

# CURRENTS

February / March 2016



*Science enhances  
project monitoring*

# Habitat Restoration and Creation and the Science to Support it

*Photos courtesy of Lisa Laskowski*

**By John Blaha**

*Habitat restoration and creation along the Texas Gulf Coast is an important factor in ensuring that coastal resources remain strong and healthy for the future.*

**T**exas Parks and Wildlife Department (TPWD), Galveston Bay Foundation (GBF), Coastal Bend Bays & Estuaries Program (CB-BEP), Harte Research Institute (HRI), University of Texas Marine Science Institute (UTMSI), CCA Texas and other entities all play an important role in habitat restoration. These groups are involved in many different ways including design, construction and monitoring.

“Project monitoring and follow-up is key to fully assessing the impact of habitat restoration projects,” commented Dr. Greg Stunz from HRI. Stunz continued, “In the Cedar Bayou restoration project for instance, while very positive and immediate impacts were seen, it is important to document the trends long-term to see if the opening has lasting impact. We are confident it will, but we want to put the sci-

ence to it.”

As Dr. Stunz noted, immediate impacts are often seen, but the long-term monitoring will show the significance of the effort in the end.

Habitat restoration and creation is expensive. Funds that are secured to execute these projects often have post-monitoring components attached to them to ensure the projects are fully executed as planned. This post-monitoring provides a science-based evaluation that is available for review in the design and implementation of future projects. Another component to the monitoring of habitat restoration and creation is the pre-construction monitoring. Some projects are also required to have pre-construction monitoring, which provides base-

lines that are used for future evaluation.

**C**edar Bayou and Vinson Slough Restoration is a project that had a significant amount of pre-construction monitoring, and continues to undergo post-construction monitoring. HRI has provided this monitoring and it includes Masters student Quentin Hall’s studies that focused on the intensity and immediacy of estuarine-dependent species’ response to the re-opening. Quentin’s studies included intense survey efforts both prior to and after the project. This pre- and post-monitoring showed measurable increases of numerous species within days of the reopening. In addition, a component of his research

also included tagging 11 redfish and tracking their movements through an acoustic array within Mesquite Bay and Cedar Bayou to the Gulf of Mexico.

**J**udd Curtis, PhD from HRI, recently began a study to examine spotted seatrout movement patterns and habitat use through the newly restored and re-opened Cedar Bayou tidal inlet. This project will use acoustic tracking techniques. HRI graciously donated a trip to the CCA Texas Aransas Bay Chapter Banquet



*On cover: freshly implanted and tagged fish being released by John Blaha. Photo by Lisa Laskowski*

*Quentin Hall and Dr. Judd Curtis preparing to insert transmitter.*



live auction for two individuals to accompany the HRI team in the efforts to catch, implant transmitters and tag 24 spotted seatrout for this effort. Linda and Alton Voigt, owners of Rockport Tackle Town,

purchased the trip and fished along with CCA Hill Country Chapter volunteer Lisa Laskowski, CCA Texas

staff member John Blaha, Capt. Jay Watkins and HRI staff members.

The group collectively fished over a three- day period in early December 2015 to catch, implant and tag the fish for the study. The targeted size of the fish was an 18" to 20" minimum length, and specific areas were chosen to fish within the Mesquite Bay / Cedar Bayou area. The process of securing and tagging the fish is a proven method used by HRI and other institutions, and has a very high rate of success in not only the survivability of the fish, but

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also in collecting valuable data.

After each individual fish is caught, it is carefully handled and placed into an oxygen-enriched live well, and the fish is monitored for a period of time. The fish is then removed and the "surgery" is begun to implant the

transmitter in the belly of the fish by making a small incision, implanting the transmitter and then placing a single stitch to close the incision back up.

After this is completed, the fish is placed back into the live well and monitored again to ensure it is stable and ready for release. In

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*Top left: Dr. Judd Curtis making incision to implant transmitter. Right and middle: —inserting transmitter.*

*Below, Alton Voigt, Judd Curtis and Linda Voigt. Alton and Linda purchased a trip at the Aransas Bay Banquet to accompany the team on the tagging effort.*

*All photos are courtesy of Lisa Laskowski.*



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In addition, a green dart tag is placed in the back of the fish identifying it as a research specimen. This tag includes HRI contact information, and the public is encouraged to return the fish to the water if caught, and to call HRI and report the capture and release.

**D**r. Curtis' project will last for 426 days, which is the life span of the transmitters. Data will be downloaded from the receivers quarterly beginning in spring 2016 in order to start accessing movement, habitat use and residency patterns. 17 receivers are included in the Mesquite Bay / Cedar Bayou array with the focus on the Cedar Bayou area, but there is coverage along the periphery

of Mesquite Bay as well. In addition to tracking the movement of the fish, these transmitters will also be able to transmit temperature values. This will allow the project to combine movement and climate data to look at responses to changes in water temperature that spotted seatrout may exhibit, as well as compare seasonal movement and habitat use patterns. This information will be invaluable in making informed management decisions for the conservation of this key recreational fishery.

**H**abitat creation and restoration is important in the effort to ensure healthy coastal resources for the future. Equally important

to these efforts is the research and science prior to the execution of the projects and after they are completed. CCA Texas is committed to being a part of all of these efforts and will continue to work to ensure future generations have access to healthy coastal resources.



*The tagging team: Quentin Hall, Dr. Greg Stunz, Tara Topping, Jason Williams and Dr. Judd Curtis. Above: Dart tag identifying fish and research specimen with HRI contact info. Please release those tagged fish!*

