Name _____   Date _____

Wappinger Creek Storm Data

Open the data set titled "Storm Chemistry", which shows data from a storm that took place in late May of 1990.

Part 1: Create a graph showing rainfall and flow over time. Next, choose one variable to graph against flow rate.

1. When did the largest amount of rain occur? When did the highest flow occur? Why didn't these happen at the same time?

2. How long did it take for Wappinger Creek to return to a pre-storm flow rate?

3. Create a graph to see how rainfall and suspended solids changed throughout the storm. Explain what happened to suspended solids during the storm event. Why do you think this happened?

4. How are the suspended solids data similar to and different from the flow rate?

5. In April of 2007, a flood event occurred in the Northeast, dumping between 50 and 175 mm of rain within a twenty-four hour period. How does this compare with the storm at Wappinger Creek?

6. Graph pH through time to see the values before, during, and after the storm. How long after the storm event did it take for the stream to return to "normal" (pre-event) pH?

7. Graph calcium during the storm event. In what ways are the pH and calcium curves similar? How do they differ?

8. Why do you think pH changed more than calcium?

9. Do you think this would change depending on the time of year that the storm occurred? Why or why not?

Part 2: Choose another variable to graph over time. Then, answer the questions below.

Variable: _____

1. Are there any noticeable trends in your graphed data? Explain.

2. Looking only at your variable, how long did it take the stream to 'recover' after the storm event?

3. This storm is an example of a "pulse" event—it happened once and then stopped. How might your variable be affected if these events occurred much more regularly? For instance, would you expect there to be an increase or decrease in pH during every storm event, if storms occurred, say, every three days?

4. Think about how your variable affects other parts of the ecosystem. For instance, if you were interested in looking at pH, think about how a change in pH affects aquatic life. Hypothesize how a change in your variable would affect the stream's organisms and physical characteristics over the short and long term. Fill in the chart below with your hypotheses.

	Short term	Long term
Algal growth		
Stream bottom-dwelling insects		
Fish		
Plants on the stream's banks		
The stability of the stream bank		