



Packery Channel opens seagrass habitats to young fish species

An opened Packery Channel has provided marine organisms another path from the Gulf of Mexico into the safety of seagrass habitats. Opening the channel has resulted in an increase of abundance and diversity of marine life in the area around the pass.

After being closed for decades, water began again flowing through Packery Channel, a sand-filled pass between Padre and Mustang islands, in 2005 when a storm surge hit the area. Dredging and jetty construction finished later and the channel officially opened in the fall of 2006.

This gave researchers a unique opportunity to study the channel's surroundings before and after opening in an effort to gauge its impact on fisheries.

In surveys funded by the Coastal Bend Bays & Estuaries Program, researchers with University of Texas Marine Science Institute and Texas A&M University –Corpus Christi trawled small-mesh nets throughout the area both before and after the channel's opening.

"Inlets are really the lifeblood of the estuaries," said

researcher Greg Stunz, a research professor at the Harte Research Institute for Gulf of Mexico Studies at Texas A&M University-Corpus Christi. "Young come in as larvae into warm shallow nursery areas with low predation and plenty of food and shelter."

Stunz and Scott Holt, a research associate at UTM-SI studied the affects of Packery Channel on small marine organisms. Both Stunz and Holt focused the study on early life stages, larval (plankton) and juvenile (nekton) of fish, shrimp and crabs.

Plankton are moved through the water by currents and tides. Nekton, the next developmental stage, are able to move on their own.

Surveys of what was present before the opening indicated the area acted like a secondary, inland bay. The plankton and nekton that are seen further north at Aransas Pass were absent in the area around the closed Packery Channel.

After the channel opening, researchers found the area mirrored what was found around Aransas Pass.

"New inlets we tend to think are good things," Stunz said. "We saw really elevated abundance."

Many marine organisms occurring in coastal waters share a common life cycle of near-shore spawning in the Gulf of Mexico, followed by migration through tidal inlets into shallow estuarine nursery grounds. Access to high quality habitat, such as seagrass, in these areas is critical for reproduction, growth, survival, and sustainability of these populations, researchers said.

Since Packery Channel gave additional access to seagrass habitat, researchers hypothesized its opening would change the diversity of the surrounding waters. The survey results indicated just that.



Photo: CBBEP

In several spots throughout the area, researchers also used seine nets to collect organisms for analysis.

After Packery Channel opened, the area that didn't have larval or juvenile redfish now saw the species traveling through the new inlet into the seagrasses of the Laguna Madre.

"Packery opened and seagrass was available to them. Same thing happened with crab and shrimp of all varieties," Stunz said.

This research shows a potential benefit of opening channels and inlets, and although the impacted area is relatively small, may help in decisions regarding other silted-in or closed inlets.

"Having Packery Channel opened improves the health of the Laguna Madre estuary," Stunz said. "Flushing of fresh seawater in and out is a good thing. Delivery of young marine life which relies on these areas for nursery grounds is a good thing."

The research points to an expected increase in adult fish populations.

"Overtime I think you'll see elevated abundance of sportfish population," Stunz said.

However, correlating increased fish population directly to the opened inlet would be difficult because of the numerous factors related to overall fish populations.

"We have an inlet here. It's bound to help but it's relatively small," said Holt. "People need to recognize the impact or importance of scale. The impact on affected areas is relatively limited."



Photo: CBBEP

Researchers pulled nets through the waters, recording the type and amount of organisms caught.

Both Holt's and Stunz's studies cited differences in the area directly adjacent to the channel, the areas where the tide reached. Researchers noted any increase in abundance or diversity was limited to those areas, and couldn't be attributed to the overall bay system.

That, in turn, limits any potential benefits to these areas, as well, a point that should be considered when discussing opening other inlets.



Read the full reports online at cbbep.org or click here for "Packery Channel Post-Opening Fisheries Recruitment Assessment – Plankton" and here for "Packery Channel Post-Opening Fisheries Recruitment Assessment – Nekton"

The Coastal Bend Bays & Estuaries Program is a non-profit organization dedicated to protecting and restoring bays and estuaries in the 12-county region of the Texas Coastal Bend. CBBEP is partially funded by the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency.

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