

Who's Mining the Beach?

One of the internationally-recognized conventions concerning beach nourishment is never to mine sand from the tidal deltas between barrier islands. Except under special circumstances, this rule is followed all over the world; including the United States. To our knowledge the first outright, large-scale mining of a tidal delta in the US occurred in 2001 right here in North Carolina - in Shallotte Inlet - and was carried out solely to place cheap sand along the beaches of Ocean Isle Beach. This taxpayer-funded sand mining project, which would not have been approved in any other state, certainly is one we would have raised an alarm about had the US Army Corps of Engineers not effectively hidden it from public scrutiny by categorizing it as a navigation project.

Tidal deltas are the huge bodies of sand that extend landward (flood tidal delta) and seaward (ebb tidal delta) from inlets between barrier islands. The ebb tidal delta is formed by the ebb, or outgoing, tide while flood tidal deltas are formed by the flood, or incoming, tide. The volume of sand in tidal deltas can be enormous, sometimes larger than the combined volumes of adjacent barrier islands. Sand is moved from island to island through complex (and poorly understood) transport paths across these bodies of sand.

Tidal delta sand is ideal for beach nourishment because it is actually beach sand that has been transported into the inlet from the adjacent beaches. Its close proximity also makes it cheap to acquire; much less expensive than going to the adjacent continental shelf.

The problem with using tidal delta sand, either ebb or flood, is that after mining, a tidal delta will reconstitute itself into its former shape in equilibrium with the waves, currents and storms at a particular inlet. After mining, sand that was once transported across the tidal deltas - from island to island - will now be trapped in the newly-dredged hole, causing adjacent islands to be starved of sand. This is why large navigation dredging projects often cause so much erosion along barrier islands.

But the project in Shallotte Inlet went far beyond mere navigation. Prior to dredging, the channel in this inlet was probably on the order of 100-200 feet wide. After dredging, a 1,200 foot-wide trench had been cut through the inlet, and nearly the entire ebb tidal delta (which was relatively small) had been removed. In just a few months, the Corps had inflicted severe, long-term damage upon Ocean Isle Beach and Holden Beach (the islands on either side of Shallotte Inlet).

For years to come, no sand will flow between these islands and the erosion rates on both will be dramatically increased (although it may be a few years before this effect becomes apparent). Interestingly, the erosion rate of the nourished beach will itself increase; a victim of the pit from which it was obtained.

Mining the Shallotte Inlet tidal delta was an unacceptably irresponsible act on the part of the Wilmington District of the US Army Corps of Engineers. Ironically, the responsibility and money needed to repair future damages likely will go to the Wilmington District, the very same agency that caused the damage in the first place. Through its careless decision to cut corners and save a few dollars, the Wilmington District has virtually guaranteed a huge payday for itself, again at taxpayer expense.

Now the dam is about to burst as the Corps, irresponsible engineering consultants and desperate coastal communities view inlet tidal deltas as convenient sources of nourishment sand. The town of Emerald Isle is proposing to mine the Bogue Inlet ebb tidal delta to obtain cheap nourishment sand; North Topsail Beach is looking to mine the New River Inlet ebb tidal delta to solve its erosion problems and, at the west end of Ocean Isle Beach, an exclusive homeowners association (with no public access) has already submitted a permit request to mine the flood tidal delta of Tubbs Inlet. Mining the tidal deltas at both ends of the same island (Ocean Isle Beach) is akin to environmental suicide.

It is clear that the state can not rely on the Corps to do the right thing along the North Carolina coast. The NC Coastal Resource Commission must put an immediate end to the reckless practice of mining inlets for nourishment sand.

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