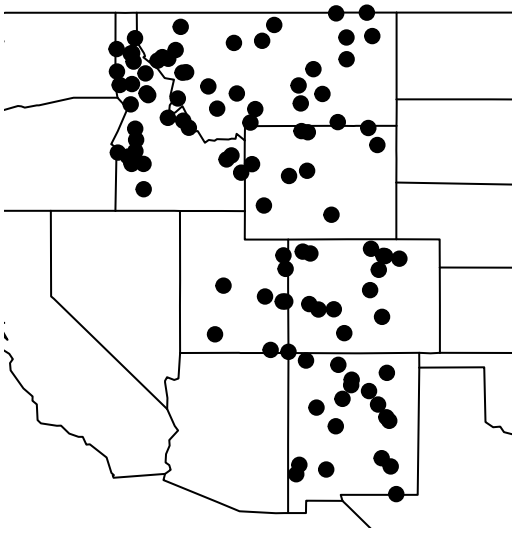
Rocky Mountain River Drainage

Rivers play an important role in any ecosystem. Rivers carry water and nutrients to areas all around the earth. They play a very important part in the water cycle, acting as drainage channels for surface water. Rivers provide excellent habitat and food for many of the earth's plants and animals. In the Rocky Mountain Region of the United States, river valleys and plains provide fertile soils and are the primary source of water for living. Farmers in the region irrigate their cropland using water carried by irrigation ditches and reservoirs from nearby rivers.

In this analysis you will be analyzing how various factors (human, river network and climate) impact the overall waterflow of various rivers in the U.S. Rocky Mountains. The variable `Metric` in the dataset Rivers.csv is a standardized (unitless) measure of overall water flow for various rivers in the Rocky Mountain region. Higher values indicate larger overall flow. Along with `Metric` are various other potential explanatory variables that may promote or preclude higher river flow. Descriptions of these variables are included in the supplmental file Metadata.csv. Also included in the dataset are the latitude/longitude coordinates of each river station where the data was collected. The locations of the stations are shown below.



In your analysis, you may ignore any potential spatial correlation (since we haven't covered this yet in the class). Make sure your report answers the following questions:

1. What are the biggest climate / river network / human factors that impact overall river flow.

2. How well do the factors you listed in #1 explain overall flow?
3. How predictive of overall flow are these identified factors?