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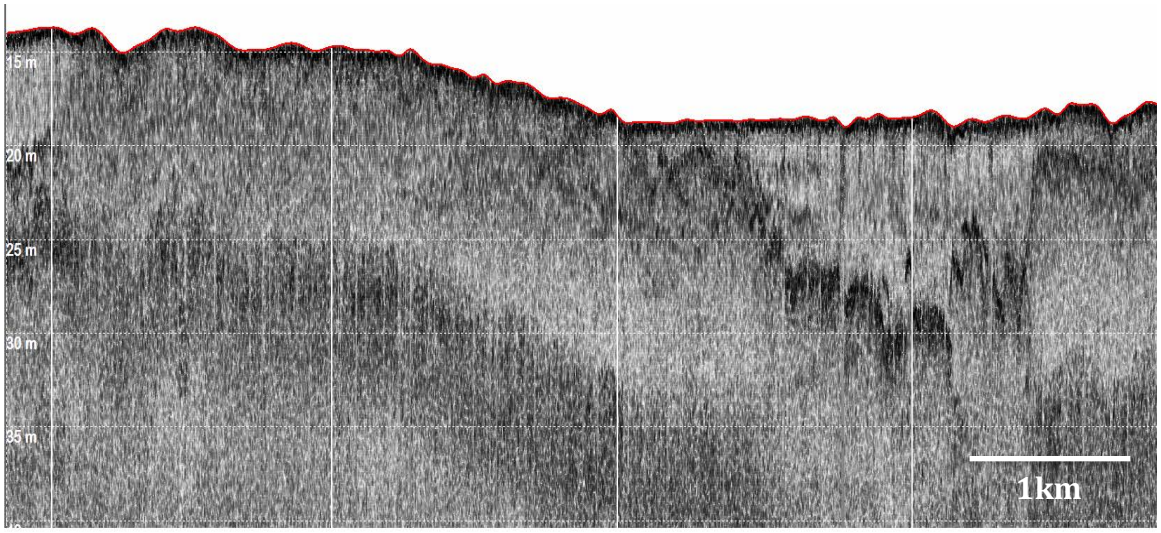
Surficial and Sub-bottom Evaluation of Wind Energy Areas along the Mid-Atlantic Bight: Implications for Project Siting and Turbine Foundation Design



A significant aspect of planning for wind energy is determining appropriate sites to place turbines and foundation designs best suited for the conditions in those areas. We are utilizing sub-bottom profiles to determine what sediments we expect will be encountered (i.e. mud, sand, gravel). Sub-bottom sediment information can inform geotechnical surveys and help to ensure selection of the proper foundation design (i.e. monopole, suction caisson, metal jacket). The goal of this approach is that site evaluations inform foundation design decisions that ultimately reduce overall project costs.

Sub-bottom .SEGY files are imported for processing in SonarWiz. Raw files are edited by adjusting gain settings and bottom tracking. A profile near the Delaware coast clearly shows a paleochannel visible in the post-processed data (fig.1). The channel bottom is expected to be coarse sand and/or gravel. Similar profiles will be analyzed throughout proposed offshore wind sites.