

Project aims to restore Galveston Bay oyster reefs

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GALVESTON — Floating just a couple of meters above an oyster reef in Galveston Bay, two scientists working to improve the reef sifted through rock and shell pulled up from the bottom.

“I don’t see any spat,” said Bryan Legare, a natural resource specialist with the Texas Parks and Wildlife Department, as he looked for the small, immature oysters.

“It might be a little early for spat since it’s been such a cold winter,” said colleague Bill Rodney, an oyster restoration biologist, as they looked over the pile of cultch — the hard material including rock, crushed limestone and shell that oysters attach to.

The young oysters, or spat, will develop as the weather warms, but the pressing question is whether the right conditions will exist for them to grow to mature oysters, which then become part of a multimillion business and which fill an important ecological niche.

The Texas Parks and Wildlife Department is in the midst of the largest oyster reef restoration project it’s ever undertaken. It’s an effort to provide oysters with a hard surface they can grow on.

The silt deposited in the bay by Hurricane Ike in 2008 and the ongoing drought have damaged oyster reefs in Galveston Bay. Not much can be done about the lack of rain, but the department is trying to do something to deal with the silt by depositing almost 80,000 tons of river rock, ranging from the size of a marble to a small brick, over Middle Reef, Pepper Grove Reef and Hannah’s Reef in East Bay and the large Sabine Reef in Sabine Lake.

The \$4.2 million project began this month and will likely continue until August. Most of the funds are coming from the federal Coastal Impact Assessment Program, which distributes fees from offshore oil and gas leases to states that have leases off their coasts, Rodney said. Coastal Conservation Association Texas, The National Fish and Wildlife Foundation and the foundation’s Gulf Environmental Benefit Fund provided additional project funding.

“One thing we are lacking in, especially Texas, is hard substrate for oysters to attach to,” Legare said.

While Legare and Rodney looked for healthy oysters in a previously restored section of Hannah's Reef in East Bay just a few hundred yards away, a barge floats low in the water weighed down by tons of river rock.

Workers on an adjoining barge blast the rock into the water with high-pressure water cannons. The rock is distributed this way to help get an even distribution over the reef, Rodney said.

Work has been going on now for at least seven years to map, study and restore oyster reefs along the Texas Coast, he said.

And right now, Rodney and Legare agree oyster reefs in Galveston Bay aren't doing very well.

"Hurricane Ike wiped out a lot of oyster reefs in Galveston Bay," Rodney said. "Most of those oyster reefs are covered with a lot of mud."

Scientists estimate 6,000 acres of oyster reefs were lost in the 2008 hurricane. Since then, the ongoing drought has meant less freshwater has reached the bay, increasing its salinity, which can harm oysters, Rodney said.

This year has been an "absolutely horrible year" for oyster fishing in Galveston Bay, said Clifford Hillman, owner of Hillman Shrimp and Oyster in Dickinson.

His family started working in the seafood businesses in 1921, and Hillman began his own shrimp and oyster fishing business in the late 1970s.

Oysters are a multibillion-dollar business in the United States, and about 75 percent of the nation's oysters come from the Gulf Coast, he said. Of that, about 25 percent comes from Texas, where oysters are a multimillion-dollar industry, he said.

But the harvesting of oysters has become more difficult because of the silt deposited by Ike and because of the drought. More freshwater in the bay would help, but until the drought breaks, the next best thing is to replenish the hard substrate the oysters need to grow, Hillman said.

"The industry has been very proactive in concert with the efforts of Parks and Wildlife Coastal Fisheries and we are making some headway," he said.

Giving oysters something to grab onto will help restore an important part of the fishing economy.

Oysters feed by filtering tiny plants known as phytoplankton from the water, with a single oyster capable of filtering up to 50 gallons a day. This filter feeding also removes silt and contaminants from the water.

And while water filtration is one of the primary ecological functions of an oyster reef, oysters also provide other ecological services, Legare said.

“Beyond the fact that you have oyster reefs that you harvest an oyster from, oysters provide very important structure to the bay community and provide homes for small crabs and fish,” Legare said. “The small fish works its way up and attracts bigger fish, more desirable fish.”

But because oyster reefs in Galveston Bay are hidden under the opaque water, they often don’t get the credit they deserve, Legare said.

“People understand why marshes are important,” he said. “You see a marsh. You see the birds.”

Legare and Rodney have to use sonars and sensors to get a view of what lies just a few meters below as they float along in their research vessel.

Sometimes, when the conditions are right, they’ll suit up in scuba gear to get a close-up view of the reef and all the life — fish, shrimp, barnacles and muscles — that call the reef home.

“I’ve sat there, lying down in scuba gear, watching oyster reefs, and they are really beautiful to watch,” Rodney said.

TPWD Begins Record-breaking Oyster Restoration Project in Galveston Bay and Sabine Lake

<http://www.tpwd.state.tx.us/newsmedia/releases/print.phtml?req=20140508b>

HOUSTON – Texas Parks and Wildlife Department has begun distributing more than 79,000 cubic yards of oyster reef building materials (known as clutch) over eight sites on four natural, publicly owned oyster reefs in Galveston Bay and Sabine Lake.

This work is part of ongoing efforts to restore oyster reefs impacted by hurricanes, reduced freshwater inflows, hydrologic alterations, diseases, predators, heavy commercial fishing pressure and other natural and man-made stressors. Starting in April and continuing until August, cultch materials (river rock and/or crushed limestone) will be spread over 180 acres in Galveston Bay and 25 acres in Sabine Lake.

Oyster reefs selected for cultch plantings are: Middle Reef, Pepper Grove Reef and Hannah's Reef in East Bay and the large Sabine Reef in Sabine Lake.

The Galveston Bay project alone will be the largest oyster restoration work in Texas history, breaking TPWD's 2011 record of 175 acres. Together these two projects, covering 205 acres, represent the most area restored by any conservation organization in one year in Texas. Clutch plantings will attract oyster larvae that will settle on the reef and grow into adult oysters. That will help re-establish these previously productive oyster reefs.

The majority of the work, which will cost about \$4.7 million, is being funded through a grant to TPWD from the Coastal Impact Assessment Program, a federal program that distributes fees from offshore oil and gas leases to states which have leases off their coasts. Additional project funding was provided by Coastal Conservation Association Texas, The National Fish and Wildlife Foundation, and the NFWF Gulf Environmental Benefit Fund.

In addition to benefitting the commercial oyster industry, this work will result in numerous environmental benefits.

One of the primary ecological functions of oyster reefs is water filtration. Oysters feed by filtering tiny plants known as phytoplankton from the water, with a single oyster capable of

filtering up to 50 gallons a day. This filter feeding also removes silt and contaminants from the water, making oyster reefs natural bio-filters.

Oyster reefs also provide habitat for numerous bottom-dwelling fish and invertebrates. These, in turn, are food for larger game fish, a food chain that benefits commercial and recreational activities.

Prior to this year's oyster restoration work, TPWD restored 30 acres on Dollar Reef, Galveston Bay, in 2013; 175 acres on six Galveston Bay reefs in 2011; five acres off San Leon, Galveston Bay, in 2009-2010, and 20 acres on Middle Reef in East Bay in 2009.

As TPWD has previously done when restoration occurs, the East Bay reefs will be closed to commercial oyster fishing for two years. The Sabine Lake reef is located in waters that are permanently closed to commercial oyster harvest due to pollution concerns.

For more information or to schedule an interview, contact Bill Rodney, (281) 534-0127, bill.rodney@tpwd.state.tx.us, or Bryan Legare, (281) 534-0103 bryan.legare@tpwd.texas.gov.