



4-H 365.18



Ways of Knowing Water

by Joe Bonnell, Program Director, Ohio State University Extension; Anne Baird, Extension Educator, Ohio State University Extension; Rick Livingston, Associate Director, Institute for Collaborative Research and Public Humanities, The Ohio State University; and Deb Hersha, Aquatic Ecologist, Postdoctoral Researcher, School of Environment and Natural Resources, The Ohio State University

In the United States, we use more than 400 billion gallons of water every day. It might not seem like it to us, but the world’s supply of fresh, clean water is limited. Access to water is shaping up to be one of the most important issues of the twenty-first century.

Although three-quarters of the Earth’s surface is covered in water, most of it is salt water that is unusable. Just 3 percent is fresh water, and less than 1 percent is available for our use. Much of that water comes from rivers, streams, and lakes. Learning to take care of this limited resource makes good sense.

Every river, stream, and lake has its own **watershed**—the area of land that rain and melting snow flow over on their way into the river, stream, or lake. As water drains from a watershed, it carries with it things like soil, leaves, and chemicals that it picks up along the way. Since all the land in Ohio drains into

a river or lake, wherever you are, you are in a watershed.

Water is vital not only to humans, but to all life on the Earth. Ohio’s native plants and animals depend on healthy rivers for survival. Watersheds with a variety of environments, or “habitats,” have more types of animals and plants. In other words, watersheds with diverse habitats also have greater **biodiversity** (numbers and types of animals and plants).

Rivers and streams have always been popular places for human settlements because they provide ready supplies of water for drinking,

Plan Your Project

Use this idea starter AND publication 4-H 365 *Self-Determined Project Guide* as the starting place for your 4-H self-determined project. The *Self-Determined Project Guide* is available from your county OSU Extension office or on the web at www.ohio4h.org/selfdetermined. You may choose to do a little or a lot depending on your level of interest. Be sure to register your project with your county OSU Extension office.

agriculture, and industry. Rivers, lakes, and streams are natural landmarks and help establish the unique identity of a place. Knowing the names of local bodies of water, and the stories behind those names, gives many people a feeling of being at home.

In the Iroquois-Seneca language, the word *ohi:yo* means “good or beautiful river.” Thanks to the maps of early explorers, the land north of the Ohio River came to have that name. As people settled near Ohio’s rivers and streams, demands on the water supply—for drinking, transportation, irrigation, and recreation—increased. These changes have affected the health and quality of our rivers. Learning to use the land and our natural resources without unnecessarily damaging our rivers and streams is an important part of good **stewardship**—the care and conservation of Ohio’s natural heritage.

Areas of Interest and Things to Do

Every self-determined project can be broken down into areas of interest. These are specific things members want to address during their project adventure. Using 4-H 365 *Self-Determined Project Guide*, identify at least three (3) areas of interest with at least three (3) activities per area to explore. Take your ideas from the list below or make up your own.

How water flows

- Using a map of Ohio, find a river or stream near your home. Follow that river on the map to determine where it flows. All rivers in Ohio eventually flow into Lake Erie or the Ohio River.
- Visit a stream near your home. Draw a map of the stream. Use an arrow to indicate the direction the water is flowing in the stream. Given that water always flows downhill, indicate which end of the stream is higher than the other.
- Go to the U.S. Environmental Protection Agency’s “Surf Your Watershed” web site

at <http://cfpub.epa.gov/surf/locate/index.cfm>. To find your watershed, select “Zip Code” under Step 1. Then, in Step 2, enter your zip code. What is the name of your watershed? Explore some of the links to learn more about your watershed and write a short summary.

- Find out where the water flows when it rains on your house. Most houses have downspouts to collect the water and move it away from the house. Where does the water go after it runs down the downspout? Investigate rain barrels and rain gardens as a way to collect water from the downspout. Make a list of things you could do with water you collect from the downspout on your house.

Water in your community

- Find out where your water comes from. Ask your parents if your water comes from a well or if it is provided by a public water treatment plant. If your parents receive a bill for your water, you may find out more information about your drinking water from materials that come in the mail with the water bill. If you get water from a well, ask your parents where the well is located and if they know how deep it is.

World Water Crisis <http://water.org/facts>

The world water crisis is one of the largest public health issues of our time.

Nearly 1.1 billion people—about 20 percent of the world’s population—lack access to safe drinking water. The lack of clean, safe drinking water is estimated to kill almost 4,500 children per day.

Water is essential to the treatment of diseases, something especially critical for children.

This problem isn’t confined to a particular region of the world. A third of the Earth’s population lives in “water stressed” countries and that number is expected to rise dramatically over the next two decades.

The crisis is worst in developing countries, especially in Sub-Saharan Africa and South Asia.

www.worldwaterday.net/index.cfm?objectid=E39A970B

- Where does the water go that you flush down the toilet? Ask your parents if you have a home septic treatment system or if your wastewater goes into a public sewer system. If you have a septic system, find out where it is located and how it works. If your wastewater goes into a public sewer, find out where it goes to be treated.
 - Visit a drinking water treatment plant or a wastewater treatment plant. Many drinking and wastewater treatment plants offer public tours.
 - How many ways do you and your family use water in a day? Make a list of all the ways you and your family use water. What would happen if you suddenly had no water for all these activities?
- Investigate ways to prevent water pollution right in your own home. For example, how can you dispose of household chemicals properly, instead of pouring them down the sink or toilet?
 - Talk to a naturalist or someone at your county Soil and Water Conservation District about water quality issues in your area. Find out what the sources of water quality problems in your community and what people can do to help solve them.
- Water and culture**
- Look at a map of your community and note the names of places associated with water.
- Ask a teacher or librarian to help you find books and poetry about rivers, lakes, and streams. Read some, then write your own poem.
 - Rivers have played an important role in transportation and commerce in Ohio. Look for information on the Internet about Ohio's historic canals. There are many historic sites celebrating Ohio's canal system. Write a brief summary of Ohio's canal system.
 - Using a map of your county, identify five rivers or streams in your county. Investigate how these rivers and streams got their names.

Caring for water resources

- Visit a local stream with an adult family member. Pick up any litter you find in or along the stream. Think about how the trash got into the stream and where it came from.
- Find out if there is a river or watershed protection group in your area. Go to the Ohio Watershed Network web site map of watershed groups in Ohio: <http://ohiowatersheds.osu.edu/groups>. Click on the county where you live and find a list of groups in your area. Visit their web sites (if they have them) and talk about what you find.

Related Resources

Take a virtual watershed tour:
<http://ohiowatersheds.osu.edu/vtour>

What is a watershed:
www.epa.gov/owow/watershed/whatis.html

Community-based Watershed Management fact sheet:
<http://ohioline.osu.edu/ws-fact/0001.html>

Coping with Polluted Runoff fact sheet:
<http://ohioline.osu.edu/aex-fact/0443.html>

Ohio's Hydrologic Cycle:
<http://ohioline.osu.edu/aex-fact/0461.html>

A Guide to Ohio Streams:
www.dnr.state.oh.us/default/tabid/11879/Default.aspx

www.ohio4h.org/selfdetermined



Ohio State University Extension embraces human diversity and is committed to ensuring that all research and related educational programs are available to clientele on a nondiscriminatory basis without regard to race, color, religion, sex, age, national origin, sexual orientation, gender identity or expression, disability, or veteran status. This statement is in accordance with United States Civil Rights Laws and the USDA.

Keith L. Smith, Ph.D., Associate Vice President for Agricultural Administration and Director, Ohio State University Extension

TDD No. 800-589-8292 (Ohio only) or 614-292-1868

Copyright © 2010, The Ohio State University