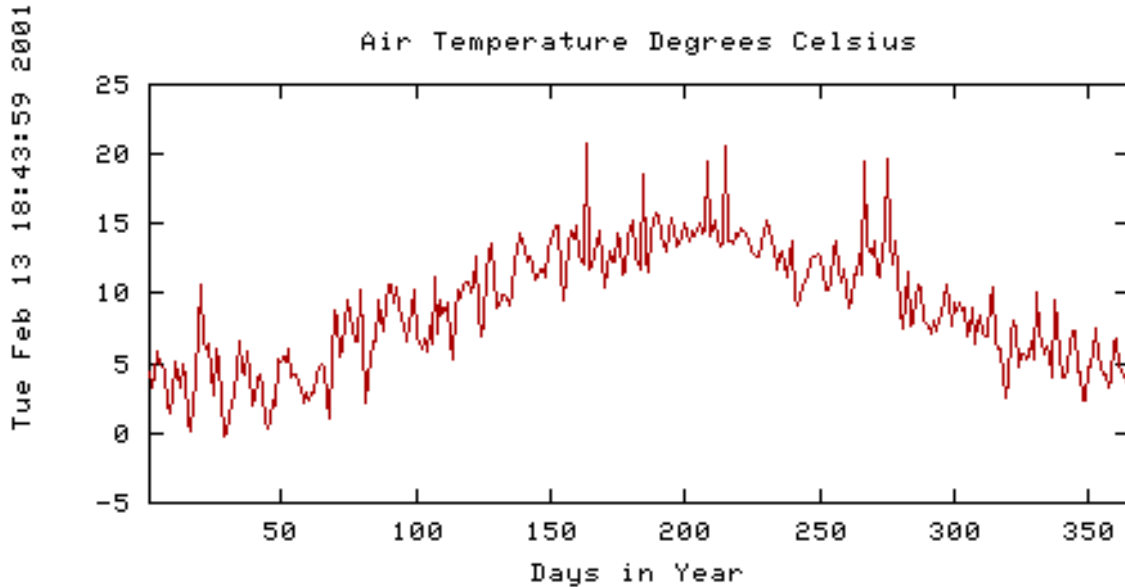


Land use affects water quality. A variety of strategies have been designed to reduce the negative impact of the land use. These strategies are known as best management practices. Write a paragraph describing each of the practices listed below.

- a) Stream Buffer
- b) Forbid Clear Cutting
- c) Strip Cropping
- d) Runoff Pond (Cache Basin)
- e) Separate Storm and Sanitary Sewers

1. The graph below shows air temperature readings taken daily at Baltimore-Washington International (BWI) Airport for one year.

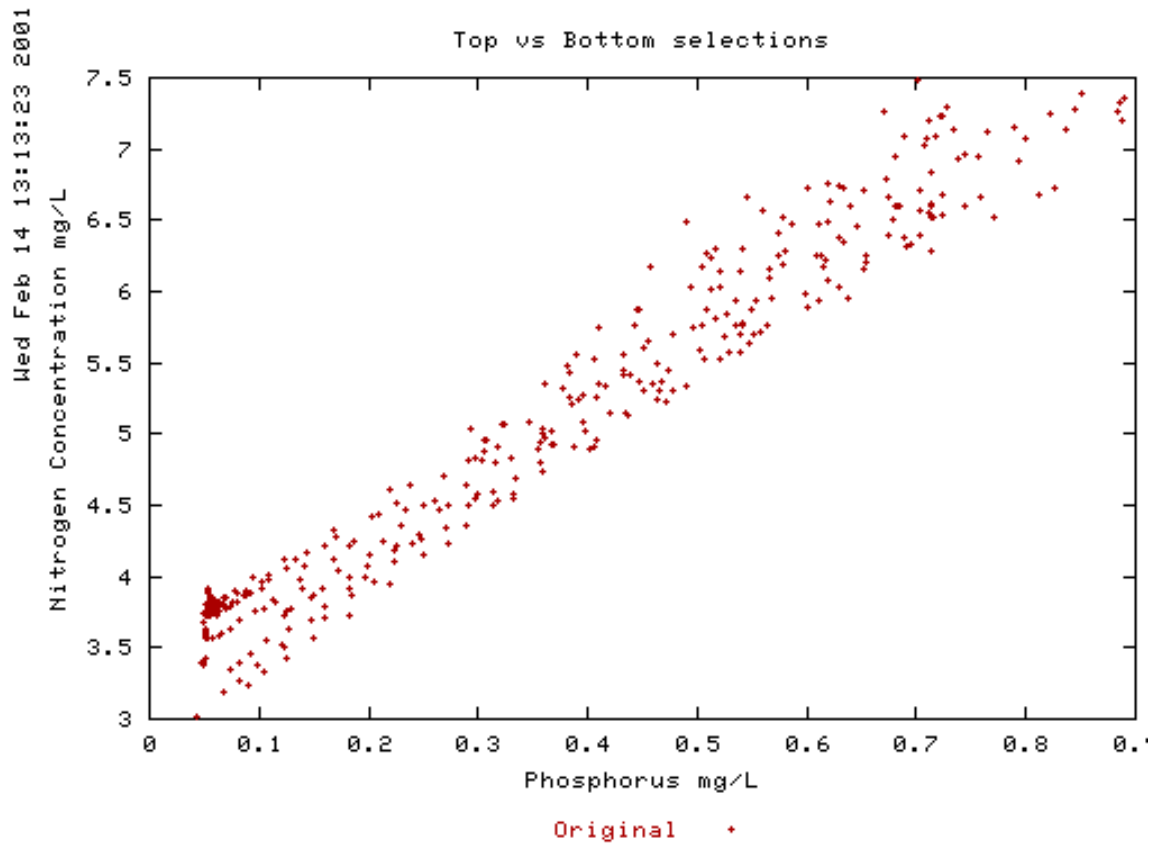


- A. Name the independent variable and its unit of measure. _____
- B. Name the dependent variable and its unit of measure. _____
- C. Label the seasons on the x-axis.
- D. Label the dependent variable on the y-axis.

2. The Severn River is near BWI. Think about how water temperature in the river might vary over the course of a year. On the axes below, sketch a graph of possible water temperature readings for one year. Label each axis with the name of the variable and its unit of measure. Label the scale on each axis.



3. The graph below is a scatter plot of nitrogen concentration versus phosphorus concentration at the mouth of a river.

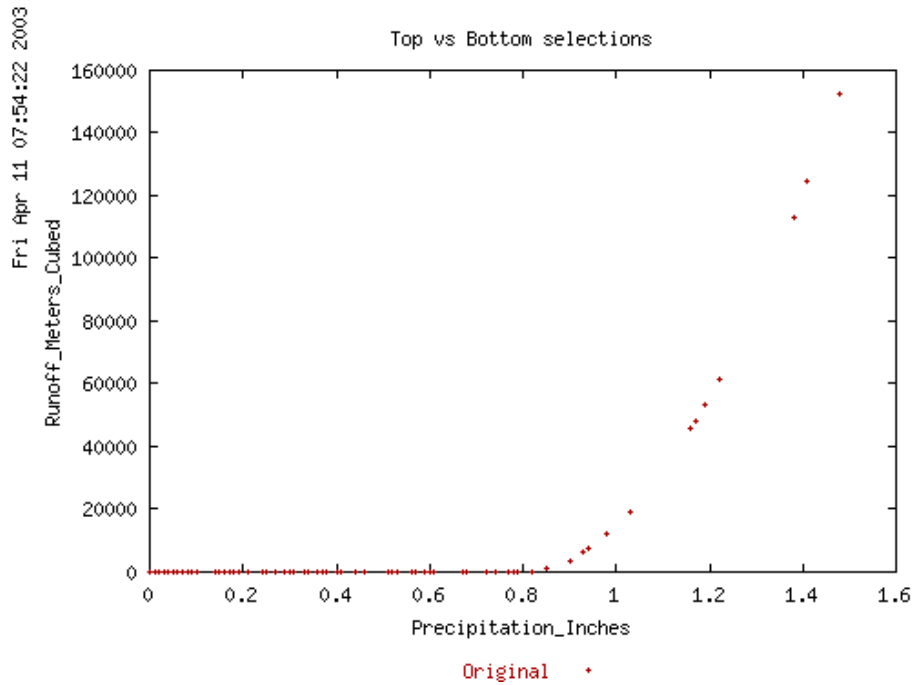


a) Describe what the graph tells you about the two variables.

As phosphorus increases, so does nitrogen. Does that mean that the increase in phosphorus causes the increase in nitrogen?

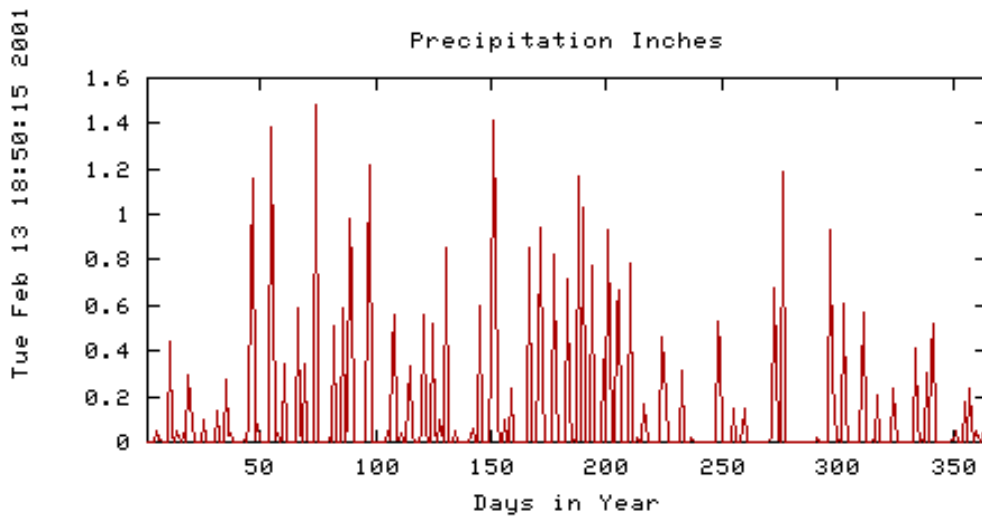
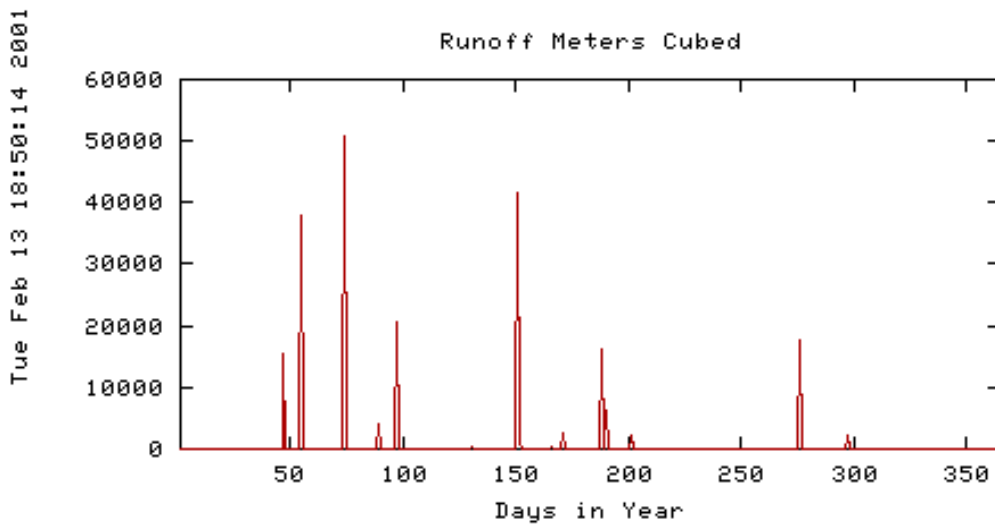
Hypothesize why nitrogen and phosphorus levels may be related to one another even though one does not directly affect the other.

4. The graph below is a scatter plot of runoff versus precipitation.



- Describe what the graph tells you about the two variables.
- As precipitation increases past 0.8 inch, runoff also increases. But, runoff stays at zero for precipitation levels below 0.8 inch. Is it valid to say that precipitation affects runoff?
- If there is no runoff when precipitation is less than 0.8 inch, where is the precipitation going?

5. The next two graphs show runoff and precipitation for one year.
- On the precipitation graph, find the point labeled A. Find the corresponding data point on the runoff graph and label it B.
 - On the precipitation graph, find the point labeled C. Find the corresponding data point on the runoff graph and label it D.
 - The scatter plot graph in problem 4 was constructed from data points on the precipitation and runoff graphs shown below. For example, the precipitation value A with the runoff value B corresponds to the point (A,B) on the scatter plot graph. Find the point on the scatter plot that corresponds to (A,B) and label the point (A,B).
 - Find the point on the scatter plot that corresponds to (C,D) and label the point (C,D).



6. Concept maps are often used to represent relationships among the many factors that influence a system. For example, a concept map representing the pathways that energy and nutrients travel in an estuarine environment is shown below. Label each connector with an appropriate verb or phrase describing the two factors being connected.

