Watershed topics to investigate

How do human activities impact watersheds?

Based on your investigation of data and the effects of nutrients on water systems, research one of the following topics to determine ways to solve some of the negative impacts of cultural eutrophication.

Remember a watershed is: “an area of land over which rain and other sources of water drain into a body of water.”

Regardless of which topic you choose, answer these general questions:

- How is the topic harmful / helpful to a stream ecosystem?
- What can be done to improve stream quality with regards to your topic? (Solutions!)

OR

- How can your topic be further supported to encourage individuals to use your beneficial methods?

Topics

Channelization

1. What is channelization?
2. Where is it usually done? Why is it done? (Use local, national, and global examples)
3. What are the benefits and drawbacks of river/stream channelization?
4. How does this method impact local communities? The economy?

Impervious Surfaces

1. What are impervious surfaces and how do they impact watersheds?
2. Give multiple examples of impervious surfaces.
3. How can we improve areas that are high in this type of cover?

Stormwater Management

1. What is stormwater runoff?
2. What are some pollution concerns? (include pictures!)
3. What are some ways to decrease the amount and improve the quality of stormwater runoff
4. What is a stormwater drain?

Vegetated/Vegetative Buffer Zones (wetlands and riparian zones)

1. What are vegetated buffer zones?
2. Describe sediment and nutrient pollution AND include the most likely sources.
3. How do buffer zones help mitigate this problem both environmentally and economically?
4. Find some stats in Ohio about wetland and riparian zone restoration.

Tree Canopy Cover

1. What are the environmental and economic benefits of tree cover for cities and streams?
2. Include statistics related to the percent canopy cover for Columbus and other cities.

Watersheds, wetlands and water quality

Rain Gardens and Bioswales

1. What are rain gardens and bioswales? How do they help to prevent local flooding and pollution? Also list and describe other benefits to using rain gardens.
2. Rain gardens are a form of bioretention - what is bioretention, how does it work, and what are some other examples?

Agriculture Best Management Practices (BMPs)

1. List and describe best management practices?
2. Choose two of these BMPs to investigate and describe how each of these practices may help to improve water quality if employed by a grower?

Reflection

After listening to all the presentations, discuss these questions.

1. Is it cheaper to preserve the health of water or to treat unhealthy water through a water filtration plant?
2. What do you think WE could do to improve the conditions of our local watershed(s)?
3. How does YOUR topic affect the various nutrient cycles (carbon, oxygen, nitrogen, phosphorus) and also pH, dissolved oxygen, temperature, and level of pollutants?

Watersheds, wetlands and water quality