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Oyster project shows promise



Dr. Peter Frederick speaks about methods for helping to restore resilience to oyster reefs.

Story and Photo

By Jeff M. Hardison © Dec. 7, 2016 at 4:07 p.m.

LEVY COUNTY -- The University of Florida's Institute of Food and Agricultural Sciences sent Dr. Peter Frederick to the Levy County Commission meeting Tuesday morning (Dec. 6) with happy news.

Joined by UF IFAS Shellfish Aquaculture Multi-County Extension Agent II Leslie Sturmer, Dr. Frederick told the Levy County leaders about an \$8.3 million oyster restoration project approved for Levy County waters.

Funding for this research project comes from the National Fish and Wildlife Foundation, Frederick said, and so this is not a tax-funded project.

Instead, this money results as part of the compensation from a big oil spill in the Gulf of Mexico. And this funding does not take away from other compensatory funds that will help Florida counties from that disaster.

This project is intended to restore a degraded chain of oyster reefs in the Big Bend area.

The degradation of the Lone Cabbage (Oyster) Reef, Frederick said, is an example of what is happening on many offshore oyster reefs in this part of Florida.

The University of Florida is not in the reef construction business, he said, and so this project is not a stepping stone for UF to go into that industry. UF IFAS, however, is conducting the project, and if results continue to show as they have in preliminary research, then this model may be applied to restore other oyster reefs around the state – including off of Yankeetown, Horseshoe Beach and on up the coast.

Therefore, private interests will be able to use results from this project to consider how that may serve as a business model for reef restoration by the private sector.

By placing lime-rock boulders in parts of this degraded reef, scientists have seen oysters growing there.

Dr. Frederick explained that oysters prefer water that is not too salty. Due to a reduce flow of freshwater from the Suwannee River, he said, the oysters are being adversely affected.

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The reduction of freshwater flowing from the Suwannee River into the Gulf of Mexico is not just from less rainfall, he said. An increase in pivot spray irrigation of farms and the drawdown from the Jacksonville area of the water source that feeds the river, Frederick said, are two significant factors influencing the reduced freshwater flow from that river into the Gulf.

Unfortunately, the loss of parts of the Lone Cabbage Reef also causes a loss of holding some amount of the freshwater up against the coast, Frederick said. Therefore, with the elevation of the reef dropping and the reef becoming smaller, that function of the reef is being diminished as well.

This creates a negative loop, Frederick said, because as the reef diminishes -- so does its ability to help retain the freshwater it needs to balance the saltwater for the health of the oysters.

The sub-strata is vital for the continuation of the reef. Once a reef become a sandbar, Frederick said, there is no coming back.

The pilot project of the past four or five years, where the scientists placed big lime-rock boulders in patchy areas of the reef, included the use of derelict clam bags. Those bags, he said, in many cases included "lots and lots of oysters."

He mentioned as many as 7,000 oysters per bag.

The result, in 18 months, he said, is that the environment goes from that sandbar scenario to a return of the oyster reef.

The project will take about two years to construct, he said. The breakdown of the \$8.3 million project shows about 53 percent of the cost going to construction. There is 22 percent going to salaries. The University of Florida is netting 15 percent for its overhead expenses. There is another 10 percent of the cost going for monitoring the project.

The scientists foresee the project resulting in more oysters growing and retaining more freshwater next to the coast, helping more oysters to grow and repopulate.

All of the saltmarsh on the coast near the reef will see a benefit from the improvement in freshwater retention, he said.

For every one acre of restored reef, he added, that leads to 160 acres of the saltmarsh benefitting.

Dr. Frederick said "the big prize" is not construction jobs for two years.

"The big prize is that we are adding resilience to our coast system in the face of reduced freshwater flow, climate change and sea level rise," he said. "Remember that once you establish oysters, they can outgrow sea level rise. They can really outgrow sea level rise by a long shot."

Commercial seafood harvest and recreational seafood harvest, Frederick said, will benefit from restoring this oyster reef. Estuaries with intermediate salinities are vital to seafood for that marine life to thrive.

"If we lose those intermediate salinities," he said. "We are going to lose our seafood. That has been shown the world over, many times. We think this is the big prize -- keeping our estuary.