Roots

Digging Deeper into Soil & Water Resources

STREAM STEWARDSHIP

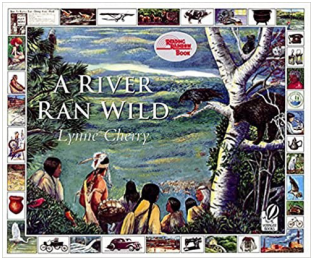
Have you ever noticed natural streams are not straight? They wind and curve back and forth. These **meanders** provide important diversity for animal habitats with deeper pools of nearly still water in some areas and shallow areas with water flowing quickly over rocks, in others. The faster moving water in the rocky **(riffle)** areas provides more oxygen which some organisms need. Some animals prefer open, sunny water while others prefer shaded, cooler areas. Rocks along the edge and bottom provide great hiding places and shelter for a variety of animals.

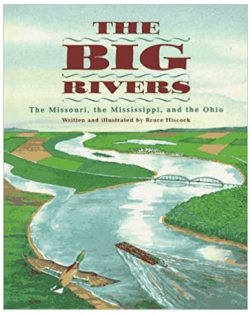
We do not generally think of a creek as having skin; however, the vegetation along a stream serves as its protection, like the skin on our bodies. This vegetative buffer protects the stream from pollution in the same way our skin protects our bodies from things that can do us harm. When we mow vegetation down along the edge of streams, construct buildings close to streams or place blacktop at the edge of the stream banks, we remove the protective layer rivers and streams need to stay healthy.

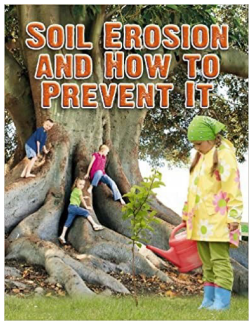
The most effective **buffers** contain a variety of vegetation; trees, shrubs and non-woody, native perennial plants. Each type of vegetation plays an important role in protecting the quality of the stream. Among other things, they have different kinds of roots. Trees have large, woody roots. Non-woody, native perennials have finer roots that can extend 14' into the ground. These roots hold soil in place and help keep pollution out of our waterways. These roots can also remove pollution from water before the water flows into streams. **Vegetated buffers** stabilize banks, keep creeks cool, reduce algal growth and provide food/shelter for aquatic and terrestrial organisms.

Streams need vegetated banks and stable channels to keep them clean. Preserving the meanders and planting trees and native plants along the banks can help. Let's **work together** to protect local streams.

LITERACY CONNECTIONS







Did you Know?

Franklin Soil and Water has discovered that structures called stream inserts can be installed in order to enhance aquatic life in our waterways. Check out this stream insert in Willow Brook.

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STREAM STEWARDSHIP

EXPLORING EROSION

It's time to take a closer look and run an experiment. Let's make our own soil erosion models!

Supplies:

- 4 rectangular plastic (take out) containers or aluminum baking pans (two should be larger in size)
- Soil
- Fallen leaves, grass clippings or mulch
- 2 measuring cups (clear if possible)
- Water

Procedure:

- Fill the bottom of the smaller pans with soil
- Cover the soil in one of the pans with leaves, grass or mulch
- Set the smaller pans inside the larger pans so the bottom edges of the small pans rest on the top of the larger pans and create a slope
- Pour 1 cup of water across the high side of the 2 smaller pans
- Pour the water that ran off the smaller pans and into the larger ones into the measuring cups and compare the results
- Watch the example **Soil Erosion Experiment Video**

Follow Up Questions:

- Did the mulch/leaves protect or hold the soil in place, reducing erosion and resulting in a lighter color of water?
- Is there something else you could use to keep the rain water clean, protecting against erosion?
- Why is it important to prevent erosion into streams?

ADDITIONAL RESOURCES

Interactive kid's site by Project WET

Seeing Watersheds

Online Lesson About Watersheds and Water Flow from **Project WET**

USGS Water Science School

Week 4 focuses on water and features interactive learning tools

Ohio Healthy Water Healthy People Activity Resources

***River Story* Read Aloud**

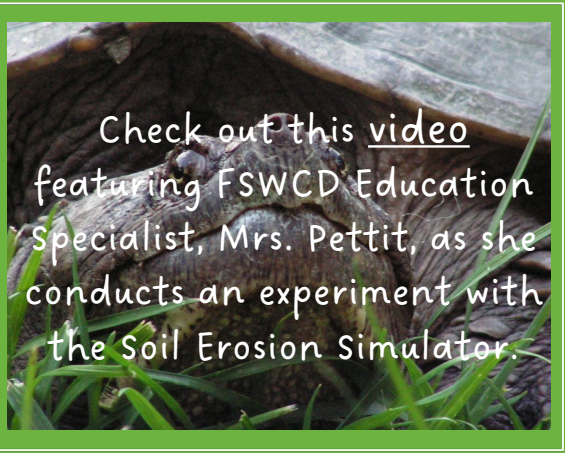
GIVE IT A TRY

Scientists look at specific factors to predict the health of a stream habitat. This survey is called the Qualitative Habitat Evaluation Index (QHEI).

Find a stream or creek that you can explore safely and make observations about the area. Use the guide above and the Stream Walk Data Sheet as you explore.

QUESTIONS TO EXTEND LEARNING

1. What are some possible ways to slow down or stop soil movement (erosion) from happening during rain events?
2. What is the advantage of adding an "insert" to a stream channel?
3. What do you think is the biggest source of pollution in our rivers/streams in Ohio?



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STREAM STEWARDSHIP

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Which side of the stream demonstrates good stream stewardship?