**Groundwater Well Level Change in the United States**

In this activity, you will visit six of the states that you studied in the previous exercise – Pennsylvania and Virginia in the East; Nebraska and Kansas in the Midwest Plains; and California and Idaho in the West. You will look at groundwater monitoring wells that have been recording water table depth for several decades while making observations of the terrain using satellite imagery of the land surface.

**Step 1. Make Observations**

1. For each well, note the basic information such as where in the state it is located (north, central, etc.), total depth of well, name of the aquifer, etc.
2. Note the range in water level (in feet below land surface) over the time period and any apparent trends. *If there has been a change in water level over time, determine the total change in feet.*
3. Using the Google Earth map, note the landcover. Be sure to look for evidence of agriculture and, in particular, irrigation. Be as descriptive as possible.
4. Record any other observations.

**Pennsylvania**

**Virginia**

**Kansas**

**Nebraska**

**California**

**Idaho**

**Questions**

With your group, review your observations together. Then answer the following questions:

1. Compare and contrast the depth to water in the different states. What general conclusions can you draw about geography and water depth?
2. All of the wells have water level data for at least 40 years. Describe the water level variations (be quantitative) in the different states and try to explain what could be causing these changes.

**Reflection**

Which of the aquifers/wells indicate that the groundwater is not being used in a sustainable manner? Based on the information you have, what would be required for the sustainable use of groundwater?