Grain Size Distribution in the Western Long Island Sound

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The Long Island Sound (LIS) is located in a highly urbanized area and the annual value of its resources have been estimated to be anywhere between 5.5 (Altobello, 1992) to 17-37 billion dollars (Kocian et al, 2015), making it important to the local economy. There are plans to build offshore wind farms that would provide green energy to 2.4 million homes in New York City (NY gov). These would require laying a cable across the Sound. The Long Island Sound Mapping project was created in order to better manage the resources provided by the Sound using scientific methods. A large part of this is describing the sedimentary environments present. The maps created as a result of the LIS mapping project would be utilized to help determine where to best lay cables in order to protect sensitive environments and to monitor the effect of cables on the LIS. Here different lithologies in the phase three area of the study were mapped using 60 grab samples collected in the summer of 2023. The relationship between backscatter and other features such as water content, shells, and grain size were investigated in order to create more accurate maps in future stages. The results indicate that the overall area is predominantly fine grained and generally align with previous data save a few exceptions. In addition, while there were some trends between backscatter and physical features there are so many possible variables that it may be hard to tell whether it reflects the lithology or is affected by other variables such as vegetation.