

Fort Zachary Taylor State Park Beach Nourishment

By Paden E. Woodruff, Bureau of Beaches and Coastal Systems and
T. K. Blankenship, P.E., Coastal Systems International, Inc.

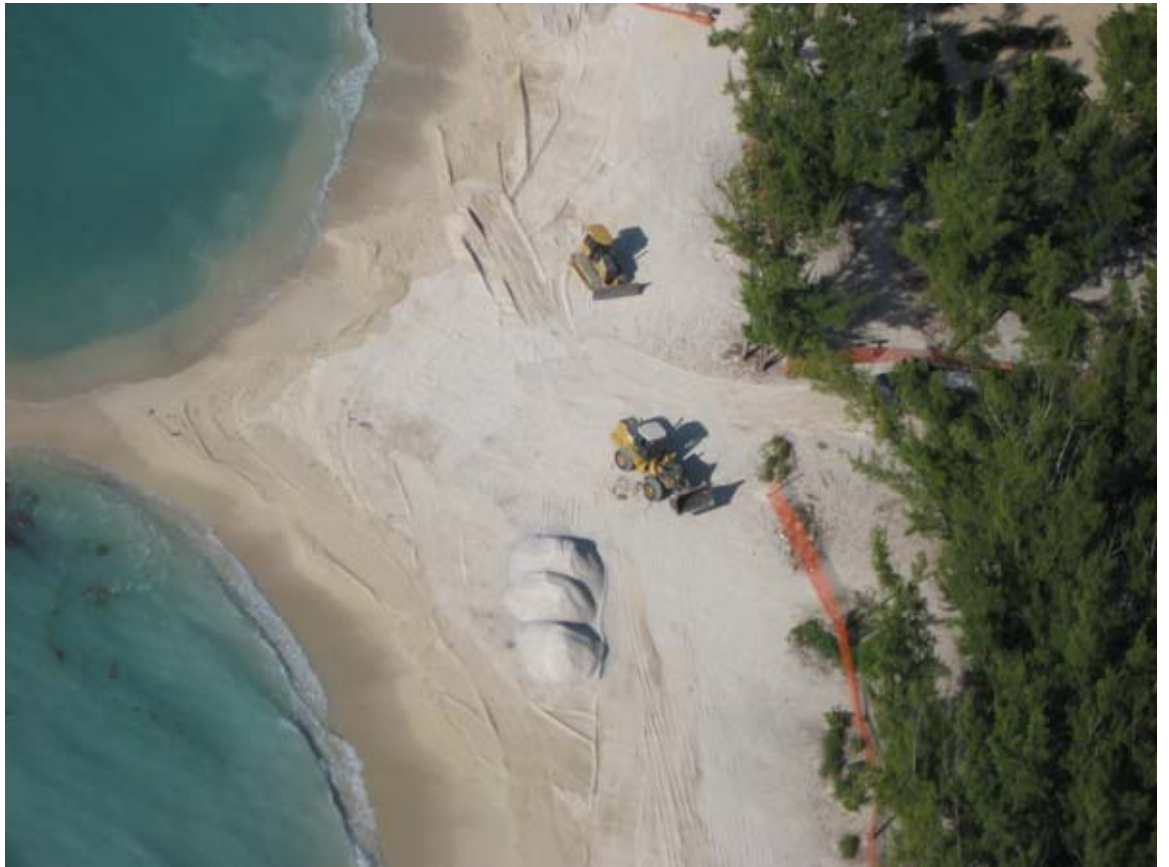
Fort Taylor was one of the seacoast defense posts constructed as part of the Third System of fortifications to protect strategic harbors following the War of 1812. Funding was appropriated by Congress in 1844 and construction began in 1845. Fort construction was difficult due to the remote location requiring materials and the work force to be shipped from the mainland. Work crews were hampered by numerous outbreaks of Yellow Fever, the subtropical climate and storms. Congressional appropriations were sporadic which caused repeated suspension of work.

One year after the building of Fort Taylor had begun; the project was halted due to a violent hurricane striking Key West. Of the 601 buildings in the town, 594 had been greatly damaged or leveled. The fort's cisterns, smithy and stable were spared but four workmen drowned. They were among the 50 people who lost their lives in Key West. The lighthouses on Key West and Sand Key, seven miles southwest of Key West, were toppled. Those who had taken refuge in the lighthouses drowned.

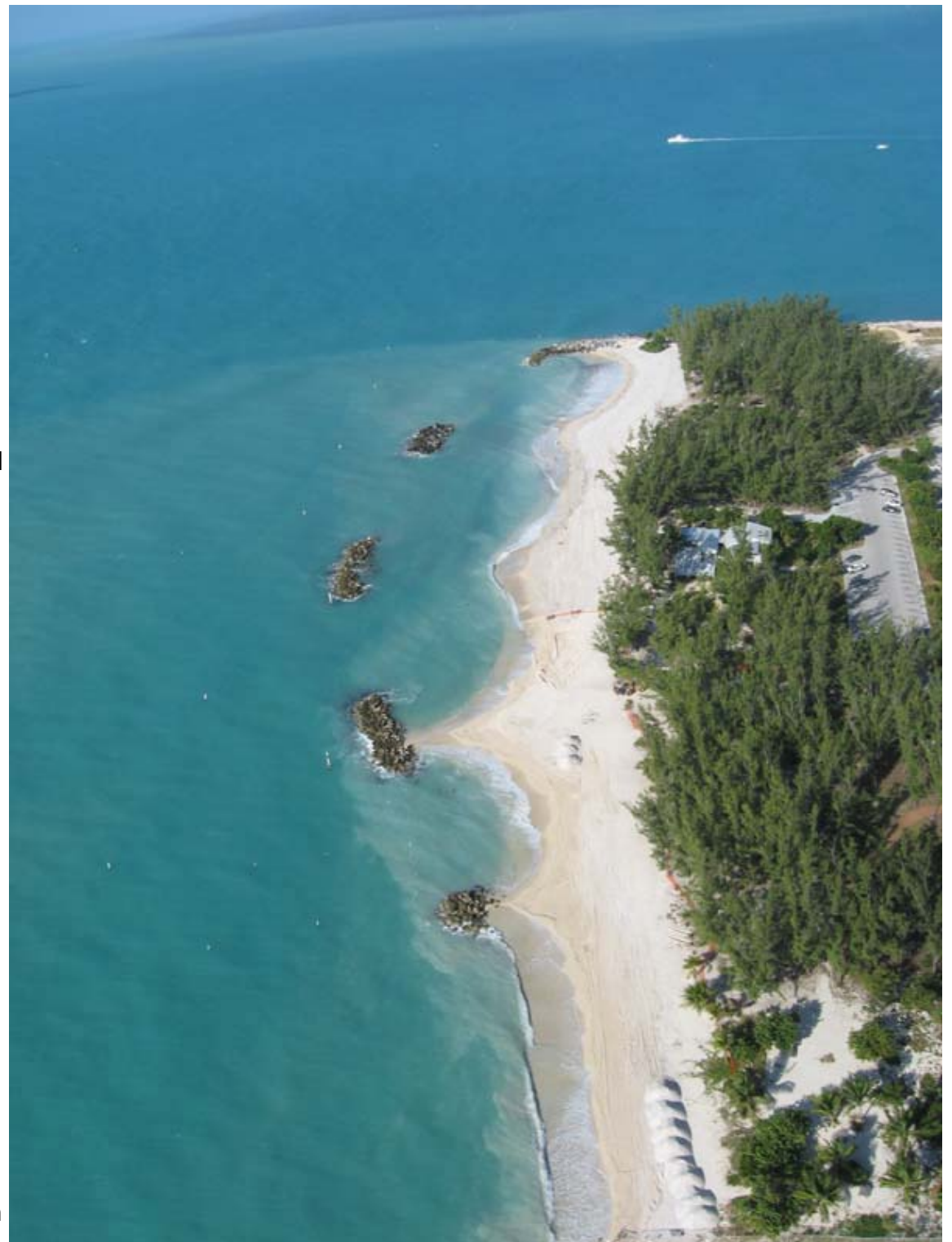
When Fort Taylor was planned, the Corps of Engineers decided that the best place to put the fort would be off shore on the southwestern side of the island. A little more than 60 acres of land was purchased to build piers and supply areas. Engineers constructed a dam and pumped out ten feet of water. They then established the foundation of granite. The three-tier fort would be connected to Key West by a wooden causeway spanning 1,000 feet. By 1851 the walls had risen 10 feet. By 1859 crews had much of the fortress completed. They installed the drawbridge and tidal flush latrines. Cannon had been shipped down and mounted in casemates on two levels and on barbette mountings on the very top of the fort. Toward the end of 1860 the fort was ready for occupancy.

Fort Taylor was one of three forts in Florida to be held by Union forces throughout the Civil War. Fort Jefferson remained in Union hands as did Fort Pickens in Pensacola. The main role of Fort Taylor during the war was to serve as headquarters for the Union Navy East Gulf Coast Blockading Squadron. Close to 300 vessels were captured by the squadron and forced to anchor in front of Fort Taylor. Over the years the fort was modified with new coastal artillery until its military role came to an end in 1947. The property was then transferred to the Navy as part of the naval facilities in Key West. Although the original fort was surrounded by water, over the years the Navy placed dredge spoil from channel and harbor deepening projects so that by the late sixties the entire fort was encompassed by fill material. The fill material consisted of large rocks and coral fragments which does not make a very attractive recreational beach. The Department of the Interior took over the property until it was deeded to the State of Florida in 1976. Fort Taylor which is a National Historic Landmark includes the largest collection of civil war armaments in the U.S.

The southernmost state park in Florida, Ft. Zachary Taylor State Park now has one of the best beaches in



Aerial Photo during construction



Construction nearing completion



Shoreline condition in 1983

economic upland sources of sand were identified since no beach compatible sand sources were available in the Florida Keys. The DEP Bureau of Design and Recreation is responsible for Florida State Park projects, and the Bureau implemented the Park beach nourishment with 100% funding support from the DEP Bureau of Beaches and Coastal Systems.

The Park beach nourishment project was designed and permitted by Coastal Systems International as part of the ongoing beach management program at the Park. American Earth Movers was awarded the construction contract after a competitive bid process. The contractor hauled approximately 3,600 cubic yards of sand from Ortona mines in Central Florida for a total contract value of \$412,000. The contractor was able to take advantage of a unique opportunity in the sand mining industry in Florida with the availability of the sand source at the Conrad Yelvington rail yard near Ft. Lauderdale. The sand was hauled by trains from the Ortona mines and then trucking was only required from the rail yard in Ft. Lauderdale south to Key West. Despite ongoing road expansion construction on the Overseas Highway north of Key Largo, the contractor was able to complete the project in approximately 1 month, averaging 40-50 trucks of sand placed per day. The project included selected invasive species removal, and the Park has planted several areas of native dune vegetation as part of the ongoing Park beach management program.

The beach nourishment was completed in December in time for the peak winter tourist season and prior to marine turtle nesting season in May. On July 27th and 28th the park had 99 Loggerhead turtle hatchlings emerge from their nest in the newly placed fill material. This is the first viable marine turtle nest in the park since 2003. Bird watchers can see Gray Kingbird, Caribbean Short-eared Owl and trans-Gulf migrants. The breakwaters for shore stabilization were constructed in the late 1980's, and they also provide habitat for corals and tropical fish. The park has facilities for parking, shady picnics, fishing, swimming, snorkeling, and concessions. For more information on the park, please visit the DEP Parks web site: <http://www.floridastateparks.org/forttaylor/default.cfm>

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Key West. The beach attracts locals, tourists, and cruise ship passengers, with a projected attendance of over 450,000 visitors for 2008. The projected attendance figure, based on the first 7 months of 2008, is much larger compared to previous years. Attendance for 2005, 2006 and 2007 was 281,413, 269,777 and 314,639 respectively. The lower attendance for those years is due to the tourist industry recovering from the storms of 2004 and 2005. The increase in attendance beginning in November 2007, when the nourishment project was under construction, is evident from review of the data through July of 2008.

The 0.3 mile of beach at the Park is critically eroded and requires periodic maintenance due to its southernmost location and exposure to coastal forces. Shore protection is enhanced with a series of four breakwaters and a terminal groin. The truck haul beach nourishment was completed in December 2007 to restore the beach after the hurricanes of 2004 and 2005 which also damaged the coastal structures. Prior to the beach nourishment, a carbonate sand source investigation was completed in October 2005, and the most