

## **SHORELINES – March 2002** **As presented to the Island Review Magazine.**

In last month's issue we discussed the first tier of the Shore Protection Management Plan - (1) *Long-Term and Supplemental Beach Restoration Projects*. In this article, we are going to provide a brief overview of the dredging practices conducted by the United States Army Corps of Engineers (USACE) at the Morehead City Harbor. We will also discuss the detrimental effects that these practices have had to the inlet/shore processes and overall sediment budget of Bogue Banks. The strategies to alleviate these consequences are incorporated in to the second tier of the Shore Protection Management Plan – (2) *Morehead City Harbor Sand Management Projects*.

The current Morehead City dredging project consists of a 47-foot deep by 450-foot wide ocean entrance channel that connects with an inner harbor channel and turning basin area that is generally 45-foot deep. The dredged, deep ocean entrance channel collects ebb tide delta sediment that is set in motion by wave and tidal action, and also intercepts sediments transported to the inlet from adjacent beaches. This material cannot escape the channel by natural processes, but is rather removed and deposited 1 to 2.5 miles offshore during maintenance and construction (deepening) operations. In other words, sands dredged from the ocean channel that are initially heading toward the Bogue Banks are intercepted and disposed of miles offshore.

Since 1911, approximately 51 million cubic yards of sediment, most of which is beach quality, have been dredged from the outer harbor and disposed of offshore under the confines of the USACE least-cost dredge disposal policy. This winter, approximately 1,000,000 cubic yards of sediment will be displaced offshore. Based on project figures from the Pine Knoll Shores/Indian Beach Joint Restoration Project, if just one annual offshore dredge volume was placed on our beaches, it would create an approximate stretch of beach that would be 3 miles long by 125 feet wide. The mismanagement of sand that is removed during dredging operations has caused a regional sediment deficit resulting in erosion of downdrift beaches. This process is compromising the recreational benefits and environmental habitats associated with wide and healthy beaches.

The two general strategies that the county and local municipalities are using to counteract the negative impacts of dredging operations at the Morehead City Harbor are the *USACE Section 111* and *Conceptual Sand Management Projects*. The USACE Section 111 Project was initiated in 1994 by the town of Pine Knoll Shores and corrects damages to shorelines that can be directly attributable to Federal navigation projects. Somehow and unfortunately in 2001, the USACE determined that the "...shoreline change rates for the Town of Pine Knoll Shores were basically the same for the period with the navigation project as for the period prior to the navigation project". Therefore, mitigation for shoreline damages under the authority provided by Section 111 was not warranted. In the same report the USACE also stated that "...significant physical changes in the configuration of the Beaufort ebb tidal delta has altered the ability of the inlet to naturally bypass sediment from one side of the inlet to the other." Because of the obvious negative impacts to our sediment budget and contradictory statements contained in the Section 111, a formal rebuttal correspondence is currently being prepared and will be submitted to the USACE for consideration.

The second strategy is the *Conceptual Sand Management Project*. The term conceptual is used in this instance because current USACE federal/non-federal cost-sharing authorities are inapplicable to the Morehead City Harbor/Bogue Banks situation and the USACE least-cost dredge spoil disposal policy prohibits any deviations from the current practice. Thus, County and municipal officials are developing a comprehensive plan to mitigate and/or correct sand deficit issues caused by dredging operations by thinking "outside the box". This will hopefully create a progressive solution that is economically equitable to

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all of the involved parties. The ultimate goal of both the USACE Section 111 and Conceptual Sand Management Project strategies is to place beach-quality sand that is removed annually from the harbor onto the shorelines of Bogue Banks.

Also, don't forget that the Emerald Isle Beach Nourishment Bond Referendum is March 5, 2002. The referendum includes a 9.8-mile beach nourishment plan and involves realignment of the Bogue Inlet navigational channel. Please do not hesitate to contact me at (252) 393-2663 or [rudi@co.carteret.nc.us](mailto:rudi@co.carteret.nc.us) if you have questions regarding the referendum, or any other projects that the county or local municipalities are undertaking.

**Beach Commission Update**

The results of the United States Army Corps of Engineers (USACE) Section 111 Report was a hot topic at the Beach Commission meeting held on December 28, 2001. The County's professional beach lobbyist, Howard Marlowe of Marlowe & Company was also in attendance. Mr. Marlowe noted that the Section 111 results were not a serious setback in the County's Shore Protection efforts and that even if there was a finding of fault with the USACE, an appropriations process would have to be pursued through Congress to implement mitigative measures. However, Mr. Marlowe recommended that the County should prepare a correspondence summarizing its objections to the study findings.

A Section 111 review by Erik Olsen, P.E. that was prepared on behalf of the Bogue Banks Beach Preservation Association (BBBPA) was distributed to the Commission. The reviews by Olsen and Dr. Bob Dean, who also prepared a Section 111 review for the BBBPA, demonstrated that data omitted by the USACE could have produced a more favorable conclusion for Bogue Banks. Mr. Olsen illustrated that the interpretation of the mean high water line used by the USACE was subject to a high degree of error. Mr. Olsen recommendations concurred with Mr. Marlowe's opinion presented earlier in the meeting that a correspondence should be prepared rejecting the results of the Section 111 Study.

It was agreed that a Section 111 response letter should be prepared, and submitted under the Town of Pine Knoll Shores (PKS) cover and signed by the Mayor. This decision was predicated on the fact that PKS requested the Section 111 study in 1994. The letter should include a respectful disagreement of the results, note that the USACE has caused a more negative impact to Bogue Banks than was asserted in the Section 111 report, and to request that the USACE remediate the sand deficit issue caused by harbor maintenance.