



## **Human Impacts on Local Water Resources**

### Unit Lesson Outline

**Day 1: Introduction to Phenomenon:** Modeling Health of three different water resources

**Days 2 and 3: Health of Local Water Resources: Determining Water Quality and Biodiversity**

- Option 1: Field trip to site to make observations, collect water samples for water quality testing, and macroinvertebrate survey
- Option 2: In class site photo observations (or google tour), sample water quality testing, determining key indicator macroinvertebrate species expected in each site

(Use more days as needed to analyze evidence)

**Day 4-6: Modeling Water Flow through Ecosystems** - Wikiwatershed: Land Cover Simulation and Model My watershed: water cycle basics/ water usage/water cycle disruption, Effects of different types of land cover, hydrologic soil type, agricultural activity, on runoff and water quality

**Day 7: Human Impact on Land and Water in CT** - CLEAR website and CT Changing Landscape Story Map - Students use online resources to investigate changing factors that contribute to the health of the 3 water resource sites since 1985

**Day 8 and 9: Ecological Services:** Why is it important to manage natural resources such as land and water?

Possible Literacy Articles: Accounting for Nature's Benefits: The Dollar Value of Ecosystem Services  
Neglected biodiversity and the current extinction crisis

**Day 10: Human Decision Making:** Legislation - Clean Water Act  
Cuyahoga River Video Clip,

Possible Literacy Articles: Why Rivers no Longer Burn,  
The Potential Big Impact of Trump's Clean Water Rollback

**Day 11: Revision of original model, discussion, and individual explanations**

**Day 12: Class review of group models and building of class consensus model**

**Day 13: Engineering Design Task:** Researching Low Impact Development (LID) to protect or improve these resources

**Day 14: Engineering Design Task:** Initiating Design of LID project for school's water resource

**Day 15+ Engineering Design Task:** Designing solution and building prototype[optional] and Presenting

