Name _____   Class _____   Date _____

Historic Pollution in the Hudson River

How has pollution changed in the last one hundred years in Hudson River ecosystem? By completing the following graphing activity, you should be able to answer this question to some degree.

Step 1: Open the Excel data set titled "History of Wastewater". You will be comparing data from the Lower/Mid Hudson region with the Upper Hudson region. For this study, the upper Hudson area was the part of the river that is above the Federal Dam at Troy and continues to the headwaters of the river. The lower and mid Hudson regions include all of the estuarine parts of the river, along with New York City harbor.

Step 2: Create a graph that shows the population over time for both the lower/mid and upper Hudson regions. Make sure to create a secondary axis for the Upper Hudson data so that you can more accurately compare the population growth. Print out your graph and answer these questions.
1. What happened to the population of the lower/mid Hudson region during the last 100 years?
2. What happened to the population of the upper Hudson region during the last 100 years?
3. How do you think these changes could have impacted the river?

Step 3: Create a graph that shows that happened to one of the other variables in both locations (lower/mid and upper): Biological Oxygen Demand (BOD), Total Suspended Solids (TSS), Total Nitrogen (TN), and Total Phosphorous (TP). You'll notice that data is available in two units for the Upper Hudson data; use the metric tons/day unit instead of pounds/day. You will have two lines on your graph, and you should create a secondary axis so that you can see the data more clearly. Then, answer these questions.
1. Describe the change in your variable over the last 100 years. Why did it change? Have things improved? Why or why not? Are the changes the same in the upper Hudson area and the lower/mid Hudson area? Why or why not?
2. Compare your results with other members of your class. Describe the changes in all four variables over time. Why did things change? Have things improved? Why or why not?
3. Which variable, BOD, TSS, TN, or TP, shows the most dramatic improvement? How did you determine this? What effect do you think these improvements have had on the river? Which variable showed the least improvement?
4. Were you surprised by any of the results? Why or why not?