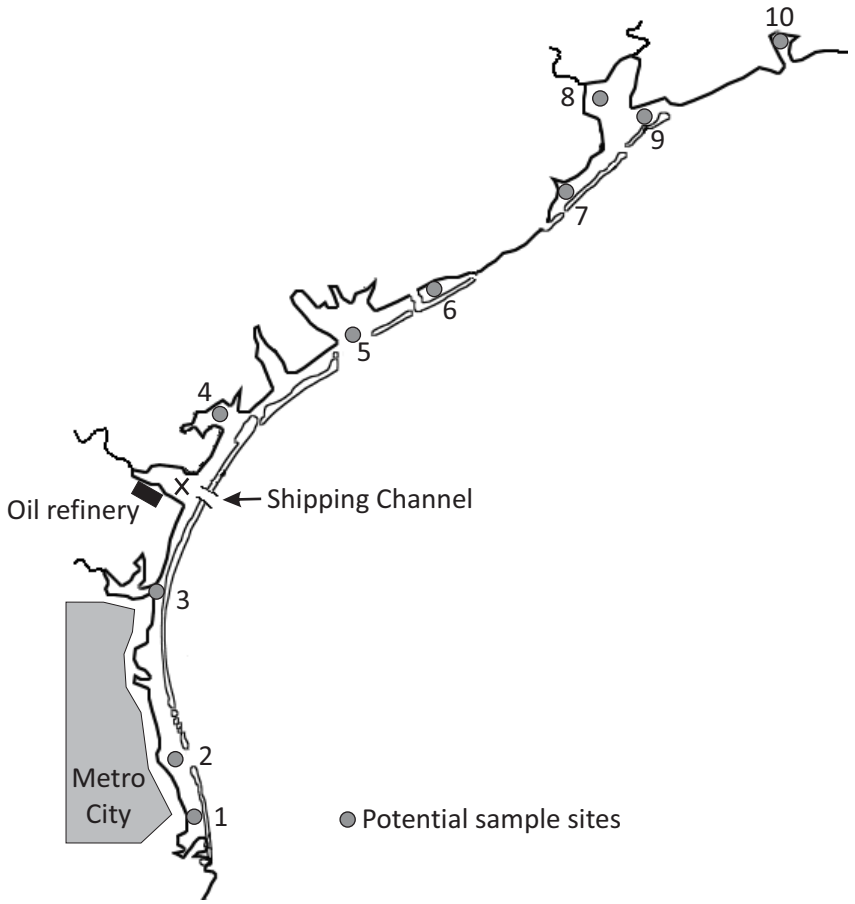
Environmental Reconstruction Report

In the 1920s, a large shipping channel was cut through a barrier island to give oil tankers access to the refinery. The refinery is being decommissioned and the company has hired you to help them restore the ecosystem in the bay. Your study site is at the "X" by the refinery and channel.



Unfortunately, there is no information about the environment or fauna in the bay prior to construction of the channel. Your first task, therefore, is to determine the best strategy for reconstructing the past environment and fauna. The oil company wants to have specific targets - for example of environmental conditions, diversity, or species composition - that they can use to evaluate the success of their restoration project.

1. Develop a research plan to determine the environment and fauna in the bay prior to construction of the channel.

You have already considered the questions to be addressed and the general research methodology. Now you should decide on the specific sampling protocol (locations and number of specimens to be collected).

In research, there is always a trade-off between detail and cost, and your study is no different. The oil company has given you a budget of only $5000 - money found by the CEO between her couch cushions. The costs of sampling and other analyses are listed below, and you should decide how many specimens to sample for each life and death assemblage, and from which locations. You can buy the water chemistry analyses later (next class, after assessing the fauna), but make sure to save some money for that!

Life assemblage (only shelly macrofauna)	Death assemblage	Water chemistry (salinity, O_2, nutrients)
50 specimens - $250	50 specimens - $400	Each analysis - $200
100 specimens - $400	100 specimens - $500	
200 specimens - $500	200 specimens - $650	