

Why Study a Watershed

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The more you learn about your watershed, the more likely you will understand the importance of taking care of it. Because the land interacts with surface water as water drains through a watershed, recognizing the affects that poor land use practices have on our waterways is important. The bigger your watershed, the more opportunity for our water comes in contact with the land and possible pollutants on it. Because waterways and watershed connect to create bigger waterways and watersheds downstream, impacts from the land and humans can affect downstream areas. We are all connected to each by our waterways. In Western Pennsylvania and New York, how we take care of our waterways can affect the water quality for people in New Orleans, Louisiana, at the mouth of the Mississippi River.

We have the same amount of water on earth as we did millions of years ago, and through the water cycle, we continuously reuse this same water. If we contaminate that water, it may come back to haunt us. We have placed much stress on our water supplies as the demand for clean water keeps rising. Every day, we become more aware of how pollution impacts aquatic life, surrounding habitats, and water quality - which can limit our uses of that water. Water monitoring helps us assess the present level of water quality, understand its threats, and help us make plans for maintaining healthy water quality for the future. Monitoring helps increase our understanding and appreciation for our waterways and all the benefits that they provide.

Benefits of Our Waterways and Wetlands

Our waterways and wetlands provide numerous services at no cost. Many of these natural services remain unnoticed until their alteration results in a flood for example. Although it is difficult to value aesthetic components of waterways and wetlands, we can estimate the ecological costs those rivers and wetlands provide. For example, we can estimate the cost of cleaning the water that wetlands do naturally by computing the cost of installing a water treatment plant. In a 1990 study, without the Congaree Bottomland Hardwood Swamp in South Carolina, the area would need a \$5 million wastewater treatment plant. The reason for assessing services of waterways and wetlands is to make their purchase expensive and unlikely. Would developers be able to afford the purchase a section of land containing a wetland or river in it if they had to replace the natural services performed for free with expensive machinery to perform the same function? The current problem with economic assessment is that most of the services performed naturally are left out of the cost.

Waterway Benefits:

1. Transportation of water, sediments, and nutrients from land to sea
2. Rivers are an efficient transportation mode of moving grain, corn, timber, steel, coal, and some manufactured goods
3. Mode of generating electricity through hydropower
4. Creates employment dealing with navigation, flood control, municipal & industrial water supply, electrical supply, fishing and food supply, water recreation, scientific research, and environmental education
5. Aesthetic and recreational value
6. Important source of drinking water for urban and rural areas
7. Important for fishing economy - 45% of 1992 fishing supply sales were generated from river use

8. Habitat to array of unique animals and plants-including many endangered species
9. Serves as corridors for migratory birds and fish
10. Builds deltas and beaches when river deposits sediments onto its banks, establishing deltas & beaches
11. Regulates salinity & fertility of estuaries and coastal zones

Wetland Benefits:

1. Natural water quality improvements because wetlands retain excess nutrients, some pollutants, and reduce sediment that would clog waterways and affect fish & amphibian egg development
2. Flood protection because wetlands act as natural sponges that traps and slowly releases surface water, rain, snowmelt, and flood waters
3. Shoreline erosion control as wetland plants hold the soil in place with their roots, absorb energy of waves, and break up flow of stream or river current
4. Provide natural products that we eat or use: trout and other fish, cranberries, blueberries, cattails (these are edible), wild rice, timber, peat (for fuel or enriched garden soil)
5. Excellent fish and wildlife habitat - more than 1/3 of United States threatened & endangered species live only in wetlands
6. Aesthetic and recreational value

In 1997, Pennsylvania earned an estimated 40 million dollars from canoeing supplies/trips alone.

An estimated 50 million people spend approximately \$10 billion each year photographing wetland-dependent birds

