



## Research Your Watershed - Service Learning Project

Source: BioSite Program created by San Jose Children's Discovery Museum

### General Information:

Grade Level: 7-10

Department: Social Studies/Science

### Background Information:

A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place. John Wesley Powell, scientist geographer, put it best when he said that a watershed is:

"that area of land, a bounded hydrologic system, within which all living things are inextricably linked by their common water course and where, as humans settled, simple logic demanded that they become part of a community."

Watersheds come in all shapes and sizes. Watersheds come in many shapes and sizes. They catch rain and snowfall and channel them into brooks, creeks, springs, streams, rivers, and eventually lakes and oceans. They cross county, state, and national boundaries. In the continental US, there are 2,110 watersheds; including Hawaii Alaska, and Puerto Rico, there are 2,267 watersheds.

Watersheds provide an important way for us to understand the relationships between water, earth, and people. Watersheds provide important environmental benefits like water filtration and storage and also provide valuable habitat for plants and animals. Humans are also part of watersheds because we rely on watersheds for water and the unique environment they provide.

For more information: <http://www.epa.gov/adopt/resources/>

### Project Description:

Students will take on research projects to learn more about their watershed and surrounding community. Students will then present to peers and local community groups to share their knowledge and participate in a river/stream clean-up to improve nearby water quality. A school or community may then decide to become involved in an adopt a watershed program (for more information: <http://www.epa.gov/adopt/>).

It's not likely that you can understand everything about your river by fieldwork alone. Students will explore many resources that are available for learning about a local watershed. Have students write questions they're interested in and that they want to know about their watershed. For example, "What is the average annual rainfall in your area?" How do the maximum and minimum amounts of annual rainfall in your area compare with other places in the year? What animals live near the river? What is the source of drinking water in your town? What are the most common problems for water quality in your local rivers, lakes, and water bodies?

You might decide to research specific events in the history of your community that have affected your creek. In our local watershed, some of the events and history to discuss include:

- Industrial history
- Native American significance
- Environmental restoration projects

*Some suggested topics that you may want to consider:*

Watershed History--How life in our watershed has changed over time.

Current Issues--What is impacting our communities?

Local Organizations--What the community is doing to address the issues.

Projects by Students--Action focused on public awareness and environmental health.

You might also invite local watershed groups to talk with your students about these issues.

**Materials:**

- Information on local water resources (maps, USGS)
- Information on local water issues (articles, pamphlets, publications)
- Information on local climate
- Topographic map(s) of local creek and regional watershed
- Articles about creek, pond, or ocean restoration/clean-up

**Community Need(s):**

Every community uses and impacts its water resources in different ways. Understanding Genesee County's historic and current water use and impacts can help determine the best ways to improve the quality of local water resources.

**Potential Community Partner(s):**

Genesee County Drain Commissioner's Office  
Flint River Watershed Coalition  
Genesee County Historical Society

**Content/Skill(s):**

Science  
History  
Social Studies

**Project Components:**

- Students research historic and current use of water resources
- Students talk with area experts to better understand historic and current impacts of our actions on our water resources
- Students create presentations about their findings
- Students organize clean-up day on campus or partner with a local organization to do a clean-up day at a local river/stream

**Reflection Prompts:**

- Students write an essay assessing the effectiveness of their campaign.
- Students create a photo essay showing storm water problems before and after the project.
- Students write a reflective essay on the following question: What factors of led to the problems we currently have with local water quality?

**Outcomes:**

- Students will be able to explain how land use impacts local water resources
- Students will display an understanding of the historic and current water uses of their community
- Students will learn of current initiatives to address water quality in their community
- Students will exhibit their ability to conduct research

**Accommodations/Support for Diverse Learners:**

- Appropriate tasks should be assigned to all students.
- Students should be encouraged to work collaboratively and respect the talents of each of the members of their group.
- Locations should be accessible. When not available, alternative sites should be sought.
- Each group member should have equal opportunities to make significant contributions to the project.