

less than for nests in the natural sand. The nourishment project resulted in a decrease in the number of nests, an increase in the number of false crawls and a small decrease in the number of turtle emergences onto the beach. Finally the scarp which was higher in the project area was found to be a slight impediment to turtles approaching the beach for nesting.

Nelson, D.A. and D.D. Dickerson (1988) "Hardness of Nourished and Natural Sea Nesting Beaches on the East Coast of Florida", U.S. Army Corps of Engineers Waterways Experiment Station (Unpublished Manuscript).

A total of twenty-one natural and nourished beaches were selected for field study to examine the hardness properties as measured by a cone penetrometer. Results were available from five previously studied beaches yielding a total of twenty-six beaches. Of this total, five of the eleven nourished beaches were judged sufficiently hard to inhibit normal nesting. Three additional nourished beaches were sufficiently hard that their suitability for nesting was questionable. It was also found that the nourished beaches would intermix with natural sand with time thereby improving their nesting qualities. Beaches nourished with inlet sand were found to be quite suitable for nesting. Of the fifteen natural beaches only one was found to be of a hardness which could inhibit turtle nesting.

Nelson, D.A. and C.H. Mayes (Undated Working Draft) "St. Lucie Inlet Dredged Material Disposal Effects on the Firmness of Sand Used by Nesting Turtles".

The study area was located south of St. Lucie Inlet, FL where 300,000 cubic meters of sand was placed following inlet dredging in December 1984 and January 1985. Control areas were selected outside of the project area in Hobe Sound National Wildlife Refuge. A measure of shear resistance of the beaches was obtained using a cone penetrometer and measurements were taken in the project area before and after the dredge material placement. An increase of shear resistance was found in the project area after sand placement. The placed sands tended to be more poorly sorted with increased percentages of the coarse and fine fractions relative to the natural sands. Turtles were found to nest in sand with a wide range of shear resistances.