



Everything Jersey

The Star-Ledger

Bridgeton News

Mussels stopping erosion

Tuesday, June 02, 2009

By JEAN JONES

jeanjones@fast.net

A low-cost project which will hopefully combat erosion, assist in production of fish and improve water quality appears to be working.

The Delaware Estuary Living Shoreline Initiative started last year at points along the Maurice River across from Bivalve and just upriver from Matts Landing.

On Monday, Dr. Danielle Kreeger, representing the Partnership for the Delaware Estuary, and Dr. David Bushek, from the Haskin Shellfish Research Laboratory, lead scientists for the project, took a tour to see progress in the still-developing plan.

Ribbed mussel reefs are being created to stop erosion where it is occurring and to reverse it elsewhere.

Mussels are particularly suited to this project.

They put out a foot to locate a plant root and use tiny appendages called byossal threads to glue themselves to the roots.

"The glue sets underwater and is the strongest underwater glue ever discovered. Because of that, it is being used in dental work," Kreeger said.

The project involves using "bio-logs," made of coconut fiber, staked into the edge of the marsh, as a base for mussel colonies.

Small clumps of mussels and the spartina grass they cling to are "planted" in the logs.

"In 48 hours, they have stabilized," she said.

Coconut fiber mats are also used, sometimes on a bank or sometimes behind a log.

Bags of oyster shells now are being used to armor the river side of the logs.

Kreeger pointed out clumps of spartina sprouting from some of the logs placed last year.

The cost is from \$1 to \$10 a foot, a small sum compared to an engineered project using concrete and other materials to prevent erosion.

The logs are a byproduct of coconut production in Sri Lanka. The mats and rope used to tie them down also are from this source.

Kreeger said she is able to spawn her own baby mussels, but she found a natural set from local waters

works well.

As for the mussels already embedded in spartina, used to "seed" the logs with plugs, much like planting plug grass in a lawn, they are available for the taking from clumps along the riverbank which have been undermined and broken off as the bank eroded.

Parts of the project started last year already have filled in with silt behind the logs. With luck, mussels will fill in those areas eventually.

While some areas have fared better than others, places that have not filled in as well as expected have served as a learning tool, suggesting different ways to align the logs or ways to augment them, such as the shells.

Turbulence from the wakes of passing boats is a major cause of erosion here.

The currents also are stronger since Basket Flats eroded away.

Basket Flats was a piece of marshland that protruded out into the Maurice River, downriver from where the restoration work is taking place.

The work has been funded by two grants. Kreeger said an application has been made to the National Oceanic and Atmospheric Administration (NOAA) for a third, which will cover headwaters to the ocean.

She said freshwater mussels are in trouble in most places and have been completely eliminated in many of their former habitats.

The saltwater-ribbed mussels are useful in controlling erosion, but all mussels are filter feeders and they remove bacteria from water, along with other pollutants.

Others concerned about erosion have stepped up to assist in the project.

"We've had really good success in getting volunteers," Kreeger said. "All kinds of agencies have helped out."

Helping on Monday on the muddy riverbank were Laura Whalen, Angela Padeletti, Joshua Moody and Kurt Chang.

©2009 Bridgeton News

© 2009 NJ.com All Rights Reserved.