Color Me a Watershed: Part 3
How does land coverage type affect the hydrology of a watershed?

Runoff is the water that does not soak into the ground and water flows over the ground and into the stream. Your task is to calculate how much rain that fell on the land resulted in runoff. Begin by calculating the amount of water that fell on the stream. **Note: 100 cm = 1m** and **1,000,000m2 = 1km2**

a. _____m x _____m² =_____m³
   (amount of rain)   (area of stream)   (volume of water in stream)

b. Volume of water that fell on land: _____

Runoff coefficients are numbers that are based off the amount of water runoff versus the amount of rain received. They vary by soil type and texture, slope, vegetation, and intensity of rainfall. The larger the number, the more runoff - or less water absorbed into the ground.

Multiply the volume of water by the runoff coefficients (RC) provided in the table to calculate the amount of water that ran off for each land area.

Land Coverage with Runoff Coefficient (RC)	Map A 100 years ago Volume m³	Map A 100 years ago Runoff m³	Map B 50 years ago Volume m³	Map B 50 years ago Runoff m³	Map C Present Volume m³	Map C Present Runoff m³
Forest (RC: 0.1)						
Grasslands (RC: 0.25)						
Wetlands (RC: 0.5)						
Development (RC: 0.7)						
Agricultural (RC: 0.3)						
Total Runoff						
Stream						
Volume entering stream (stream volume + total runoff)						

= Please complete question on the other side =

1. Each land use sheds water at a different rate. Use the hypothetical estimates of runoff to calculate the amount of water in cubic meters (m^3) that will runoff into the stream. Record in the chart runoff column.

2. Which land coverage absorbs more water? Why?

3. What problems may arise if water runs quickly over surface materials, rather than moving slow or soaking into the ground?

4. How might water quality be affected by changes in the watershed?

5. Which map represents the watershed able to capture and store the most water? Why?

6. How might this knowledge be used to mitigate or adapt to a changing climate in California?