Potential Impacts of Beach Nourishment on Migratory Striped Bass off the North Carolina Outer Banks

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Atlantic Ocean waters off the coastline of Virginia and North Carolina, especially off the Outer Banks of the latter, are historical wintering grounds for many species of ecological, commercial and/or recreational importance, including migratory striped bass. Striped bass which spend the winter off the mid- and south Atlantic coasts originate, based on tag recaptures, from the Hudson River, Chesapeake Bay and Albemarle-Roanoke migratory stocks. The fish spend the late fall and winter months resting and feeding, in a manner ecologically analogous to that of wintering waterfowl, in preparation for their spring spawning migrations to coastal and inland rivers. The specific attributes of wintering habitat (temperature, salinity, depth, substrate type, bottom topography, etc.) preferred by the fish are unknown, although preliminary analysis of available data suggests concentrations of fish may exist consistently from year-to-year in certain areas. It is presently unknown also what level of fidelity to specific wintering sites exists (i.e., do fish return to the same sites to winter each year?). Scant information presently exists regarding prey consumed by striped bass on the wintering grounds, although the U.S. Fish and Wildlife Service and National Marine Fisheries Service have some limited data which are reviewed in this presentation. The degree to which Atlantic Coast migratory striped bass may depend on benthic prey, and/or specific sites off North Carolina's Outer Banks, will determine their susceptibility to dredging currently proposed by the U.S. Army Corps of Engineers (COE), Wilmington District. The COE has proposed to excavate seven square miles of nearshore, ocean floor sand habitat, to a potential depth of 20 feet, during the course of the next 50 years, for one beach nourishment project (Dare County Beaches Project). The proposed submerged mining sites selected by the COE have been occupied by striped bass during past winters. Potential impacts could range from temporary, if striped bass exhibit great plasticity in prey consumption and shift use to adjacent unaffected habitats, to long-term and devastating if they exhibit a high degree of site fidelity for reasons which may not presently be readily apparent. Additional projects to the south are proposed by the COE, also in areas frequented by migratory striped bass. The U.S. Fish and Wildlife Service and National Marine Fisheries Service have recommended the COE undertake extensive monitoring of striped bass and other aquatic resources prior to and during any project which they may implement.