

Geog 360: Watershed Science and Policy

Spring 2016; 10:00-11:20 Tues-Thurs

Prof. Patricia McDowell

Course content and goals:

In 2015, a number of significant water crises occurred in the U.S., including

- Pollution of the Animas River in Colorado by acid mine waste
- Severe drought in California, with a major impact on agriculture and urban life
- Contamination of drinking water in Flint, Michigan
- Collapse of a stakeholder-negotiated settlement to water conflicts in the Klamath basin of Oregon and California that had been boiling since 2001
- Pollution of a river in West Virginia used for drinking water, by leakage of toxics from an industrial facility

GEOG 360 focuses on understanding these and similar issues. It covers current policy issues in water resources in the U.S., with a focus on the Pacific Northwest. It combines scientific understanding of river and watershed processes with study of policies and laws to address water problems. We will try to answer questions such as:

- How polluted are our rivers? How do human activities affect water pollution?
- Where does our drinking water come from? How safe is it?
- Who uses water and how much? Where are water shortages likely to occur under future climatic change?
- How are laws and policies on water quality, water supply, and aquatic ecosystem health designed? How effective are our current policies?

Course Format:

This course is flipped. Lecture material is presented mainly through on-line videos and readings, while class time is devoted mainly to discussion, short lectures, and work on assignments and projects.

Course Requirements:

Grades are based on two tests (40 points total); six assignments (30 points total), a term project report (20 points), and quizzes/participation (10 points). The term project will be done in a team of three students. It will be a written report based on your research into scientific reports, government agency web pages, and news sources, and data you collect and interpret. Projects may focus on 1) assessment of major issues in a U.S. watershed of your choice; or 2) analysis of a major water issue or policy such as drought management in the Pacific Northwest, proposed revision of the Toxics Substance Control Act, dam removal, social justice in water quality, etc.

Schedule: This schedule may change. Lecture topics may expand or shrink a bit.

Preliminary Schedule		
Week	Topics	Assignments
1	Water, watersheds and rivers	Researching watersheds and topics
2	Hydrology, water characteristics, river ecology	Key water issues
3	Water pollutants	
4	Toxics; Clean Water Act	Finding information on water quality
5	Clean Water Act (con.); Test 1	
6	Irrigation, water use, water law, drinking water management	Finding information on water use
7	Climate change and drought; Dams	Finding information on dams
8	Fish ecology; Endangered Species Act	Endangered aquatic species
9	Endangered Species Act (con.); Klamath Basin water crisis of 2001	Draft term project due
10	New trends in water management; Test 2	