

Bridgeton News

Natural reefs fix shoreline

Thursday, June 05, 2008

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BRIDGETON -- What if you could stabilize eroding bayshore shorelines using only natural materials, many of which are free and already there?

The Delaware Estuary Living Shoreline Initiative (DELSI), a project of the Partnership for the Delaware Estuary, in conjunction with the Haskin Shellfish Research Laboratory, at Bivalve, is employing research to see how successful living shellfish reefs would be in Delaware Bay. It has already been tested elsewhere.

Dr. Danielle Kreeger is collaborating with Rutgers University Haskin lab, in Bivalve.

Kreeger presented a PowerPoint program for the county planning board on Wednesday, explaining how the reef project works and the benefits, over and above stabilizing the shoreline.

Both oysters and mussels have been found to be successful in this project.

But, in New Jersey, mussels will be used because there is a fear that people could harvest the oysters illegally and perhaps be sickened by them because they could be growing in polluted waters or be contaminated by bacteria. The mussels are inedible.

Different methods will be used to test the various ways the shellfish could stabilize the shoreline.

Rolls of coconut fiber, called bio-logs, or mats of the same material are placed where shorelines are eroding.

In areas where oysters would be used, bags of shells, or cultch, can be placed in intertidal areas where they could "catch a set," the term used to describe the attachment for future growth of larval oysters in the water column.

Where mussels are to be used, the coconut fiber, or coir, can be seeded by naturally occurring larval mussels.

Mussels naturally occur in this area and stabilize marshes by binding tightly to each other and spartina alternaflora, the common intertidal grass found along our bayshores. The dense clusters encourage sedimentation and vegetarian production.

The New Jersey bayshore has experienced widespread degradation and loss. There is no place for it to move inland, in many places, so an effort is being made to stop the inland movement.

Marshes filter tidal waters, improve water quality, provide habitat for fish and birds, serve as spawning grounds, nurseries and foraging areas for young and nesting grounds for birds.

They also act as sponges, retaining excess water and buffering inland areas against storm surge.

Kreeger noted that much of the devastation from hurricane Katrina in New Orleans was because the buffering wetlands had been filled and destroyed.

A test project is being conducted at the mouth of the Maurice River, where the shoreline of Bivalve and a small area on the Matt's Landing side, totaling 2,500 linear feet of the river, are part of a mussel project.

There has been significant erosion there because of the loss of Basket Flats, at the river's entrance, through erosion.

Kreeger showed pictures of undercut banks and fingers of mussel beds, where areas between them washed away because there was nothing to hold it.

These areas are places where filling in with logs or mats could encourage the restoration of

mussel beds and stop the inland march of erosion.

Beds of mussels are so dense, they can't be pulled apart, Kreeger said.

"You need a chipping hammer," she said.

Several other locations in the area are being considered for further "plantings" of mussels, including the Cohansey River, Fortescue Creek and Dividing Creek.

Shellfish reefs have a very favorable cost/benefit ratio compared to breakwaters and bulkheads, she said.

"Once established, they maintain themselves forever," she said.

Funding from the U.S. Fish and Wildlife Service is supporting the project.

"We have bio-logs stockpiled to do a half-mile of the Cohansey River later," she said.

Kreeger said it is necessary to make sure there would be no adverse effects on other species in the Cohansey.

"A lot of people are really excited about this," she said. "It's really helpful in the tributaries and the mouths of creeks."

Dr. David Bushek, of the Haskin lab, worked with Kreeger on the project.

"This is the one of the best projects I've seen," said Planning Director Bob Brewer. "It's in tune with the environment."