Where did my Beach go?

Using the following website investigate the causes and effects of coastal erosion on coastal communities.

<http://essea.strategies.org/module.php?module_id=117>

**Scenario:**

“The sand dunes are gone. So is the salt grass. The house now sits on stilts at the water’s edge, stranded like a beached whale. A whale on stilts, that is.”

**Task:**

Your group has been contacted by a group of homeowners whose houses are threatened by the ongoing erosion at Surfside beach. The homeowners have requested that you investigate the situation and make recommendations for how to minimize their losses due to the erosion.

**Part 1:**

1. Read through the scenario information on the website “Where did my Beach go?”
2. Answer the questions below.
3. Using the resources provided on the website investigate the causes of erosion in this area.
4. Based on the causes of coastal erosion in this area, as a group come up with 3 recommendations on how homeowners can minimize their losses due to the erosion.

**Questions:**

1. Explain why erosion is a significant problem for individuals in this area.
2. Explain how the process of erosion can cause such damage to an area.
3. How do human activities accelerate the level and degree of erosion?
4. Describe the factors that have caused the accelerated rate of erosion at Surfside Beach.
5. Explain how dam and jetty-building in this area have contributed to significant levels of erosion.
6. What are the economic impacts of coastal erosion?

**Part 2: Beach Profile Graphing Exercise**

You will be graphing a beach profile over 4 months.

**Procedure:**

1. Open the Beach Profile Data document.
2. Open Excel and input the Beach data into Excel.
3. Highlight the data for the first month (06/25/99) and under the “Insert” tab select “Recommended Charts”.
4. Select All Charts and X Y Scatter. Across the top select a solid line. This will input a graph into your spreadsheet.
5. Complete this process for the next 3 months.
6. Once you have the individual months graphed, highlight the entire data set and create a graph with all 4 sets of data (the graph will have 4 lines).
7. Complete the following questions. The following website will be useful in providing information on how to read beach profiles.

<http://www.seagrant.umaine.edu/extension/beach-profile-monitoring/data/data-instructions>

**Questions:**

1. Explain what the axes of the graph mean (horizontal distance vs elevation).
2. Describe how the slope of each graph changes.
3. In what month was the beach most gently sloping? Is this what you would have expected? Explain why the beach is gently sloping during this month.
4. Explain why beach profiles are useful in predicting or determining degrees of erosion.
5. Using what you know about erosion, do you think a beach profile with a steep slope or a gradual slope would be better if you owned water front property? Explain why.
6. Are beach profiles 100 % accurate? Explain your reasoning.