

Stream Steward



Activities



Cuyahoga
Soil and Water
Conservation
District

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NEO PIPE

YOUR REGIONAL STORM WATER

Public Involvement Public Education

RESOURCE

Welcome to the NEO PIPE Patch Project!

We would like you to discover what stormwater pollution is all about and why everyone is talking about it. You can read about Fred the Fish, find your Watershed Address, master a new set of vocabulary, or hop into a river and get your feet wet looking for insects. In the process, you can earn a Stream Stewards patch, and also probably meet some merit badge requirements. In order to earn your Stream Stewards membership and patch, you need to do one activity out of each category, D - Discovery, R - Research, O - Outreach, and P - Publicity. Once you have done four activities, fill out the form at the end of this booklet and send it to the address on the front cover to receive your patch. Most importantly, remember to have fun!



Discovery - (*n.*) Finding out or ascertaining something previously unknown or unrecognized; exploration; examination.

In this first section, you will be learning about stormwater. What is it? Where does it come from? How are you involved? Take on the role of a newspaper reporter and gain an understanding of the issues. Your leader, adult advisor or an expert in the field can help you discover what stormwater is all about.

Activities:

- D1. **Fred the Fish** – Follow Fred the Fish on a journey downstream. Your leader will tell you his tale. Fred’s journey takes him past farm fields, housing developments, roads, parks, and factories. Each one has an effect on Fred and his surroundings.
- D2. **Away With Waste** – Where does litter go? How about the stuff that you put in your yard, such as fertilizers, pesticides and animal waste? Most people don’t really give it much thought because the stuff goes away. This activity will help you identify where ‘Away’ really is.
- D3. **Runoff Racing** – Do your own exploration of runoff and infiltration. Where does rainwater go? What affects runoff rates? Learn how to demonstrate these ideas with some coffee cans, and a water jug.
- D4. **Wetlands Exploration** – Wetlands provide many benefits, including collecting, slowing down and filtering storm water. They also help to absorb flood water. Visit a local wetland. Arrange to meet with a naturalist, or someone else who can tell you about the ecology of the wetland.
- D5. **Who Knows, Who Cares** – There are lots of people out there who know and care about clean water. Many local agencies deal with water issues. They also educate people on those issues. Contact a local agency and invite them to a troop meeting to discuss water pollution.



Research - (v. t.) To search or examine with continued care

Now that you know the basics, let's expand your knowledge. In this section, you can experiment within your watershed. Scientists in many fields do research every day. They carefully conduct experiments and record the results. The results then give the scientists a better understanding of the world around us.

Activities:

- R1. **The End Of The Pipe** – Water comes into your house through pipes. It also leaves through pipes. Find the end of those pipes. Where does your drinking water come from? Where does wastewater go once it leaves your house? The stormwater that hits the roof of your house, driveway, sidewalk or lawn all has to go somewhere. How does this system of pipes flow? What happens between your rain gutters and the river? How do your daily actions affect the cleanliness of this water?
- R2. **Your Watershed Address** – Everyone has an address. It starts with your name, then identifies your house by number, then the road you live on, then the town, and finally the state you live in. Each part of your address is a larger area. Watersheds work the same way. Each small stream is part of a larger river system. Find your watershed address. What is the closest stream? Is it named? What does it flow into? Then what? Keep identifying larger bodies of water until you get to the ocean. This is your watershed address. For example:
Jordan Smith (lives in the)
Ward Creek (watershed which empties into the)
Chagrin River (which drains to)
Lake Erie (that is part of the)
Great Lakes (that empty into the)
St Lawrence River (which ends at the)
St Lawrence Estuary (a part of the)
Atlantic Ocean
- Make a map of your watershed at a neighborhood level. Is your school in the same watershed as your house? How many of your friends also live in your watershed? Be sure to draw the watershed boundaries, rivers and streams, major roads, and places that you visit often.
- R3. **Pollution Glossary** – There are many terms that relate to stormwater. Sometimes the most difficult part of learning about something is understanding the language. Look at articles, web pages, news stories, and this booklet about stormwater and non-point source pollution. Gather a list of words you have heard and read during this project, and look up definitions for them.
- R4. **Cleaning Green** – Many of the substances in polluted water come from household chemicals. These can be cleaners, pesticides, lawn products or home improvement products. Identify some hazardous wastes in your house. What are they used for? Where do they end up when you are done with them? Find out how to properly handle and dispose of household chemicals. Also research environmentally friendly 'green' alternatives.
- R5. **Water Careers** – Who works with water? What do they do? This is your chance to explore some water careers. Visit someone at work, invite them to come to your meeting, or conduct interviews or a survey with people in several different water-related fields and present your findings to your group.
- R6. **Backyard Conservation** – Some of the most common pollutants in water come from our lawns and gardens. Learn how common lawn care habits can be adjusted to be more water-friendly. What are some alternatives? The National Wildlife Foundation is a good source of information for environmentally sensible yards.



Outreach - (v. t.) To reach beyond

Now you have an understanding of the science behind stormwater issues. In this section we are asking you to go beyond holding knowledge. Roll up your sleeves! Get involved! These projects all involve doing something for your watershed.

Activities:

- 1. **Erosion Elimination** – Sediment is one of the leading causes of water pollution. It is just solid material that washes off the land and into the water. The best way to prevent this erosion is with plants. Find an area in your community that has bare dirt that washes away. Good places to look are school yards, parks, construction sites, and roadsides. If you mapped your watershed, mark areas of erosion on your map. Pick one of these areas and plant it!
- 2. **Litter pick-up** – Litter along streams is bad for the animals and plants that live there. Find a neglected section of stream, and clean up what others have carelessly left behind. Do you think that it mostly was carried there by wind or water, or dropped by people who visited the stream? Is it mostly food containers or household waste or maybe something else? How much of the litter is recyclable and what should you do with the rest?
- 3. **Storm Drain Marking** – Storm drains gather lots of pollution off of the street and nearby yards. This water is then taken through pipes to the nearest stream. Some people think that the water from storm drains is treated, like the water that goes down the bathtub drain, so they dump chemicals down the storm drain. All across the country, groups have been working to mark storm drains so that people realize that the water goes directly to a river, lake, or bay. Find a neighborhood that has storm drains, and see what watershed they drain into. Work with your local SWCD, and the community to label these storm drains. Be sure to provide additional information to the people who live in the neighborhood.
- 4. **Stream Monitoring** – Many groups in northeast Ohio help to monitor stream health. They wade out into a stream or river and collect physical data (like temperature), chemical data (like pH and nitrogen levels), and biological data (bugs and fish). This information is useful to tell how clean the water is. Schedule a monitoring session with your local SWCD or park.
- 5. **Adopt a Stream** – Most adults don't really pay attention to the world around them. Show them what they drive by every day. Choose a stream in your watershed and find out how to put a sign on it. Who do you need to get permission from? Where can you get the sign? How much would it cost to install it? Several counties already have a sign program in place that you could get involved in. This is a great opportunity to show people that your group cares about this stream.
- 6. **Green Lawns** - Do a Lawn Care Audit around your house. Identify problems and solutions to some of your family's gardening habits. Are you mowing the grass properly to keep clippings in the grass and out of the waterways and storm drains? Do you only apply fertilizers and pesticides when necessary? Do you compost yard and garden waste? Identify and try five ways to make your garden 'greener' or more ecologically sensible. If you routinely care for other people's yards, encourage them to do the same.



Publicity - (*n.*) The quality or state of being public, or open to the knowledge of a community; notoriety; publicness

You are an expert in stormwater issues! You understand the problem, and have done first-hand research in your watershed. You have gotten out and gotten involved. Now it is time to share that wealth of knowledge. Consider the best way to represent your learning and share that learning with others. Who should know what you have learned? What is the best way to reach those people? How can you use your unique talents and strengths to reach people?

Activities:

- P1. **Poster Campaign** – You might think that people pollute because they don't care, but what if it is because they don't know any better? This is a chance for you to get a message out. Create posters that identify the problem and provide a solution. Tell people how their behavior affects their watershed. Find an appropriate place to display these posters, in local stores, your school, public buildings, or in a park.
- P2. **Door Hangers** – If you have been working in one small neighborhood, this is a great way to reach the local residents. Decide how many houses you should reach, and create enough door hangers to tell everyone about your watershed. You might also ask your local SWCD about templates they already use.
- P3. **River of Words** – Sometimes science won't do. Create a poem and a piece of artwork that express how you feel about clean water and/or pollution. Host an art gallery and coffeehouse with your group, and invite guests to see and hear your work. Be sure to invite local resource people and government officials so they know you care. Submit poetry to local conservation organizations, school newspapers, and literary magazines to see if you can get published. There is an international project, called River of Words that also collects artwork and poetry. You can find more details at www.riverofwords.org.
- P4. **Design a Display** – Showcase what you have done. Many public buildings have display areas that you can use for a period of time. Develop an eye-catching and informational display about clean water, and highlight the things you think are most important for people to know.
- P5. **Teach** – Start other people along your path. Develop a set of activities that teach about clean water. Share this with another group, and get them to start thinking about watersheds. You might even help them to become Stream Stewards
- P6. **Live Action** – Create a skit, performance, or reading that shows what you have learned. Arrange to perform in a talent show, at a community festival, or other public place. Be sure to make yourself available to answer questions afterwards.



I AM A Stream Steward



I completed Activity # ____ and have **Discovered** this about stormwater, runoff, and non-point source pollution:



I completed Activity # ____ and my **Research** tells me:



I completed Activity # ____ and I did **Outreach** at _____ by doing this:



I completed Activity # ____ and brought **Publicity** to water quality issues by:

I am another **DROP** in a pool of people who know about clean water and what I can do every day to keep it that way.

My name is:

My group is:

