

Comment

Corps of Engineers' dredging a washout

One of the anomalies of the environmental age is that the Corps of Engineers has become the alleged

protector of wetlands when it traditionally has been one of their biggest enemies, especially tidal wetlands threatened by beach erosion.

There is growing evidence that the main reason we are losing beach shoreline

at such an alarming rate is not sea level rises but the destruction of natural beach protection systems by the Corps of Engineers and its multibillion-dollar dredging lobby.

Every time the corps dredges an inlet or a harbor, it is removing underwater deltas and shoal systems that normally slow down coastal currents and allow beach buildup. The corps reinforces this destructive process by trying to control the resulting beach erosion through building rip-rap rock revetments. Such "armoring" only hardens shoreline and speeds up currents carrying away still more beach.

As geography professor Rutherford Platt of the University of Massachusetts points out in a recent article in *Cosmos*, "armoring often leads to the loss of the beach itself due to

increased wave scour, steepening of the shore profile and loss of dunes as a source of beach sand." Every year the corps spends \$50 million in direct costs on such futile erosion projects, with another \$30 million on "studies." Counting overhead, it all adds up to more than \$100 million.

Platt's proposed solution is "strategic retreat," letting "natural erosion" take place and giving beach dwellers ample warning.

But a Michigan inventor and environmental crusader named Dick Holmberg says there's nothing natural about this erosion. In fact, most of it could be reversed permanently for less than \$1 million per-mile of beach, a fraction of current costs. What's more, he has demonstrated the ability to do so during the past 20 years.

Holmberg has a powerful ally in Thomas Straw, a respected geomorphologist from Western Michigan University. Straw is winding up a two-year, state-financed study of Holmberg's patented techniques, which Straw admits "show great promise."

In Saugatuck Township on Lake Michigan, a beach road was closed to traffic when the beach area was swept nearly clean of all sand. Rocks and clay were exposed back into the primary bluff facings.

But this summer, the road and beach will be reopened for the public. Holmberg's system produced a net

gain of 957 cubic yards of sand per acre. The nearby "control" area, which did not use Holmberg's system, lost 1,410 cubic yard per acre in the same period — a net gain for Holmberg's system of 2,367 cubic yards per acre.

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Holmberg's system also was used across the state at Tawas City on Lake Huron, in an easterly facing shore where there is less erosion. Nevertheless, sand accumulation increased by nearly 30 percent.

"I'm impressed," Straw told us. "I am even more impressed by what happened at New Buffalo on Lake Michigan, where in 1983 they installed Holmberg's system in the water that was 10 feet deep at the bluff line. Now there is 10 feet of surface sand depth."

Holmberg's system is simple. He recreates the natural delta structures that the corps had been dredging away. He puts together underwater current stabilizers made out of plas-

tic-treated cotton bags filled with concrete and extends them out about 100 feet or more into the water. These submerged "artificial dunes" act as "speed bumps" to slow coastal currents and promote sand build-up.

In Florida's gulf coast, the beaches along Captiva Island disappeared at an alarmingly rapid rate for decades. After millions of dollars of counterproductive dredging and seawalls, Captiva residents applied Holmberg's method to a 650-foot stretch of the beach line. Before and after photos show that within 40 days what had been a hollowed out shore had already been restored to a full and gently sloping beach.

Naturally, Captiva residents were delighted. For less than \$90,000 they received real beach restoration. Not surprisingly, the Florida dredging lobby was furious. With the help of then-Gov. Bob Graham, they brought a series of procedural complaints against Holmberg, forcing him to go to court to defend himself and recover his lost investment. He won both cases.

Despite this, within two years the self-protective Captiva Erosion Prevention District tore out the Holmberg installation and dredged \$10 million more worth of sand for the island, completely removing the red-fish shoals. That big hole increased the erosion. Now the district wants another \$10 million to repeat it.

Over on Miami Beach, the corps has spent \$64 million pumping sand back on to Miami Beach's 10-mile coastline, a losing battle with an annual maintenance cost of \$3 million. They are now talking about importing sand from the Bahamas. Another corps project on Long Island was washed away within a year.

"Pumping sand is futile," Professor Straw says. "It will just flow back through the system, unless you change the currents and the topography. The Holmberg system appears to offer some promise of doing that. I wonder why the government has any problem with putting these things in. They have approved such a wide range of other structures that didn't work."

But \$100 million a year is a lot of negative incentive.

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