

## APPLIED COASTAL

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**Project:** Environmental Surveys Of Potential Borrow Areas Offshore Northern New Jersey And Southern New York And The Environmental Implications Of Sand Removal For Coastal And Beach Restoration

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The primary purpose of this study is to address environmental issues raised by the potential for dredging sand from the inner continental shelf offshore northern New Jersey/southern New York for beach replenishment purposes and to ensure that offshore minerals are developed in a safe and environmentally sound manner. Using geological information provided by the New Jersey Geological Survey, the USACE New York District, and the USGS – Woods Hole, the MMS identified five potential sites of high-quality sand deposits in Federal waters. Five study elements were identified for addressing the study purpose. They include: 1) quantify the potential modifications to waves that cross within the identified borrow areas due to offshore dredging; 2) quantify the impacts of offshore dredging and consequent beach nourishment on local and regional sediment transport patterns, coastal and nearshore sedimentary environments, and local shoreline processes; 3) assess baseline benthic ecological conditions in and around the proposed sand borrow areas; 4) evaluate benthic infauna resident in the potential borrow sites and assessment of potential effects of offshore dredging on these organisms, including an analysis of the potential rate and success of recolonization following cessation of dredging; and 5) develop a schedule of best and worst times for offshore dredging with regards to transitory, pelagic species. This information generated from this study will be needed should a decision be made to proceed with preparation of an EA or EIS to support a negotiated agreement with the States of New York and New Jersey for access to Federal sand resources.



Applied Coastal personnel are conducting physical processes study elements using existing coastal processes data sets, the spectral wave transformation model STWAVE, historical shoreline and bathymetry data sets, and sediment transport modeling tools. Sediment transport estimates along the shoreline and in the nearshore will be determined from wave and current analyses, as well as historical shoreline and bathymetric change data sets. The information gathered and analyzed during the course of this study is expected to enable MMS to monitor and assess the potential impacts of offshore dredging activities and to identify ways in which dredging operations can be conducted to minimize or preclude long-term adverse impacts to the environment.