DMR puts Mississippi oyster harvesters to work

Beginning in late October 2005, the DMR offered a program to the Mississippi oyster harvesters to assist with the mapping and assessment of the Mississippi commercial oyster reefs, which were seriously impacted by Hurricane Katrina.

All major oyster harvest areas were sampled by the DMR and preliminary reports indicated a significant mortality on the major commercial oyster reefs. The goal of the program was to employ Mississippi oyster harvesters as soon as possible, to assess the resource for future harvest and to identify suitable substrate for cultch planting.

"This is a unique program that combines the manpower and experience of Mississippi commercial oyster fishermen with the resources of the DMR," said DMR Shellfish Biological Program Coordinator Bradley Randall. "By working side by side with the fishermen, we will be able to rehabilitate the losses suffered by Hurricane Katrina more quickly than by ourselves. Plus, we will be able to put some money in their pockets that otherwise they wouldn't have. We have had a lot of positive feedback about the program from the fishermen."

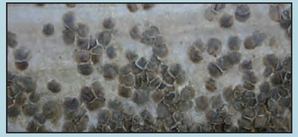
An oyster fisherman uses a cane pole to assess the bottom type of an oyster reef. About 70 boats participated in the program to record data about the bottom type of each reef.

About 70 oyster harvesters recorded data, working in pairs, using cane poles to assess the bottom type of each reef as a live oyster bottom (thick), scattered live oysters, shells/shell hash, firm mud, buried shells/oysters, sand or too deep/unknown. The DMR paid a daily wage per boat for mapping.

Hope for Future Harvest

(Left): These young oysters were found growing on the sides of the Pass Christian Yacht Club swimming pool three months after Hurricane Katrina.

(Below): Here is a close-up of the oysters growing on sides of the Pass Christian Yacht Club swimming pool.



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Oyster Industry Update

- **Thirty-five percent of the oyster fleet was lost as a result of Hurricane Katrina.**
- **About 90 to 95 percent oyster mortality occurred on the major commercial reefs during Hurricane Katrina.**
- **Seventy oyster harvesters assisted the DMR in the assessment and mapping of commercial reefs.**
- **Eighty-two Mississippi oyster boats helped relay oysters from Biloxi Bay and Graveline Bayou to repair reefs in the western Mississippi Sound.**
- **The DMR, with the help of Mississippi oyster harvesters, has planted 75,059 sacks of oysters on Katrina-damaged reefs.**
- **The DMR has deployed more than 14,000 cubic yards of cultch material–rehabilitating about 175 acres of oyster reefs–since Hurricane Katrina.**
- **The DMR is planning a $3 million cultch plant for the spring to help rebuild and enhance oyster reefs in the western Mississippi Sound.**

Oyster illustrations by Joe Jewell.

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Haley Barbour, Governor

Mississippi Commission on Marine Resources
Vernon Asper, Ph.D., Chairman
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Shelby Drummond
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Commercial Fisherman

Jimmy Taylor
Charter Boat Operator

William W. Walker, Ph.D.
Executive Director

William S. "Corky" Perret
Deputy Director

Rebuilding Mississippi's
Oyster Reefs

A publication of the Mississippi Department of Marine Resources, Mississippi Oyster Relief Effort Program

DMR begins rebuilding Miss. oyster reefs

On Aug. 26, 2006, DMR Shellfish Bureau staff, working with a private contractor, planted more than 9,000 cubic yards of cultch material to build new oyster reefs in the Telegraph reef area, located about 4 1/2 miles south of Pass Christian. Meanwhile, other Shellfish Bureau staff were utilizing the DMR's vessel, the *Conservationist,* to dredge about 1,000 sacks of live oysters from the Point Cadet area in east Biloxi for relaying to the new cultch plant site at Telegraph Reef.

"Providing these live oysters to this freshly planted site is like giving a jump start to the new reef," said DMR Marine Fisheries Technician Steve Breland. "Once these adult oysters spawn, this new clean cultch will be excellent material for young oysters to grow on."

"These are the first of the Hurricane Katrina fishery disaster funds to be used for rebuilding oyster reefs," said Jeff Brown of NOAA Fisheries in St. Petersburg, Fla., who on Aug. 30, observed the off-loading of the live oysters over the new cultch plant area. Also observing the live oyster relay were Larry Simpson, Steve Vanderkooy and Ralph Hode with Gulf States Marine Fisheries Commission, the agency coordinating the disaster grant with NOAA Fisheries and the five Gulf states.

Gulf States Marine Fisheries Commission Executive Director Larry Simpson said he is pleased to assist the states and NOAA Fisheries in getting this important work done because it is so vital in the rebuilding of our Gulf fisheries.

More than 9,000 cubic yards of cultch material was distributed in the Telegraph Reef area, located about 4 1/2 miles south of Pass Christian, in an effort to offset the damage done to the oyster reef by Hurricane Katrina.

"On behalf of the DMR, Iwould like to acknowledge the work of and thank Senators Thad Cochran and Trent Lott and Congressman Gene Taylor, and Governor Haley Barbour for their work in getting Congress to approve these disaster funds for Gulf fisheries," said DMR Deputy Director William "Corky" Perret. "This cultch plant certainly fits in with Governor Barbour's Commission on Recovery, Rebuilding and Renewal Program and is the first of several cultch plants that will utilize Hurricane Katrina disaster funds to help Mississippi oyster resources recover from this terrible natural disaster."

The DMR also distributed about 240 bags of oyster shells in the Middle Bay area in southeast Jackson County, Oct. 19-20. The shells were donated to the DMR's Shellfish Program by the Grand Bay National Estuarine Research Reserve and The Nature Conservancy.

About this newsletter

Rebuilding Mississippi's Oyster Reefs **was produced by the Mississippi Oyster Relief Effort (MORE) program, a stewardship program created to better inform and promote the active involvement of oyster harvesters and the industry in harvest practices and other techniques that can be used to assist resource managers in the judicious utilization of oyster resources of the state. For more information about the DMR's Oyster Stewardship Program, contact the Shellfish Bureau at (228) 374-5000. This publication is funded through the National Oceanic and Atmospheric Administration (NOAA) Hurricane Katrina Fisheries Disaster Grant.**

Printed March 2007

DMR announces five-year plan for reef restoration, enhancement, monitoring

The DMR has devised a five-year plan for restoration, enhancement and monitoring of Mississippi's hurricane-damaged oyster reefs. As part of this plan, the DMR hopes to accomplish the following goals and objectives:

Goal 1: To survey, map and mark public oyster reefs, potential cultivation and cultch planting sites.

Objectives:

• To survey reef areas and potential cultivation and cultch plant sites to determine suitability for oyster reef restoration or enhancement work.

• To map public oyster reefs and cultch plant or cultivation sites.

• To mark selected reef areas or cultch plant sites with buoys or other suitable markers.

• To determine oyster reef area changes due to the actions of Hurricane Katrina.

Goal 2: To cultivate oyster reefs and relaying oysters.

Objectives:

• To cultivate reefs impacted by Hurricane Katrina, exposing covered shell and removing some of the encrusting mussels. The cultivation will expose clean material for the potential oyster spat set in summer and fall months.

• To relay oysters from areas of greatest abundance to areas of greatest need.

Goal 3: To deposit cultch material.

Objectives:

• To replenish oyster habitat by depositing shell or other suitable cultch material, providing clean substrate for oyster spat attachment.

Goal 4: To continue Oyster Stewardship Program

Objectives:

• To continue the oyster stewardship program to better educate and promote the active involvement of oyster harvesters and the industry in harvest practices and other techniques that can be used to assist resource managers in the judicious utilization of oyster resources of the state, and in the recovery from Hurricane Katrina.

• To heavily involve harvesters and industry representatives throughout the development and implementation process through meetings, surveys and individual contacts.

• To implement an oyster stewardship program and encourage continued participation by harvesters and the industry to facilitate the Hurricane Katrina recovery process.

Goal 5: To place Mississippi Coastal Drainage Basin Meteorological Monitoring Stations that provide continuous meteorological data on precipitation, temperature, wind speed and direction, solar radiation and atmospheric pressure.

Objectives:

• To acquire, maintain and operate real-time area meteorological monitoring stations that are strategically positioned within the Mississippi coastal drainage basin, in order to capture and provide continuous meteorological data on precipitation, temperature, wind speed and direction, solar radiation and atmospheric pressure for more effective oyster resource management, especially the aspects pertaining to water quality.

• Work with existing monitoring system to assure placement in areas not yet addressed through the existing real time recording meteorological systems operated by the National Oceanic and Atmospheric Administration (NOAA), United States Geological Survey (USGS) or other entities. All data may be shared with the participating agencies.

• Work in conjunction with the efforts of this job to assure consistent implementation for effective sharing of information.

Goal 6: To investigate and field test potential cultch materials and methodologies.

Objectives:

• To investigate the effectiveness and suitability of various alternative potential cultch plant materials for Mississippi oyster reef restoration or enhancement through field tests. This investigation and field testing is desirable due to the high competition and recent relatively low availability of oyster shells due to Hurricane Katrina and the dependence on sources of other cultch materials (e.g. limestone and crushed concrete) in lieu of oyster shells. While work of this type has been explored previously on a limited basis, new technologies may be more suitable to our needs. Alternative cultch materials and methodologies need to be identified and evaluated.

• Reduce the difficulty of obtaining cultch materials through the use of suitable alternative materials, allowing for future oyster reef rebuilding and enhancement.

Goal 7: To provide restoration assistance to Mississippi oyster farm leaseholders.

Objective:

• To provide financial disaster assistance to private Mississippi oyster farm leaseholders for damages from Hurricane Katrina.

Goal 8: To monitor and assess oyster restoration activities. DMR personnel will monitor and assess the recovery of the Mississippi Gulf Coast oyster resources.

Objectives:

•To monitor and assess the results of oyster restoration activities (i.e. cultch plants, cultivation and relaying activities). Collect and analyze data on the condition of oyster reefs in Mississippi to determine the number of live, marketable, and spawnable oysters; evaluate the incidence of predators or competitors and summarize the data.

• Collect and analyze data on spat density and success in selected areas and summarize the data.

MISSISSIPPI OYSTER STEWARDSHIP TEAM

DMR, oyster harvesters work to repair reefs

The DMR Shellfish Bureau has been working with Mississippi commercial oyster harvesters to relay oysters from Biloxi Bay and Graveline Bayou in Gautier to oyster reefs in the western Mississippi Sound to replace reef material lost during Hurricane Katrina. The project began Nov. 13 and was completed Jan. 10. About 75,059 sacks were planted on the Katrina-damaged reefs. Eighty-two Mississippi oyster boats participated.

Oysters were tonged out of Graveline Bayou and transferred to the DMR vessel *Conservationist* in Biloxi Bay. Oysters were dredged and placed on a barge. The oysters were then deployed to the oyster reefs in the western Mississippi Sound from Long Beach to the Telegraph Reef.

"We have received a lot of praise about this project from the fishermen," said DMR Biological Program Coordinator Bradley Randall. "It was successful because we were able to put our fishermen to work and we will reap the benefits in the future. This project along with the spring cultch plants is a huge jumpstart in the recovery of our oysters resources."

The oyster relaying project is part of a five-year oyster recovery plan funded through the National Oceanic and Atmospheric Administration Hurricane Katrina Fisheries Disaster Grant. The first phase of this plan took place in the spring and fall of 2006, with the planting of oyster shells and other suitable reef material to attract larval oysters. Placing live adult oysters adjacent to these areas during the oyster relaying phase will increase the opportunity to attract larvae. The oysters harvested during this project will not be used for personal or public consumption. They will be used solely as broodstock for future spat recruitment.

Commercial oyster harvesters relayed oysters from Biloxi Bay and Graveline Bayou in Gautier to a barge. The oysters were then deployed on reefs in the western Mississippi Sound.

Here, tongers are working in Graveline Bayou. Eighty-two Mississippi oyster boats participated in the relaying project, helping to plant 75,059 sacks of oysters on hurricane-damaged reefs. The oysters were harvested for relaying from Biloxi Bay and Graveline Bayou.

DMR enhances Katrina-damaged oyster reefs

The DMR began restoration efforts on oyster reefs damaged by Hurricane Katrina by distributing approximately 5,000 cubic yards of cultch material (oyster shells) in the Henderson Point Square Handkerchief area about 1.5 miles south of Pass Christian on May 22-26. Hurricane Katrina damaged about 90 to 95 percent of Mississippi's 12,000 acres of oyster beds on Aug. 29, 2005.

"We are proud that Mississippi is the first 'Katrina state' to begin cultch planting operations that will help to restore our public oyster reefs and begin the process of bringing our oyster industry back to its former production," said DMR Executive Director William Walker. "We genuinely appreciate all of the hard work on the part of the oyster industry, our Commission, Governor, Legislature and Congressional delegation in making this possible."

DMR Marine Fisheries Technicians CW Clarke (left) and Steve Breland measure the volume of shell on the barge prior to its distribution in the Henderson Point Square Handkerchief reef area.

"Following Katrina, 'building back better than ever' is a theme that carries beyond our shoreline," said Gov. Haley Barbour. "Restoring our marine resources is critical to the economic and environmental recovery of the Mississippi Gulf Coast, and I am thrilled the Department of Marine Resources has begun the process of oyster reef restoration. This is a significant first step, and with the help of our Congressional delegation, we'll soon be on our way to rebuilding the barrier islands and marshes as well.

"Just like our coastal communities, the beautiful scenery and wildlife habitat for which the coast is well-known will be back stronger and better than ever."

Funding for this cultch plant is being provided by monies from the Hurricane Ivan Shellfish Restoration and Enhancement Project funds and the tidelands program. More money from Congress is needed to go further in the rebuilding process.

We are proud that Mississippi is the first 'Katrina state' to begin cultch planting operations that will help to restore our public oyster reefs and begin the process of bringing our oyster industry back to its former production.

— DMR Executive Director William Walker

Eventually, the DMR hopes to build most of the beds with oyster shells and the broken concrete from structures destroyed by Katrina scattered across the coast. The concrete would be crushed and spread across the bottom of the Mississippi Sound to create new oyster beds.

"It is one of our duties to see that our oyster reefs are developed and made as productive and profitable as possible," said DMR Shellfish Bureau Director Scott Gordon. "The cultch planting is one of the most essential tools we have to achieve that."

Cultch plants consist of spreading oyster shell or crushed concrete rubble over the water bottom using high-pressure hoses, giving oyster larvae a clean surface on which to attach and grow. These plants are intended to enhance oyster productivity and increase fishing opportunities in south Mississippi through the continued development of existing reefs and the creation of additional new reefs.

This barge carries the first load of oyster shells to be used for restoration of Hurricane Katrina-damaged reefs.