SWIFTlet+

Soil and Water Information for Teachers: lessons on environmental themes

Middle School
High School

Issue 2

WILD WATERWAYS

CAREER CONNECTIONS

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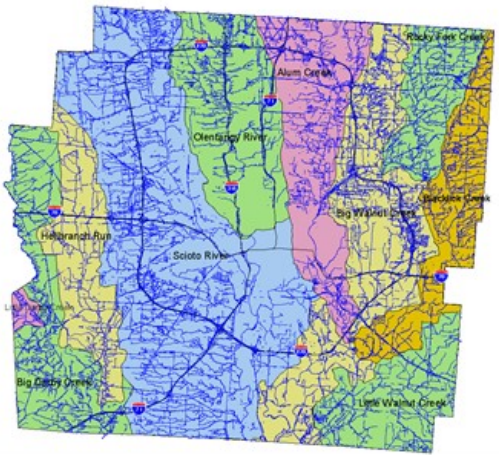
Positions that focus on natural resources and the environment.

Franklin Soil and Water Conservation District
Creating Conservation Solutions for Over 70 Years

Watershed is the term used to describe the geographic area of land that drains water to a shared destination. The watershed includes the geographic area surrounding the stream system that captures precipitation, filters/stores water and determines water release into stream systems. The watershed is named for the stream system that collects the water. Smaller watersheds drain into larger ones and eventually carry to the oceans.



Franklin County has 10 watersheds as pictured in this map.

Everyone lives in, and can influence the quality of the water within the watershed through their treatment of the natural resources. Land use practices such as clearing trees, adding roads and parking lots and constructing buildings, may have environmental consequences that greatly affect water quality conditions. Everyday backyard practices like the chemicals we apply to our lawns, washing our cars in our driveways and even leaving pet waste on the ground, can also impact the quality of our water.

When precipitation falls, it moves across and into our landscape in different ways. Precipitation that falls on **impervious surfaces** picks up oil, other automobile fluids, trash, fertilizer and other pollutants. This **stormwater** is discharged untreated into our streams as **runoff** or flows into storm drains where it is directed through a series of underground pipes to the nearest stream, river, lake or pond. These **nonpoint sources** of pollution can have dramatic impacts on the health of our river habitats. Keeping stormwater from polluting our streams is everyone's responsibility. Picking up trash, washing cars at commercial car washes, planting **native plants**, **installing rain gardens** and **picking up pet waste** are all ways we can take action to protect our local water bodies.

Storm Drains

Storm drains are common along roadways, keeping them safe by allowing precipitation to drain quickly. Storm drains are not part of the sanitary sewer system– anything that goes into a storm drain eventually ends up in a body of water like a river or stream. Remember: *Only rain should go down the drain!*

WILD WATERWAYS

EXPLORING WATERSHEDS

Take the Design Challenge: Create a Watershed Model

Use a paper watershed model to simulate the flow of rainwater across the land and explore how pollution travels through a watershed.

Supplies:

* 2 pieces of white paper
* Pan or container to put paper in, to reduce mess
* Squirt bottle & water
* Water-based markers (blue, brown, black, red)
* Permanent Markers (green)

Procedure:

* Crumple one piece of paper.
* Spread paper out partially (leaving some ridges and valleys) and place in pan.
* Draw in ridgelines with blue marker.
* Spray rain over the watershed and observe where the run-off flows.

*For additional instructions and information, refer to: **Crumpled Paper Watershed**.*

Extension 1:

* Using new piece of paper, repeat the first 3 steps.
* Use the other markers to mark ways people use the land: Brown (soil erosion/ground disturbances), black (human development like roads/buildings), green (forests/vegetation), red (lawn chemicals/pollution).
* Spray water over the watershed and observe what happens to the water as it runs across the land.

Extension 2:

* Add **Miracle Grow** or a similar fertilizer to different locations within your watershed.
* Use the squirt bottle to make it rain on your watershed.
* Use a simple **water quality test kit** to test for nitrates.

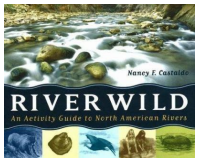
Follow Up Questions:

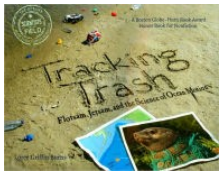
* Where do you observe the highest concentration of nitrates? Why?
* How do our everyday activities affect our local streams?

ADDITIONAL RESOURCES

Ohio University: Ohio Watershed Data Riparian Zone Runoff Activity

River Wild: An Activity Guide to North American Rivers





Tracking Trash: Flotsam, Jetsam and the Science of Ocean Motion

What's Wrong with this picture? Activity

USGS Current Water Data for the Nation—Stream Conditions

Tech Tools

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Franklin Soil and Water Conservation District Interactive maps

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

US EPA Mapping Site

project WET WATER EDUCATION TODAY

Project WET: Discover Water Explore Watersheds Video and Activity

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