of the soil- sand, silt, and clay.
- ◆ **Grades 3-6**  
Students will learn about the different particles found in the soil, how each particle effects the way a soil behaves, and key terms involving soil science.
- ◆ **Grades 7-12**  
This program allows students to use different physical and chemical tests to determine the different properties of soil.

### **Oil, Toil and Trouble**

How much oil is spilled when a tanker leaks? Or a local factory has a spill? How does this affect aquatic, wild and human life?

- ◆ **Grades K-3**  
Students discover that water and oil don't mix and how oil pollution affects the health of water, animals and us!
- ◆ **Grades 4-6**  
Students discover hands-on how oil pollution affects the animal life it comes in contact with and how oil response teams clean up spills.

### **Web of Life**

Discover the interdependency of plants, animals and humans through this hands-on program. Explore food chains, food web, and energy cycle!

- ◆ **Grades K-5**  
Students will become familiar with the concept “web of life” as well as the four components of habitat and the basic needs of plants and animals.

### **Freddie The Fish**

This hands on presentation uses Freddie the Fish to give your students a fishes-eye-view of what life is like in a polluted river.

- ◆ **Grades K-3**  
Participants will follow Freddie the Fish downstream to gain an understanding of the importance of clean water, ways in which we pollute the water, and the impacts pollution has on wildlife.

### **Enviroscape**

Discover the concepts of watersheds as well as water pollutants and their sources through this hands on watershed model.

- ◆ **Grades 4-6**  
Students discover how point source and non point source pollution impact streams, rivers, and lakes. Students will discuss ways they can help prevent pollution and conserve our water resources.
- ◆ **Grades 7-12**  
Students will use the Enviroscape to learn about watersheds, point and non point source pollution, best management practices to prevent pollution, and where pollutants originate. Find out about environmental regulations and how different government agencies play a role in keeping our water clean.

### **Stream Team Detective**

This presentation utilizes the Streamulator, a hands-on stream model. Students will be detectives and try to determine outcomes of different scenarios.

- ◆ **Grades 4-6**  
Students will learn the concept of stream systems, and the effects that humans can have on stream quality. Watersheds, erosion, flow, and land use issues will be discussed.
- ◆ **Grades 7-12**  
See first hand the effects of development on velocity and erosion, watersheds, flow, and land use.

### **Incredible Journey**

Water is a valuable resource and a limited one. Students will engage in a hands on activity to learn concepts associated with the water cycle.

- ◆ **Grades 2-5**  
In this program, students learn about the water cycle by becoming a water molecule. They also learn ways to conserve and protect the freshwater resources that we depend on.

### **What's Under Your Feet? Groundwater**

This program utilizes the Ground Water Flow Model and offers a realistic visual interpretation of the various types of ground water aquifers that exist throughout Ohio's subsurface environment.

- ◆ **Grades 3-6**  
Participants will use the Ground Water Flow Model to explore the hydrologic cycle, the water table, soil structure and how non point source pollution can affect our underground water resources.
- ◆ **Grades 7-12**  
In this program, students will become familiar with the interrelationships that exist between ground and surface water, the cone of depression associated with a pumping well, the cause and probability of aquifer contamination, the impacts of non point source pollution on groundwater, and the importance of preventing ground water contamination.

### **Benthic Bugs**

Are you stuck inside? Unable to take your students outside for stream quality monitoring? We can help, we can bring this unique opportunity indoors through this interactive stream quality monitoring simulation activity!

- ◆ **Grades 6-12**  
Students will discover the importance of bioassessment and the effects of point and non point source pollution.

### **Riparian Rescue**

What is the riparian zone? And, why is it so important in water resource management? How does nonpoint source pollution and habitat destruction affect wildlife that depend on this ecosystem for survival?

- ◆ **Grades K-12**  
Students will discover through hands-on activities and live indicator species the concerns this fragile environment faces.