

SMS-303: Integrative marine sciences III.

Assignment #2

You are hired by a consulting firm to study Deepwater Horizon pollution in the Gulf of Mexico (see, for example, http://en.wikipedia.org/wiki/Deepwater_Horizon_oil_spill). The questions that follow are based on the mixing processes you studied in the class and lab (if you know of others, don't hesitate to add them for extra credit) and reading on the WWW on the accident.

1. As far as is known, what was the fate of the oil to date (20pts)?
2. What mixing processes need to be taken into account for parts of the oil which propagated to different depths (25pts)?
3. What mixing processes are likely to dominate at the surface in different seasons (25pts)?
4. How did the addition of a dispersant to the oil change how the oil propagated? Did it change the likely mixing mechanisms affecting the oil? (20pts)
5. What is the difference between stirring and mixing (10pts)?

In your answers include references for all your claims. Answers should be limited to less than a page per questions.