

Student Comprehension Worksheet

Directions: Please read the online *Science News* article "[The Deepwater Horizon oil spill ruined long-term shore stability](#)" and answer the following questions. A version of the article, "Shores still reeling from 2010 oil spill," appears in the March 25, 2023 issue of *Science News*.

- 1. Why does Scott Zengel, an environmental scientist, consider the study highlighted in this article unique?**
- 2. Outline the cascade of events that led to the destabilization of the Louisiana marshes and shoreline studied by the ecologists. Include at least four events.**
- 3. What was the rate of marsh loss in the area studied before and after the Deepwater Horizon oil spill? (Include the appropriate units.) What does this finding suggest? Are there any other factors that could contribute to the difference in rates?**
- 4. The article mentions two very different tools used by the ecologists to study the spill's impact on the marsh. Name the tools and explain how they were used.**
- 5. Before the 2010 oil spill, the soil concentration of oil aromatics (volatile compounds in oil) in the area studied by the scientists averaged 23.9 nanograms per gram of sediment. How high were the average aromatic concentrations in 2011? How many times greater is the post-spill average concentration than the pre-spill average concentration? What is significant about this finding?**
- 6. What scientific unit is used to measure soil strength? Describe the changes the scientists found in soil strength before and after the spill. What does the most recent soil-strength figure indicate?**
- 7. How can coastal erosion be mitigated? Why could this action work?**

8. The University of Louisiana scientists who did this research have studied the effects of the Deepwater Horizon oil spill for more than a decade. What have the scientists learned doing a long-term study that they might not have learned if they had done a short-term study right after the spill?