



How do water and sediment move and shape the channel?



How do organisms live in channels?



What are the ecological connections between channel and floodplain?

# How do rivers work?



How do rivers build their floodplains?

**Geog 4/527: Fluvial Geomorphology**  
 Spring 2019; 12:00-1:20 Tues-Thurs  
 Prof. Patricia McDowell



How is river restoration done and does it work?

## Goals

- Understand and be able to apply interrelated concepts of river physical processes, ecological processes, and system response to disturbance.
- Analyze and interpret data on river hydrology, sediment transport, ecology, and habitat/geomorphology using spreadsheets and simple models.
- Understand and be able to apply basic field skills of measuring river channels.
- Effectively use relevant web pages and geospatial tools to collect information and solve problems about rivers.
- Demonstrate effective written, verbal and graphic communication skills.

**Requirements:** Two tests 30%; weekly labs/activities 60%; participation 10%.

**Course Format:** Lecture, discussion and lab work are interwoven in two weekly meetings. Required readings on line and from books. Two or three field trips for labs, usually on a Sat., Sun. or Fri. afternoon. (See instructor for alternative to field trips.)

**Schedule:** This schedule may change. Lecture topics may shift around.

Week	Topics	Labs/Activities
1	Watershed, river network, river corridor	Map analysis
2	Flow regime, water quality	Discharge data analysis
3	Hydraulics, work in rivers	Flow and resistance, channel formation
4	Sediment in rivers, water quality	Sediment analysis and transport
5	Organisms in rivers; Test 1	
6	Channel form, habitat, disturbance	Channel survey (field trip)
7	Floodplain ecology, large woody debris	River ecology &, habitats (field trip)
8	River adjustment, human impacts	Reach analysis
9	River restoration	Restoration (field trip)
10	River management, Test 2	