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## **Project takes aim at beach erosion A new approach uses less-invasive geotextile tubes.**

ENGLEWOOD -- A pilot project testing a low-profile approach to control beach erosion is slated for installation sometime this winter at the newly replenished Stump Pass Recreation Area.

Beach Restoration Inc. of Lebanon, Tenn., is the project contractor. The company plans to use a scaled-down version of an old technology, called geotextile tubes, to slow the rate of sand erosion along the shore without halting the natural movement of water, sediment and wildlife.

"Traditionally, these tubes are very large structures, emerging above the water, that completely stop the flow of the current and sediment to down-beach areas," said Beach Restoration president Tim Engle.

"What we are doing is taking the idea of geotextiles and making them much smaller, allowing the flow of water and sediment to continue but slowing the rate of sand loss."

The tubes of tightly woven fabric will be filled with sand and imbedded in the beach floor, extending from the shore into the water for about 150 to 300 feet. Each tube will rise 18 to 24 inches from the sand, allowing water and sediment to move naturally but slowing the pace.

"When the current encounters the tube, it slows enough for sand to fall out of suspension in the water," Engle explained, thereby keeping more sand on the beach.

Engle also stresses a scientific approach to the technology. Beach engineers will analyze wave patterns, weather, and other data specific to the Stump Pass area and design an installation tailored to those conditions. A three-year monitoring program will measure the results of the project.

"That has never really been done before. Geotextiles have mostly been applied in a very generic way and not fitted to the particular beach conditions," Engle said.

The project will also evaluate the impact of the technology on the beach environment and wildlife. Engle said the low-profile tubes should be less disruptive to wildlife than traditional approaches.

"The turtles and fish and other creatures should be able to easily negotiate over the tubes," he said. "We will also be placing the tubes to avoid turtle nesting sites."

Preliminary plans call for approximately 10 tubes along every 1,000 feet of beach. The installation of the tubes should take only a few weeks, Engle said.

He hopes to complete the work before sea turtle nesting season begins again in May.

Charlotte County officials hope the project will help protect a recently completed renovation of the Stump Pass area. The county spent about \$12 million this year to realign and dredge the pass and replenish beaches to the north and south.

"We anticipated a schedule of maintenance dredging in Stump Pass about every three to four years. This (pilot) project could extend that schedule to every four or five years," said Assistant County Administrator Tom Keith. "Over time, that adds up to a significant savings."

#### **Help from the state**

The Florida Department of Environmental Protection has agreed to contribute about \$750,000 to the estimated \$1 million installation under a grant program for innovative projects. The county will kick in about \$250,000 left over from the dredging project, which came in under budget, Keith said.

The FDEP is reviewing the scope of the work proposal for final approval, said Paden Woodruff with the Bureau of Beaches and Wetland Resources. The project would then need permits from the DEP and the Army Corps of Engineers.

Woodruff said the state is looking at four innovative technology projects this year. The Stump Pass project has the highest level of funding. Others include about \$500,000 in Walton and Broward counties, and \$300,000 in Lee County.

"These are experiments, really; we don't know exactly what will happen," he said. "What we are looking for is ways to improve the management of the shoreline, including the performance of beach restoration."

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