**The Fish Kill Mystery Article Assessment**

1. Write the definition for 5 words from the text that you annotated that you did not understand/needed more info about.
2. Explain in a paragraph, How does eutrophication occur in North Carolina's waters?
3. Answer the following question in complete sentences:

 Why are estuaries, such as the Pamlico Estuary, so important?

1. Answer the following question in complete sentences:

High levels of nutrients moving into the estuary have been linked to Pfiesteria outbreaks. What nutrient sources might contribute to this problem?

1. Answer the following question in complete sentences:

Why might people not want to eat seafood from areas of the ocean where high levels of Pfiesteria might be present?

1. Why are estuaries, such as the Pamlico Estuary, so important?

2. How would you be able to determine from where nutrient influx comes? Could you prove this?

3. High levels of nutrients moving into the estuary have been linked to Pfiesteria outbreaks. What nutrient sources might contribute to this problem? You should be able to list several potential nutrient sources.

4. The Environmental Protection Agency (EPA) has regulations to manage water pollution. Examine those found at http://www.epa.gov/lawsregs/laws/cwa.html. Given that nutrient influx can be considered a form of pollution, do you think additional regulation is needed? How could this agency regulate all nutrient influx (e.g. suburban runoff)?

5. Summarize the two different camps of thought on the life cycle of Pfiesteria. Which set of arguments do you find more appealing? Defend your answer. How would you go about resolving this controversy? What studies and/or findings are needed to help in this process? Given there is an active controversy in the scientific community on the Pfiesteria life stages, should public policy decisions be made when the scientific community is not in agreement? What would happen if action on this problem were delayed until the controversy was resolved? What if action were taken without all the “facts” known?

6. Under which circumstances should we try to control the population numbers of Pfiesteria? If human health was not threatened, but commercially valuable fish species were harmed, should we control Pfiesteria? If the fish species harmed were not commercially significant, should we control Pfiesteria? Justify your answers in each case.

7. What will scientists need to do before they can develop a test for sampling water for the toxin?

8. What concerns may non-scientists have regarding a test for the toxin?

9. Why might other biologists be interested in studying this organism or its toxin? What other applications might there be?