

Blue crab aquaculture under way at Lyman

In 2008 and 2009, cultured blue crabs from the University of Southern Mississippi's Gulf Coast Research Laboratory (GCRL) were stocked in MDMR Lyman Fish Hatchery ponds. While pond grow-out of blue crabs had been attempted in other states, it had never been tested in Mississippi. This was the beginning of new opportunities for a traditional industry. Pond-raised blue crabs could develop into new aquaculture products; including the introduction of farm-raised seafood products such as whole crabs, soft-shell crabs and live crabs for fishing bait. The GCRL blue crab aquaculture techniques involve using wild-caught sponge crabs that are returned to the fishery after spawning, helping to assure a sustainable end product.

To date, stocking hatchery-reared blue crabs in ponds has shown great potential. Crabs have been successfully raised in one-quarter- and three-quarter-acre ponds in low salinity water (1 part per thousand) and fed a diet of fish.

In 2009, some of the pond-raised crabs were harvested for a taste test. A blind taste test panel was given two types of meat (lump and crab cake), made from pond-raised crabs or from wild-caught crabs. A vast majority of testers preferred the pond-raised crabs, further highlighting pond culture possibilities.

In 2010 and 2011, studies focused on harvesting techniques for pond culture. Early pond grow-out tests involved draining the ponds to harvest crabs. More recent studies have taken a different approach. Various types of traps including minnow, crawfish and crab traps have all been

Greg Crochet conducts daily harvest of peeler crabs from bushlines at the MDMR Lyman Fish Hatchery.

tested in the ponds. Another technique involves using bushlines to harvest peeler crabs. Bushlines are a type of modified trot line, with wax myrtle bushes attached instead of bait. Crabs that are close to molting will enter the bushes for protection. This technique has proven very effective at targeting peeler crabs for harvest.

Once harvested, the peeler crabs are placed into shedding tanks for molting. Data is collected on molt interval (time between molts) and molt increment (increase in size at each molt), as well as many other factors. With warm temperatures, cultured crabs can enter the soft-shell market in three months.

In 2010, the blue crab aquaculture group teamed up with McElroy's, a local seafood restaurant in Ocean Springs, for an advertised tasting of "appetizer" soft-shell crabs harvested from the MDMR ponds. The soft shell crabs were well received by all who attended.

Current research is focused on developing a bait industry for cultured blue crabs. Blue crabs are a common prey item for many fish and offer an additional bait option for recreational fishermen. Bait crabs have been introduced at fishing tournaments in previous years and have received positive feedback from fishermen. Research will focus on working with local fishermen to provide data on appropriate size of bait crabs, type of fish caught, and other important questions that will promote the development of a new bait option.



This blue crab reached legal market size just 22 days after stocking.

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Tidelands leases net more than \$9.7 million

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VISIT MDMR ONLINE
dmr.ms.gov



Director's Notes

Dr. William Walker

It's springtime in Mississippi and the cobia are running. Come summer, the migrating fish will have either moved

westward or settled offshore on Mississippi's artificial reefs and rigs, a favorite hot spot for saltwater fishermen. To preserve the habitats that have adapted and grown around rigs and other offshore structures, U.S. Rep. Steven Palazzo, R-Miss, introduced a bill last November, H.R. 3429, the Rigs to Reef Habitat Protection Act, to prevent rigs and other structures from being removed from the Gulf of Mexico without proper assessment that coral and marine habitats would not be adversely affected.

The Rigs to Reef program is critically important to Mississippi and to all Gulf of Mexico states. The sea floor of the Gulf of Mexico is fairly featureless, with little structure, and the strategic placement of oil and gas platforms both attracts recreationally and commercially important fish species and gives them the opportunity to remain there and 'raise a family.' We appreciate efforts by Congressman Palazzo and his colleagues to provide these essential habitats.

And equally encouraging, in the draft plan released for public input in December by the Deepwater Horizon Natural Resource Damage Assessment (NRDA) Trustees, two of the eight proposed projects are in Mississippi. The two proposed projects are: 1) The \$11 million Mississippi Oyster Cultch Restoration project, which would provide for 1,430 acres of cultch restoration, benefiting the oyster industry in the Mississippi Sound in Hancock and Harrison counties; and 2) the \$2.6 million Mississippi Artificial Reef Habitat project, which would provide 100 acres of nearshore artificial reefs in Hancock, Harrison and Jackson counties, benefiting inshore habitat and anglers who fish those areas.

The Deepwater Horizon Draft Phase I Early Restoration Plan and Environmental Assessment is the first in a series of plans to begin restoration of the Gulf of Mexico to compensate for natural resource injuries, including the loss of human use of Gulf resources, from the Deepwater Horizon Oil Spill.

William W. Walker
Executive Director



Activities of Marine Patrol officers working under the Joint Enforcement Agreement with NOAA

December 2011 – February 2012

Patrols	115
Contacts	490
Sea hours	336
Man-hours	1,673
State violations	18
Federal violations	1



MARINE PATROL CITATIONS
JANUARY 2012 – FEBRUARY 2012

Shrimp-0
Crab-3
Oyster-5
Live Bait-0
Net Fishing-0
Fishing-34
Miscellaneous Seafood-1
Boat and Water Safety-13
Marine Litter-0
Miscellaneous-7
TOTAL-63



★ AMERICA'S SEAFOOD ★

Seafood Marketing makes the rounds

The MDMR's Seafood Marketing team just returned from the 2012 American Culinary Federation Southeast Regional Conference held Feb. 20–22, in Winston-Salem, N.C. Seafood Marketing gave out 50 pounds of Mississippi Gulf Fresh Shrimp to more than 300 chefs and food-service professionals.

This spring is full of events showcasing Mississippi Gulf Fresh Seafood with stops to include Boston, Chicago, New York, Dallas and, of course, our very own Great Mississippi Seafood Cookoff in June.



The MDMR Seafood Marketing team, (left to right) Jason Rider and Irvin Jackson, at the 2011 Great Mississippi Seafood Cookoff. The event will be held this year in June.



The Mississippi Secretary of State's Office presented a tidelands check for \$9,707,662 to the Mississippi Department of Marine Resources (MDMR) on Dec. 1, 2011. Pictured are (from left to right): MDMR Executive Director Bill Walker, state Rep. Richard Bennett, state Sen. Tommy Gollott, state Rep. John Read, state Rep. Sonya Williams-Barnes, state Rep. Greg Haney, state Rep. Billy Broomfield, Mississippi Secretary of State Delbert Hosemann, state Rep. Timmy Ladner, state Rep. Randall Patterson, state Rep. Casey Eure, state Rep. Carolyn Crawford, state Rep. Charles Busby and state Rep. Sean Tindell.

Secretary of State returns more than \$9.7 million to Gulf Coast from tidelands leases and new assessment collections

Secretary of State Delbert Hosemann presented a check for \$9,707,662 to the Mississippi Department of Marine Resources (MDMR) at a ceremony held Dec. 1, 2011, at the Secretary of State's Office in Gulfport—the largest tidelands amount ever returned to the Gulf Coast to date.

“The tidelands check is a crucial component of preserving the culture of the Mississippi Gulf Coast,” said Hosemann. “The Mississippi State Legislature and the Secretary of State's Office are committed to maximizing the benefit of our state-owned lands and the preservation of our coastal areas. This \$9,707,662 is an integral part of ensuring that goal.”

“These tidelands funds are critical to the cities, counties, NGOs and others along the Mississippi Gulf Coast,” said MDMR Executive Director Bill Walker. “These funds provide for access projects that allow our citizens and visitors to better enjoy our marine resources and waters. These funds provide for research and academic programs that better inform our public about the value of our marine resources to the Gulf Coast and to Mississippi as a whole. These funds allow us in certain instances to provide indirect assistance to tourism and economic development, to directly assist in environmental conservation, and to leverage federal funds. The Mississippi Department of Marine Resources looks forward to working with the Secretary of State and the Mississippi Legislature to continue to use these funds to the betterment of the environment, economy, and quality of life along the Mississippi Gulf Coast.”

The tidelands lease revenue was collected on leases on the Mississippi Gulf Coast in the fiscal year that ended June 30, 2011. The tidelands assessment revenue is a result of House Bill 44, passed in the 2005 Fifth Extraordinary Session. That bill allowed land-based casinos on the Coast and required them to pay a tidelands assessment, which is based on a casino's capital investment.

As Secretary of State, Hosemann negotiates tidelands leases on behalf of the state. Traditionally, the Mississippi Legislature appropriates the lease revenue for specific projects. Rent is collected from tidelands leaseholders by the Secretary of State and then returned to the MDMR at the end of the fiscal year.

D'Iberville Middle School participates in the Environmental Stewardship Program by creating an art and butterfly garden center.



Environmental Stewardship Program engages students

Nine South Mississippi schools participated in this year's Mississippi Environmental Stewardship Program. Using funds from the U.S. Department of the Interior's Coastal Impact Assistance Program (CIAP), the MDMR provides grants to local schools for environmental projects that will encourage a spirit of stewardship and awareness of the environment among their students.

Each project involves at least 25 to 30 students. These projects are designed to

expose students to environmental concepts and activities such as saltwater aquariums, wetland restoration, growing fish, field trips, workshops, monitoring and research. Schools' partners in these projects include organizations such as the Master Gardeners of the Mississippi Gulf Coast, who assist students in choosing plants suitable for ponds, wetlands and other purposes; and military reservists, who help students with heavier work such as digging soil, building fish ponds and repairing

creeks. These activities promote a sense of responsibility for the environment and show students that there are things they can do to improve the environment.

The fiscal year 2012-2013, which begins in May, is currently accepting project proposals from all qualified schools in the three coastal counties. If interested, please contact the Seafood Technology Bureau at 228-374-5000 and ask for Jessica Rankin, Mai Dang or Ruth Posadas.

Hydrographic dye study conducted in St. Louis Bay



Red dye was released into Joe's Bayou to monitor the flow and dispersion of water into the St. Louis Bay to determine any potential impacts on nearby shellfish waters.

In mid-January, the Mississippi Department of Marine Resources' Shellfish Bureau teamed up with scientists from the U.S. Food and Drug Administration (FDA) and the Mississippi Department of Environmental Quality to conduct a hydrographic dye study around Mississippi's oyster-growing areas located near Pass Christian and Bay St. Louis.

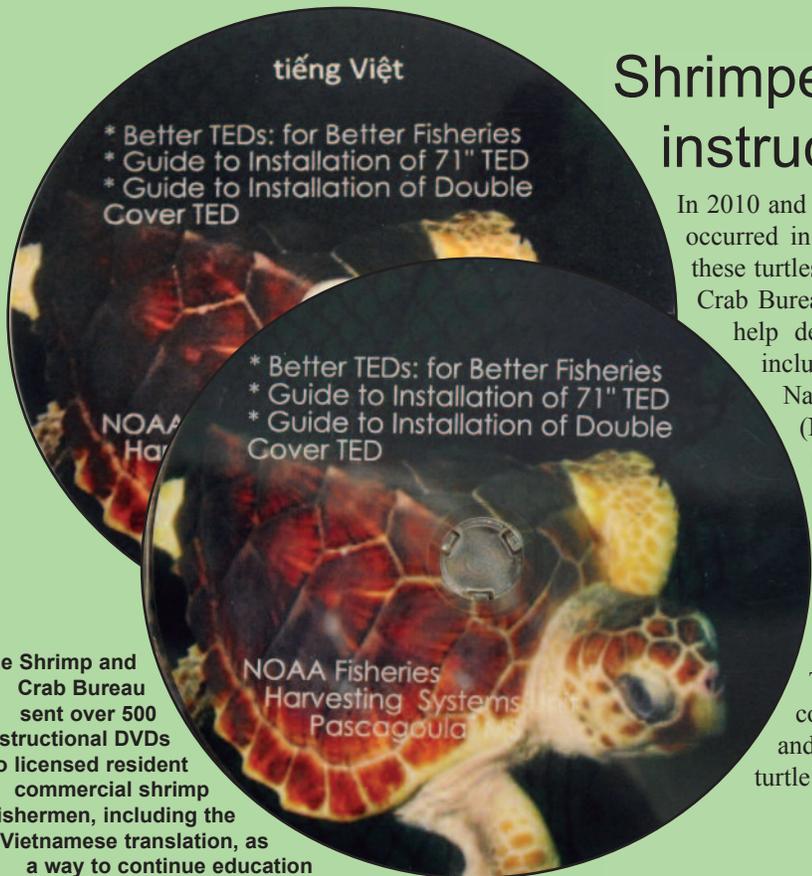
The purpose of the study was to find possible pollution sources that might affect the oyster growing areas. The study involved water sampling at locations along the beaches and in the bayous along Waveland, Bay St. Louis and Pass Christian. The teams also deployed hydrographic instruments along the St. Louis Bay to monitor for red dye that was released in Joe's Bayou at high tide. The purpose of the red dye deployment was to follow the route that the dye would take during the falling tide from areas of concern into the St. Louis Bay and adjacent waters of the Mississippi Sound.

The dye, Rhodamine WT, is not harmful to people or the ecosystem. However, because the dye is used to track the movement of water, it turns the affected water bright red.

The FDA will produce a report with dispersion maps from the study. Information from the January dye study will be used to determine any potential impacts on nearby shellfish waters.

Shrimpers receive TED instructional video

In 2010 and 2011, a large number of sea turtle strandings occurred in the northern Gulf of Mexico and many of these turtles were found in Mississippi. The Shrimp and Crab Bureau continues on-going proactive measures to help decrease fishery and sea turtle interactions, including the January 2012 mail distribution of the National Oceanic & Atmospheric Administration (NOAA) turtle excluder device (TED) instructional videos to all licensed resident commercial shrimp fishermen. This video, which MDMR had reproduced as well as translated for Vietnamese fishermen, shows the proper installation and use of TEDs in the northern Gulf of Mexico shrimp fishery. Mississippi shrimp fishermen have previously received TED gear and angle meters (to measure for correct TED installment) as part of the Shrimp and Crab Bureau's many efforts to address sea turtle strandings in Mississippi waters.



The Shrimp and Crab Bureau sent over 500 instructional DVDs to licensed resident commercial shrimp fishermen, including the Vietnamese translation, as a way to continue education in the fishing community.

Shrimp regulation updates may benefit South Mississippi

Two new proposed changes to federal shrimp regulations may benefit South Mississippi fisheries. In January and February, NOAA Fisheries Service accepted public comment on a pair of actions that would: a) certify two new bycatch reduction devices (BRDs), and b) relax restrictions regarding the level of allowable shrimp effort.

Up for comment were two new BRDs that represent changes to the existing Composite Panel BRD, which is provisionally certified through May 2012. Technical specifications for these new BRDs as well as the means for legal enforcement of these new rules are included in the NOAA proposal.

These two new versions of BRDs call for the addition of a SMP Composite Panel BRD, consisting of a square mesh panel, and the addition of a Cone Deflector Composite Panel BRD, made up of a "spooker" cone in the cod-end of the trawl behind the BRD. These two new BRDs are proposed additions to the list of allowable BRDs which have been required in shrimp trawls in the eastern Gulf of Mexico since 2004. Shrimpers will have until May 2012 to modify their BRDs to meet these new specifications.

A proposed relaxation of the allowable shrimp effort reduction threshold in the Gulf of Mexico is also being considered. Since 2008, existing regulations have required that shrimp effort in the 10-30 fathom depth zone be curtailed by 74 percent in reference to 2001-2003 levels.

The new proposed rule would adjust the shrimp effort reduction threshold to require a 67 percent reduction in effort in the 10-30 fathom depth zone in reference to the designated baseline years. The intended effect of this new regulation is to improve bycatch reduction in the shrimp fishery, provide greater flexibility to the industry, reduce the social and economic impact to fishing communities, and better meet the requirements of the Magnuson-Stevens Fishery Conservation and Management Act.

For information contact Steve.Branstetter@noaa.gov or 727-824-5305.

Shrimp Hotline: 866-WE-TRAWL / 866-938-7295

dmr.ms.gov gets a new look



Since the redesigned MDMR website launched in mid-January, it has seen a 10 percent increase in new visitors, with more than 13,000 visitors per month from more than 100 nations.

MDMR website's Top 5

Popular Pages

1. Inshore Reefs
2. Seasons
3. Licensing
4. Offshore Reefs
5. Recreational Fishing

Visitors' States

1. Mississippi
2. Texas
3. Louisiana
4. Alabama
5. Florida

Visitors' Countries

1. United States
2. India
3. Canada
4. United Kingdom
5. Philippines

The MDMR launched its newly redesigned website recently at www.dmr.ms.gov. Visitors to the site will now find improved navigation that allows fast access to popular content and highlights key programs.

New features include a plant life database that allows users to search local flora based on biological and physical characteristics, information on a variety of agency-sponsored events, contact forms for various departments, an RSS feed for news releases (which automatically updates new content to subscribers), and online registration for newsletters. There are also direct links to the Grand Bay National Estuarine Research Reserve and the Mississippi Gulf Coast National Heritage Area websites. Plans for future improvements include providing an online events calendar, developing dynamic seafood marketing content, and expanding the focus on eco-tourism.

MDMR's Information Technology Bureau worked with GodwinGroup, an ad agency in Jackson, Miss., to design a website that integrated a coastal aesthetic with scalable technology.

"We are excited to finally launch our new website," said Kimberly Denz, MDMR programmer analyst and redesign project manager. "Our internal steering committee and our visitors provided us with many great ideas and suggestions on how to improve the site, and we hope it results in an enhanced experience for our diverse group of users."

Currently, the website receives more than 13,000 visitors per month, from more than 100 nations. Users come to the MDMR website seeking information on topics such as licensing and regulations, fishing reefs, shrimp, oysters, crabs, boating safety, education materials, wetlands permitting, coastal preserve properties, and Mississippi wildflowers.

"It's been nearly 10 years since our website has been revamped," said MDMR's Public Relations Director, Lauren Thompson. "The redesigned website launched in mid-January and within a month our percentage of new visitors to the site had increased by 10 percent. The redesign team improved website navigation and we can better utilize our home page to highlight programs."

Lionfish invasion approaching Mississippi waters

The Gulf of Mexico is now home to the Indo-Pacific lionfish (*Pterois voltans*). This popular aquarium pet with a bold appearance and venomous “mane-like” spines first escaped into Florida’s Atlantic waters in 1992 as a result of Hurricane Andrew. In years since, these highly prolific super-predators have spread as far north as New York and as far south as Venezuela. Scientists now consider lionfish to be the first non-native fish species to establish successful breeding populations along the U.S. East Coast and Caribbean Sea.

In 2011, this invasion reached the Northern Gulf of Mexico. Lionfish have been recently sighted in Alabama, Louisiana and Texas waters. Fisheries biologists anticipate that it is only a matter of time before these fish are discovered off the coast of Mississippi as well.

These voracious top-carnivores are harmful because they consume up to 60 percent of their body weight every day and have few, if any, natural predators. Females can produce up to 2 million free-drifting eggs per year. These exotic invaders have been linked to drastically reduced reef fish populations in the Caribbean and are considered a significant threat to the ecology and economy of the Gulf Coast region.

MDMR’s Artificial Reef and Aquatic Invasive Species programs are working together with the National Park Service-Gulf Islands National Seashore, the U.S. Fish and Wildlife Service, Gulf States Marine Fisheries Commission and conservation officials from neighboring states to confront these “lions of the deep.”

Planned activities include development of an interagency strike force for early

detection and rapid response to new lionfish invasions as well as public outreach and education activities. While there is no technology that can completely stop this exotic invader, it is hoped that a proactive and coordinated approach will help reduce lionfish numbers and preserve our native fish populations.

The good news is that despite the venomous spines, lionfish fillets are a tasty and eco-friendly food. Diving and spear fishing round-ups, concluding with a freshly caught lionfish meal, are popular events in affected areas. A few restaurants in Florida even feature lionfish as a regular menu item.

Divers and fishermen should handle caught lionfish carefully by the head while wearing heavy gloves to prevent injury. Venom is only stored within the spine structure. The heat of cooking destroys any residual toxins. Lionfish stings can cause painful swelling and potentially be serious depending on the severity of the puncture and health status of the victim. Seek prompt medical attention to prevent secondary infection or other complications.

The MDMR encourages divers and fishermen to report any lionfish sightings in Mississippi waters. Please email location, observations and any photos to report.invasive@dmr.ms.gov or call 228-374-5000 to report by telephone.

Additional Information:

Animated Lionfish Distribution Map:
<http://nas.er.usgs.gov/taxgroup/fish/Lionfishanimation.gif>

Lionfish Identification and Medical Treatment Information:
<http://nas.er.usgs.gov/taxgroup/fish/lionfishmedicaltreatment.pdf>



INVASIVE LIONFISH
REPORT ALL SIGHTINGS WITH LOCATION
REPORT.INVASIVE@DMR.MS.GOV
(228) 374-5000



Boat & Water Safety Class Schedule

Boat and Water Safety Classes are free and open to all age groups!

To register, please call Marine Patrol at 228-523-4134. All classes are 8:30 a.m. to 4 p.m.

HARRISON COUNTY

Bolton State Office Building
1141 Bayview Avenue
Biloxi, Mississippi

April 21
May 5
June 2
July 7
August 4

JACKSON COUNTY

MGCCC Estuarine Education Center
Gautier, Mississippi

May 12
June 9
July 14

HANCOCK COUNTY

Mississippi Power Company
300 Highway 90
Bay St. Louis, Mississippi

May 19
June 16
July 21

Anyone born after June 30, 1980, must complete a boat and water safety course and have a Boating Certificate in their possession while operating a motorboat or personal watercraft on the waters of the State of Mississippi.

NERR Notes

Grand Bay National Estuarine Research Reserve



Don Abrams was successful at teaching Elizabeth Langner how to cast on a very windy and cold day at the NERR.

Hooked on saltwater fly fishing

The Grand Bay Reserve recently sponsored a beginners' saltwater fly fishing workshop entitled "Beyond the Pond—Saltwater Fly Fishing Basics" as part of its Adventure Quencher series of community workshops and adventures. This workshop was hosted by members of Historic Ocean Springs Saltwater Fly Fishing Club (HOSSFLY).

Fishers of all ages attended the workshop to see how they could get involved in this fast growing sport. The workshop was divided into indoor instructional and outdoor hands-on action sessions. Participants discovered that they can start fly fishing for a modest cost and they can also easily learn to tie their own flies. Instructors Don Abrams and Jeff Deuschele demonstrated the types of rods and lines that were best to use

for saltwater fly fishing. Past club president Mike Sharpe demonstrated how to tie a variety of flies. Although some saltwater flies are tied to resemble actual bait species such as shrimp, many of them are just designed to create a flash and to move in a certain way to catch the attention of the fish. There are even flies that look like conventional spoons. Many of the participants were amazed to learn that the fragile looking flies could often be used dozens of times before they had to be replaced.

Current club president, Mike Arguelles, brought his kayak and demonstrated how to rig a kayak for saltwater fly fishing and noted that wide open bays and bayous adjacent to salt marshes provide excellent opportunities for kayak fishing. An added bonus to kayak fishing in a wide bayou is that you can cast towards the

shore and there are no trees behind you to get snagged in.

When the club members were asked where and when the best place and time to go saltwater fly fishing was they all responded, "Any place or time that is good for conventional fishing is also good for fly fishing." You can fish from a boat, from the bank or wade fish. You can also fish at night without any special gear or flies.

Saltwater fly fishing is an excellent sport for everyone. Although it does take a while to master, you can start fishing after learning only a few basic casting movements. The youngest member of our class actually caught on quite quickly. Her father, Mark Langner, had this to say about the class, "A great thanks to the NERR and HOSSFLY for this wonderful experience. Not only myself but also my 10-year-old daughter and her friend loved the class. It definitely goes to show that it is never too early to get children involved in new outdoor activities. Fly fishing is a wonderful sport and bonding experience. We will definitely be back to the NERR for future seminars." To find out more about saltwater fly fishing in South Mississippi visit the HOSSFLY's website at www.hossfly.org or the website of the Mississippi Coast Fly Fishers at <http://mcflyfishers.org/index.html>.



Mark Woodrey, NERR research coordinator holds a Yellow Rail with a recently attached radio transmitter, prior to releasing it. Yellow Rails are one of the most secretive and poorly studied bird species in North America. Researchers from the NERR and Mississippi Sandhill Crane National Wildlife Refuge initiated a project this winter to study the habitat needs of Yellow Rails on their wintering grounds in Mississippi.



Boy Scout Nathan Davis (bottom left) and volunteers stand on the repaired boardwalk in Ansley.

New boardwalk built at Ansley

On November 12, 2011, local volunteers along with participants of the Mississippi Wildlife Federations' Habitat Stewards Program held a workday in Ansley on the Hancock County Marsh Coastal Preserve. The workday was organized by habitat steward Judy Reeves and consisted of cleaning up litter on site, treating and removing invasive species on the preserve, clearing a new birding trail on the west side of the parking area, and rebuilding a boardwalk that was damaged by arson. The boardwalk was repaired with a generous donation from Boy Scout Nathan Davis. Nathan is a member of Boy Scout Troop 301 of Gulfport. The 19 volunteers removed five bags of litter and established over one-third of a mile of birding trail during the workday.

Fire conducted on Wolf River preserve

The Mississippi Forestry Commission (MFC) and the MDMR successfully conducted a prescribed fire on 280 acres of the DeLisle Unit of the Wolf River Coastal Preserve. This preserve is located in western Harrison County, south of Interstate 10 and adjacent to Kiln-DeLisle Road.

The work was funded under a MFC hazard mitigation grant with the main objective of reducing the heavy fuel loads present on these public lands immediately adjacent to populated areas. Additionally, this prescribed fire will help to control invasive species infestations and to aid in overall habitat restoration efforts.

By using prescribed fire, managers can effectively decrease the risk of catastrophic wildfire, decrease the risk of hazardous falling trees and promote the healthy regeneration of native species that thrive in these fire-dependent habitats.

Mississippi Forestry Commission personnel use drip torches to ignite a prescribed fire on the DeLisle Unit of the Wolf River Coastal Preserve.



Seafood Safety Corner



Jeff Davis



Jessica Rankin

The MDMR's Seafood Technology Bureau (STB) is currently conducting its fourth-quarter inspections. During this quarter, inspectors determine if seafood facilities will be recertified. Facilities and their Hazard Analysis Critical Control Point (HACCP) records are inspected for possible incompliance to the program. In order for a seafood facility to be recertified, certain HACCP and sanitation requirements of the National Shellfish Sanitation Program (NSSP) must be met.

HACCP requirements include the following:

- A dealer shall have an acceptable HACCP Plan approved by the STB;
- No critical deficiencies;
- No more than two key deficiencies;
- Not more than two other deficiencies.

Sanitation requirements include the following:

- No critical deficiencies;
- No more than two key deficiencies;

c. No more than three other deficiencies.

The number of deficiencies allowed shall include carryover deficiencies from an approved existing compliance schedule and new deficiencies identified during the certification renewal inspection. The STB staff reminds all certified seafood dealers and processors to check their refrigeration units and verify that these are maintained properly. Certain foods must be maintained at proper temperatures to avoid bacterial contamination. Oysters are required to be maintained at 45 degrees Fahrenheit or below. In case a refrigeration unit malfunctions or breaks down, it is good practice to have a backup unit available to safely store food products.

STB Education and Outreach

The STB was busy during 2011 with its outreach efforts; staff attended 27 events across the Coast, reaching an estimated 350,000 people. In the past three years, the STB exceeded the target number of participants reached at public outreach events. The STB staff plans to attend more events in the future and distribute more seafood

safety information to the public and answer any questions they may have.

In 2012, the STB will continue to better its program and find unique and creative ways to reach the residents of the Coast.

In January, the STB staff and several volunteers from MDMR's Fisheries Office participated in the second annual Pass Christian Oyster Festival. The STB booth included a station where children and adults could decorate an oyster shell to help Coast residents remember the area's rich history of seafood production.

In February, the STB attended the Mississippi Coast History week at the Biloxi Community Center hosted by the Mississippi Coast Historical Society. The three-day event featured presenters from local historical societies. Several schools from around the area attended the event including Nativity BVM Elementary and Christian Collegiate Academy.

If you would like information about upcoming events or more information about the STB outreach program contact the Seafood Technology Bureau's Outreach Coordinator: Jessica Rankin at Jessica.rankin@dmr.ms.gov or by phone at 228-523-4095.

CZMA Update

The Mississippi Department of Marine Resources (MDMR), as Mississippi's federally approved state coastal zone management program, receives funding from the National Oceanic & Atmospheric Administration (NOAA) annually for Coastal Zone Management Act administration and enhancement of Mississippi's coastal resources. MDMR's Office of Coastal Ecology continues three projects under NOAA funding.

The final phase of the Public Access project has commenced and will provide final update data for the map and inventory (shown right), which will reside on MDMR's website.

The Coastal Hazards Mitigation project continues with its final phase, providing technical assistance to coastal communities in their flood planning.

A third project, initiated in November 2011, will assess and inventory the hardened shoreline of Mississippi's coast and develop an alternative shoreline management guideline to promote sustainable shoreline alternatives to bulkheads in Mississippi's coastal waterways. The project is scheduled to complete in 2013.

The screenshot shows the MDMR website interface. At the top, there are navigation tabs: DMR Information, Coastal Ecology, Coastal Management & Planning, Marine Fisheries, and Marine Patrol. Below this is the MDMR logo and a sidebar menu with options: Boating, Recreational Fishing, Commercial Fishing, Environment, Wildlife & Plants, Eco Tourism, and Education. The main content area features a 'Public Access' section with a 'Public Access Site Map' and a 'Public Access Inventory Phase II' section. The inventory section includes a description of the project, a 'Go Fishing!' button, a search bar, and a 'Read More' link.

To view the Public Access site map and inventory go to <http://www.dmr.ms.gov/recreational-fishing/public-access>.



Take a Bow

Recognizing employees' commitment to excellence

MDMR's Capitol Day 2012



Several MDMR employees made the yearly visit to the MDMR Capitol Day on Jan. 26, 2012. It's an opportunity for our state legislators to meet the MDMR representatives and to see each department's exhibit. The displays were set up on the State Capitol Building first floor of the Rotunda in downtown Jackson. Ali Leggett, MDMR's Coastal Resource Management Specialist, greets Larry Metzler with Clear Water Organic Farms located in Utica, Miss.

Volunteers judge science fairs



MDMR's Seafood Technology Manager Ruth Posadas, left, and another judge, were busy scoring exhibits at the Regional Science and Engineering Fair on Feb. 29.



MDMR judge, Rick Ranew, listens to a student explain his project at the Regional Science and Engineering Fair held in Biloxi.

Special thanks to all the MDMR's employees who judged the local science fairs. Included are: Jessica Rankin, Christine Murrell, Melanie Lane, Mai Dang, Ruth Posadas, Jeff Davis, Rick Ranew, Avia Huisman, Kristina Broussard and Brittany Chudzik. Participating schools are as follows: Magnolia Park Elementary, Harper McCaughan Elementary, St. James Elementary and Nativity BVM Elementary. Judges also participated in the Regional Science and Engineering Fair held Feb. 29 at the Mississippi Coast Convention Center in Biloxi.

Happy Anniversary!

These anniversaries mark employees' years of service with the MDMR. We thank them for their dedicated service to the management of our marine resources.

Doug Drieling	01/01/95	Will Underwood	02/08/09
Rita Duvernay	01/01/95	Willa Brantley	02/12/04
Kerry Endris	01/01/95	Rick Ranew	02/13/10
Rhonda Price	01/01/99	Jennifer Wittmann	02/15/06
Melanie Lane	01/01/00	Sandra Moore	02/18/08
R.T. May	01/01/00	Karen Carron	02/25/02
Jeff Payne	01/01/00	Jeff Davis	03/01/02
Jamie Herring	01/01/03	Janet Doucet	03/01/02
Baron O'Grady	01/01/07	Michael Strickland	03/04/11
Susan Perkins	01/01/08	Tom Doster	03/05/07
Jed Bullard	01/01/09	Evelyn Thompson	03/12/01
Diane Fisher	01/10/00	Dwayne Armes	03/14/11
Jan Boyd	01/15/98	Patrick Webb	03/15/04
Kimberly Cressman	01/24/11	Christy Royals	03/15/10
Wes Devers	01/29/01	Leo Christie	03/17/99
Ruth Posadas	01/29/01	Debbie Belk	03/25/02
Jeff Clark	02/01/99	Jimmy Sanders	03/26/01
Jeff Grant	02/01/06	Libby Denyer	03/27/10

Thanks!

to all who contributed to this issue of Coastal Markers:

Joe Jewell, Traci Floyd, Donnie Armes, David Rose, Joe Ziegler, Ali Leggett, Dave Ruple, Jeff Clark, Ruth Posadas, Jessica Rankin, Jeff Davis, Mike Walker, Sandra Moore, Christy Royals, Irvin Jackson, Dr. Fred Deegen, Amy Taylor, Mike Pursley, Patrick Levine, Scott Gordon, Jennifer Buchanan, Kimberly Denz, Jason Rider



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MDMR Calendar

April 17

Mississippi Commission on Marine Resources meeting, Bolton Building, 1141 Bayview Ave., Biloxi, 9 a.m.

April 22

36th annual Pass Christian Blessing of the Fleet, Pass Christian Harbor, 8 a.m.-3 p.m. Call 228-452-5128 for information.

May 5

Casting for Conservation kid's fishing rodeos. Waveland Garfield Ladner Pier, 8 a.m., contact Ernie Zimmerman, 228-493-0737. Gulfport Jones Park, 8 a.m., contact John Marquez, 228-223-8476.

May 12

Casting for Conservation kid's fishing rodeo, Pascagoula River Park, 8 a.m., contact F. J. Eicke, 228-806-1073.

May 15

Mississippi Commission on Marine Resources meeting, Bolton Building, 1141 Bayview Ave., Biloxi, 9 a.m.

June 2-3

83rd annual Blessing of the Fleet and Fais Do-Do, Biloxi Town Green and the Biloxi Channel, Saturday 10 a.m.-9 p.m. and Sunday 2 p.m. Call 228-435-6339 for information.

June 9

Pascagoula Blessing of the Fleet, River Park, 10 a.m., Call 228-218-7494 or 228-474-3450 for information.

June 19

Mississippi Commission on Marine Resources meeting, Bolton Building, 1141 Bayview Ave., Biloxi, 9 a.m.

Doc's Fishing Tip



Spring heralds the return of trout, redfish, flounder and Spanish mackerel to the beaches, providing nearshore wade and pier fishermen with plenty of action. A silver or gold casting spoon, like the Johnson Sprite, is an excellent choice for hooking up with any of these gamesters. And a successful way to fish this popular bait is to use what old-timers call Rudy's Lope retrieve. Popularized by long-time Chandeleur guide, Rudy Grigar, this technique is best mastered by holding the reel's crank handle steady while pumping the rod instead. The resulting undulating action of the spoon at the end of the line is deadly, especially on reds...

Until next time, good fishing! — Dr. Fred Deegen

Illustration: Joe Jewell

Mississippi Gulf Shrimp Kabobs

- Peeled uncooked Mississippi Gulf Shrimp—
as many as you need
- Herb and garlic marinade (30-minute marinade.)
- Mushrooms, one for each shrimp
- Bell peppers (I use red and yellow for color)
- One purple onion, cut into quarters

Marinate the shrimp and mushrooms for 30 minutes or more. Put on skewers and grill until shrimp are pink and vegetables are done. Use the leftover marinade to baste the kabobs.

Reprinted from MDMR's *Get Hooked on Mississippi Seafood Recipe Book*
Recipe by Linda St. Arnaud



To receive your Coastal Markers via e-mail,
contact lauren.thompson@dmr.ms.gov

