Sixty-Second Annual Report of the Gulf States Marine Fisheries Commission

For the Year 2011

The GULF STATES MARINE FISHERIES COMMISSION is an organization of the five states whose coastal waters are the Gulf of Mexico. This Compact, authorized under Public Law 81-66, was signed by the representatives of the Governors of the five Gulf States on July 16, 1949, at Mobile, Alabama. The Commission's principal objectives are the conservation, development, and full utilization of the fishery resources of the Gulf of Mexico to provide food, employment, income, and recreation to the people of these United States.

Gulf States Marine Fisheries Commission

Sixty-Second Annual Report
(2011)

to the
Congress of the United States
and to the
Governors and Legislators
of
Alabama, Florida, Louisiana, Mississippi, and Texas

Presented in compliance with the terms of the Compact and State Enabling Acts Creating such Commission and Public Law 66-81st Congress assenting thereto.

Edited by:

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Preserving the Past ▪ Planning the Future ▪ A Cooperative Effort

Charles H. Lyles Award

The *Charles H. Lyles Award* is awarded annually by the Gulf States Marine Fisheries Commission (GSMFC) to an individual, agency, or organization which has contributed to the betterment of the fisheries of the Gulf of Mexico through significant biological, industrial, legislative, enforcement, or administrative activities.

The recipient is selected by the full Commission from open nominations at the spring March meeting. The selection is by secret ballot with the highest number of votes being named the recipient. The recipient is awarded the honor at the annual meeting in October.

CHARLES H. LYLES
Award Recipients

Charles H. Lyles	1984
Theodore B. Ford	1985
J.Y. Christmas	1986
John Breaux	1987
John Ray Nelson	1988
I.B. "Buck" Byrd	1989
Hugh A. Swingle	1990
John A. Mehos	1991
J. Burton Angelle	1992
Louis A. Villanova	1993
Theodore H. Shepard	1994
Edwin A. Joyce, Jr.	1995
Tommy D. Candies	1996
Walter M. Tatum	1997
Thomas L. Heffernan	1998
Trent Lott	1999
James Barkuloo	2000
Walter Fondren, III	2001
Jerald K. Waller	2002
Andrew J. Kemmerer	2003
Hal Osburn	2004
Leroy Kiffe	2005
Robert P. Jones	2006
Wayne E. Swingle	2007
Ralph Rayburn	2008
W. "Corky" Perret	2009
Albert L. King, Sr.	2010
Virginia "Ginny" Vail	2011

Acknowledgements

In submitting this Sixty-Second Annual Report, the Commissioners wish to express their most sincere appreciation for the splendid cooperation of the Members of Congress and the Governors and Legislators of the Compact states. The Commission fully appreciates that such measure of success as has been attained in the past sixty years could not have been possible without such valued assistance. This acknowledgement is also extended to the directors and staffs of federal, state, and interstate agencies, and to representatives of all organizations and individuals who have contributed to the realization of the objectives of the Gulf States Marine Fisheries Commission.

Respectfully submitted,

Chris Blankenship, *Chairman*
Joe Gill, *Vice Chairman*
Joe Shepard, *Second Vice Chairman*
Larry B. Simpson, *Executive Director*

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Commission Roster

Commission Officers

Chairman: Mike Ray

First Vice Chairman: Chris Blankenship **Second Vice Chairman: Joe Gill, Jr.**

Commissioners

(order of listing – administrator, legislator, governor's appointee)

ALABAMA

N. Gunter Guy
Alabama Department of Conservation & Natural Resources
Montgomery, Alabama

TBA

Chris Nelson
Bon Secour Fisheries
Bon Secour, Alabama

FLORIDA

Nick Wiley, Executive Director
Florida Fish & Wildlife Fisheries Commission
Tallahassee, Florida

Thad Altman
Florida Senate
Melbourne, Florida

Stephen Greep
Alexander & Greep Insurance
Fort Lauderdale, Florida

LOUISIANA

Robert Barham, Secretary
Louisiana Department of Wildlife & Fisheries
Baton Rouge, Louisiana

Butch Gautreaux
Louisiana Senate
Morgan City, Louisiana

Campo "Camp" Matens
Baton Rouge, Louisiana

MISSISSIPPI

William Walker, Executive Director
Mississippi Department of Marine Resources
Biloxi, Mississippi

Tommy Gollott
Mississippi Senate
Biloxi, Mississippi

Joe Gill, Jr.
Joe Gill Consulting, LLC
Ocean Springs, Mississippi

TEXAS

Carter Smith, Executive Director
Texas Parks & Wildlife Department
Austin, Texas

Mike Jackson
Texas Senate
Austin, Texas

Troy Bello Williamson, II
Corpus Christi, Texas

Staff

Larry B. Simpson, *Executive Director*
David M. Donaldson, *Assistant Director*

Virginia K. Herring, Administrative Officer
Nancy K. Marcellus, Administrative Assistant
Cheryl R. Noble, Staff Assistant
Debora K. McIntyre, Staff Assistant
Alyce R. Catchot, Staff Assistant
Ashley P. Lott, Staff Assistant
Deanna L. Valentine, Data Entry Clerk
Alexander L. Miller, Program Coordinator
James R. Ballard, Program Coordinator
Adam B. McInnis, Senior Accountant
Steven J. VanderKooy, Program Coordinator
Jeffrey K. Rester, Program Coordinator
Ralph E. Hode, Program Coordinator
Gregory S. Bray, Programmer/Analyst
Robert W. Harris, Programmer/Analyst
Douglas J. Snyder, Survey Coordinator
Donna B. Bellais, Survey Coordinator
Joseph P. Ferrer, III, Systems Administrator
Lloyd W. Kirk, SEAMAP Database Programmer
Angela R. Rabideau, Staff Accountant

Active Committees

Executive Committee	Mike Ray Chris Blankenship Joe Gill, Jr.
Law Enforcement Committee	Walter Chataginer, Chairman
State-Federal Fisheries Management Committee	Mike Ray, Chairman
Menhaden Advisory Committee	Jerry Mambretti, Chairman
Commercial/Recreational Fisheries Advisory Panel	Philip Horn, Commercial Chairman Bob Fairbanks, Interim Recreational Chairman
Technical Coordinating Committee	Joseph Shepard, Chairman
TCC Artificial Reef Committee	Mike Meier, Chairman
TCC Crab Subcommittee	Ryan Gandy, Chairman
TCC Data Management Subcommittee	Chris Denson, Chairman
TCC Habitat Subcommittee	Ron Mezich, Chairman
TCC SEAMAP Subcommittee	Read Hendon, Chairman
TCC Outreach Subcommittee	James Ballard, Facilitator

GULF STATES MARINE FISHERIES COMMISSION
EXECUTIVE DIRECTOR'S REPORT

Larry B. Simpson, Executive Director

The Commission had a very active year in 2011. We are working to close out the work of the Emergency Disaster Programs (EDRP), the details of which are in the EDRP section of this report, after dispensing some $16,608,197 in 2011 and $114.2 million cumulatively through the end of 2011. This is broken down by category and state in Tables 2 and 4 of the EDRP section. I am truly pleased with the Commission's effort to assist fishermen, the environment, business and industry, and marine fisheries of this nation in the wake of the worst natural disaster in the history of this country. We are, once again, productive and thriving both recreationally and commercially. There have been changes in the numbers of people in the industry and the manner in which we use these marine resources, but we are viable and productive again.

Management continues to require and demand more and more detailed information upon which to make policy. Our data and interjurisdictional programs strive to even greater heights to provide this service. Consequently, I have for the last few years, brought the funding needs of these two programs to the attention of the funding committees of Congress in hopes they will assist us with our new initiatives and broader data collection needs.

I also have observed the marked ageing of the professional personnel in the states over the years. Now is the time for the younger movement of the profession to begin taking over the policy-setting for the Gulf that the future will be exposed to. Our cadre of younger folks is up to the task and I have every confidence that they will prove themselves in the common market place of ideas. Integrity, honesty, and ability will always carry the day for our natural resources that we are charged with protecting and using. It is my opinion that the new policy-makers I speak of will be dealing with many of the same issues we currently deal with as populations, habitat, and fishing pressures change.

I see on the horizon an issue that concerns me - the use of ground and surface water. Marine resources are highly sensitive to salinity regimes and changes caused by diversion or upstream use. Allocation and use will no doubt be a hotly contested issue in the years to come. We therefore must develop data collection systems that will give us the tools with which to properly manage marine resources in this new age of limited freshwater introduction. The Commission is properly placed and staffed to address these as well as other issues that affect marine resources of the Gulf of Mexico.

It seems the Gulf of Mexico has had too long a season of disasters to our fisheries which we have had to stand up and deal with. While winding up our hurricane disaster programs previously mentioned, the Deep Water Horizon oil disaster occurred. In addition, in the last year, the Gulf has had to endure one of the worst floods and droughts on record. These compounding events have taken their toll on our fisheries, scientists, and managing agencies - both State and Federal.

The Commission was once again utilized by Congress to handle a part of the oil disaster funding to address the near-term programs to help our marine resources and the industries which they rely on for their livelihood and help our nation which receives healthy protein from them. After extensive meetings with all parties, four important themes were identified for our work: marketing, certification, traceability, and testing. I am completely satisfied with our work so far which will be discussed in more detail later in this report. The marketing model which we developed is producing results that have the nation's attention. Others are imitating our model for organization and function. I said in another report that "imitation is the most sincere form of flattery". Others see how and what we do and emulate that. We are providing results with transparency and accountability. Our system works.

EMERGENCY DISASTER RECOVERY PROGRAM

Ralph E. Hode, Fisheries Disaster Program Coordinator

The Gulf States Marine Fisheries Commission established its Fisheries Disaster Recovery Program (EDRP) in 2006 in response to a marine fishery disaster declaration by then Secretary Carlos Gutierrez, US Department of Commerce. The declaration came following Hurricanes Katrina and Rita in 2005 which destroyed significant portions of the marine fishery industry and related habitat in the northern Gulf of Mexico. Fiscal support for the program, which is authorized by the Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265, as amended), came from Congress in the form of two supplemental appropriations. These included (1) an appropriation in 2006 in the amount of $127 million for resource recovery (EDRP I), and (2) an additional appropriation in 2007 in the amount of $85 million (EDRP II) for economic assistance to the recovering industry.

In 2010 an additional fisheries disaster declaration was made by Secretary Gary Locke, US Department of Commerce under President Barrack Obama. This declaration was in response to the explosion of the Deep Water Horizon oil drilling platform in the Gulf of Mexico approximately 50 miles south of the mouth of the Mississippi River in April.

> *"The April 20, 2010, explosion on the Deepwater Horizon rig led to more than 200 million gallons of oil being released into the Gulf. Eleven people working on the rig died in the explosion, while another 16 were injured.*
> *Besides the oil, hundreds of thousands of gallons of chemical dispersant went into the water as well. At the peak of the crisis, in June 2010, 37% of Gulf waters -- a total of 88,522 square miles -- were closed to fishing due to contamination." (Source CNN, April 22, 2011)*

In response, an additional Congressional appropriation was made in October, 2010 in the amount of $15 million for the Oil Disaster Recovery Program (ODRP). It provided for post-disaster fisheries recovery through opportunities to regain lost seafood markets, to create new markets, and to generally promote the assets and opportunities offered by the Gulf seafood industry. The intent of this program was to alter negative public perception of Gulf seafood following the oil disaster through expanded marketing programs and projects, development of seafood certification, and source trace options, as well as expanded testing of Gulf seafood products.

GSMFC coordinates the distribution and use of all three appropriations under its Fisheries Disaster Recovery program through grant agreements with NOAA Fisheries.

Resource Recovery – EDRP I

Uses of the EDRP I appropriation were approved based on damage assessments conducted by the Gulf States marine agencies, as well as, on NOAA findings following assessments by independent consultants working for NOAA Fisheries in the weeks and months following Hurricanes Katrina and Rita. Distributions of funds through GSMFC to the states were determined at the federal level based on prior year fisheries landings records for each state as well as damage from the storms incurred in the industry. In August 2006, GSMFC executed a total of 17 sub awards grant agreements with the five member states in the Gulf addressing the three areas of fisheries assistance approved by NOAA. These included oyster restoration, oyster and other shellfish habitat restoration, and cooperative research in the Gulf.

A summary of the current Gulf wide programmatic funding levels is included in Table 1.

Post-Katrina, EDRP spending across the Gulf slowed significantly during the 2011 recovery period even though some reductions were expected as the EDRP I program approached the

Table 1: EDRP I Funding and Current Spending Levels

Category	*Funded Amount*	*2011 Expenditures*	*Accumulative Spending*
Oyster Restoration Program	$49,146,312.00	$4,564,897.90	$46,101,611.48
Habitat Restoration Program	$29,808,975.00	$4,132,994.08	$25,519,249.31
Cooperative Research	$47,819,715.00	$2,830,089.54	$44,613,590.22

* As amended based on changing needs during the recovery process

final year of the original grant period. However, additional reductions were also seen as the States began to deal with the impacts of the Oil Disaster throughout the year and with the Mississippi River floods in the spring of 2011.

By the year's end, overall spending was only $11.5 million – by comparison 2010 ended with nearly $26.4 million having been reimbursed for work conducted during the year. The 2011 Oyster element, as indicated in Table 2, accounted for approximately 40% of the total spending during the year; followed by the Habitat element at nearly 36% and the Cooperative Research element at 25%.

Accumulative spending summaries (Table 1) imply that all three programs ended the 2011 year with unspent fund balances ranging between $3 and $4.3 million, with a combined fund balance $12.5 million. Because of the delayed progress seen in 2008 *(Hurricanes Gustav and Ike and the opening of the Bonnet Carre' Spillway),* 2010 *(DWH Oil Disaster)*, and 2011*(continued oil disaster recovery and the opening of both the BonnetCarre' and the Morganza spillways*), GSMFC requested and received a no- cost grant extension until August 31, 2012.

In spite of these delays, progress was seen, albeit to a limited extent, in nearly all of the EDRP I elements in 2011:

The Oyster Element saw cultch plants in both Florida and Mississippi; continued research and growth of triploids oysters at the Native Stock Hatchery and continued progress in the development of a lease holder data management system in Louisiana; oyster relays and additional cultch plants were seen in Alabama; and sonar mapping of oyster habitat continued in Texas.

The Habitat Element in Texas saw additional delays in 2011 because of red tide conditions in the Galveston Bay region, forcing the State to monitor oyster growth until conditions righted themselves for further oyster work. Other progress reported included wave attenuation and shoreline

Table 2: Expenditures by Category 2011 – EDRP I

State	*Oyster Recovery*	*Shrimp and Shellfish Recovery*	*Cooperative Research*	*Total*
Florida	575,670.92	115,443.94		691,114.40
Alabama	1,277,353.92	563,638.87	895,303.27	2,736,295.86
Mississippi	2,028,327.91	1,534,296.28	936,830.96	4,526,455.15
Louisiana	424,678.77	1,919,615.22	1,045,138.34	3,389,432.33
Texas	258,866.81	0	0	258,866.81
Total 2011 Expenditures (% of total)	4,564,897.90 (39.60%)	4,132,994.08 (35.85%)	2,830,089.54 (24.55%)	$11,527,981.52

stabilization efforts in Louisiana; aquatic invasive species monitoring, education and outreach; working with sister agencies in continued monitoring and restoration/rehabilitation of protected and endangered species in Mississippi; shoreline stabilization projects in Alabama; and commercial lease restoration efforts in Florida.

The Cooperative Research Element in Texas was closed out and fund balances transferred to the oyster restoration and habitat restoration component. In Louisiana, the state continued with an analysis of commercial trip tickets, independent sampling in Lake Pontchartrain, inventory and analysis of coastal marinas and boat launches, and, providing assistance for commercial menhaden bait industries. Mississippi continued to monitor newly created offshore and inshore artificial fishing reefs, and to support the Gulf Coast Research Laboratory in a finfish spawning and stock rearing program. In Alabama, the ALDCNR continued to support the Dauphin Island Sea lab in its Fisheries Oceanography of Coastal Alabama (FOCAL) study – an evaluation of nearshore and shelf environs as they relate to fisheries production in state waters. The Florida Cooperative Research element involved development of an oyster larval model in the Pensacola Bay system based on similar models in the Chesapeake area. While there were no reimbursements on this element during the year, the Department continued to work with contractors to finalize hydrologic modeling for the Bay in order to complete the final components of the study.

Economic Assistance Progress and Spending – EDRP II

The second Congressional supplemental appropriation for the Gulf fisheries disaster of 2005 was approved in September 2007 in the amount of $84,915,000. It was directed towards economic assistance to the Gulf fishing industry to restore and shore up the industry during its recovery period.

Under this program, economic assistance was made available to shrimpers who were compliant with bycatch reduction regulations including use of turtle excluder devices (TEDs); to fishery related businesses and industries that received damages or losses beyond that which was covered by insurance or other forms of assistance; to individual fishermen who were impacted through the loss of markets, equipment, and infrastructure services; and for seafood testing and promotion of Gulf-caught seafood products.

Most of the reimbursements though 2011 continue to reflect the efforts of Alabama, Mississippi, and Louisiana where the majority of the economic

Table 3: Planned Utilization of Funding - EDRP II 2011

State	*Economic Assistance for Fishermen*	*Assistance for Commercial Businesses & Industry*	*Additional Assistance for TED/BRD Compliance*	*Domestic Product Marketing and Seafood Testing*	*State Totals*
Louisiana*	39,153,631.00		825,460.00	1,293,909.00	41,273,000.00
Texas	1,173,000.00		27,000.00		1,200,000.00
Florida	460,000.00	1,500,000.00	40,000.00		2,000,000.00
Mississippi**	6,440,000.00	10,788,622.00	650,000.00	7,121,378.00	25,000,000.00
Alabama	3,895,062.00	10,804,938.00	300,000.00		15,000,000.00
Total	**49,948,693.00**	**24,266,555.00**	**1,842,460.00**	**8,415,287.00**	84,473,000.00
Percentage	60%	28.7%	2.2%	9.9%	

Source: Final Sub-award agreements, as amended, for each of the five Gulf States as approved by NOAA and on file in the GSMFC Administrator's office.
Louisiana's **Economic Assistance for Fishermen program combines assistance to Business and Industry as well as the TED/BRD component. The latter has been isolated in order to track grant condition compliance.*
***Mississippi's **Domestic Product Marketing** (amended) program includes $6,471,380 for Testing and $650,000 for domestic product marketing;*

losses were found and where most of the funds were programmed. As indicated in Table 3, 60 % of planned spending was programmed for assistance to fishermen; and 31% was for assistance to marine-related businesses and industry. The combined budgets for these two categories account for 87.9% of the total award to the five Gulf States and the balance is programmed for additional assistance to TED/BRD compliant fishermen and for seafood marketing and testing.

Overall spending in 2011 was slightly over $5.0 million which was approximately half of the $9.8 million spent in 2010. However, minimal spending in 2011 was anticipated because most spending under this sub award was planned to be used during the early part of the grant period in order to provide quick relief to its fishermen and businesses. Ninety percent 90.6% of the Assistance for Commercial Fishermen budget, 92% of the Assistance for Business and Industry budget, and 100% of the TED/BRD budgets had been utilized prior to 2011. Approximately 66% of the combined sub awards for seafood testing and domestic product marketing remained at the end of the 2011 year. Of this approximately $2 million is being used for continued seafood testing and support of the Gulf of Mexico Alliance in the Mississippi programs; while nearly $1 million in the Louisiana Domestic Marketing program.

Both the EDRP I and the EDRP II programs were impacted by the DWH disaster in the latter part of 2010, carrying over into 2011, and causing delays in planned work projects and program. As a result, a no-cost grant extension for the overall program is expected to be requested in 2012 in order to allow additional time to complete planned work elements.

Table 4: Expenditures by Category - EDRP II 2011

State	*Assistance to Business and Industry*	*Assistance to Commercial Fishermen*	*Domestic Product Marketing*	*TEDs and BRDs Compliance*	*Seafood Testing*	*Totals*
Florida	36,231.44	100,299.33		0		136,503
Alabama	499,171.73	324,636.84		0		823,809
Mississippi	1,881,988.92	130,687.78	101,602.12	0	1,246,732.25	3,361,011
Louisiana		537,968.91	123,412.74	0		661,381
Texas	97,483.79			0		97,484
Total	2,514,875.88	1,093,592.86	225,014.86	0	1,246,732.25	5,080,215

OIL DISASTER RECOVERY PROGRAM (ODRP)

Ralph E. Hode, Fisheries Disaster Program Coordinator

History was made in the Gulf of Mexico in April 2010 when the British Petroleum oil drilling rig Deep Water Horizon exploded approximately 50 miles south of the mouth of the Mississippi River, resulting in the indefinite closure of much of the waters in the Gulf to all fishing activity.

> *"The April 20, 2010, explosion on the Deepwater Horizon rig led to more than 200 million gallons of oil being released into the Gulf. Eleven people working on the rig died in the explosion, while another 16 were injured.*
> *Besides the oil, hundreds of thousands of gallons of chemical dispersant went into the water as well. At the peak of the crisis, in June 2010, 37% of Gulf waters -- a total of 88,522 square miles -- were closed to fishing due to contamination." (Source CNN, April 22, 2011)*

The explosion and resulting discharge of oil in the Gulf was subsequently called one of the worst manmade environmental catastrophes in the history of the Country.

In response, Secretary of Commerce, Gary Locke declared fisheries failures in Florida, Alabama, Mississippi, and Louisiana, creating an opportunity under section 312 of the Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265, as amended) for Congress to appropriate funding that would aid in the post oil disaster fisheries recovery effort. As a result of the declaration, the Appropriations Bill of the 111th Congress in 2010 included an oil disaster supplemental appropriation amounting to $15 million for use in the Gulf for fisheries assistance. These funds were directed through NOAA Fisheries to the Gulf States Marine Fisheries Commission for administration and coordination through a cooperative agreement. The intent of the program was to address negative public perception of Gulf seafood following the oil disaster – anticipating a recapture of lost markets and instilling new confidence in seafood coming from the Gulf.

By the end of 2011, with guidance and oversight of an Ad Hoc committee composed of the State Marine Directors, GSMFC had executed 12 independent contracts covering three separate elements of a Gulf wide marketing initiative. These elements include marketing, product source traceability and sustainability certification, and seafood testing.

The Marketing Element

Seven contracts are currently in place to promote Gulf seafood products under this element of the ODRP. These cover Public Relations and Advertising elements, Culinary Events, and Web based Marketing opportunities.

Public Relations and Regional Marketing Component

The Public Relations and Regional Marketing element is being facilitated under a contract with the Gulf and South Atlantic Fisheries Foundation through which a Gulf-wide marketing coalition composed of a broad cross section of State marketing specialists and industry representatives has been established. Early in 2011 the Coalition adopted regional goals and objectives, established by-laws and operational procedures, conducted marketing perception studies that set the stage for decisions regarding marketing strategies, and engaged the services of professional public relations and advertising firms with individually unique experiences that are expected to lend themselves to multi-faceted approaches to marketing products from the Gulf.

Among other early actions, the Coalition also approved a Gulf seafood logo to be used as a tagline in all advertising campaigns, programs and projects. Additionally, a regionally focused video was developed to tell the story of post DWH conditions and opportunities in the Gulf and a Gulf Marketing Coalition web page was developed

www.eatgulfseafood.com to meet contemporary needs for social interface for marketing, opinion surveys, and to meet other promotional needs as determined necessary. Concurrently, a marketing perception crisis management program was developed to provide a mechanism for uniform response to perceived crisis and negative media coverage regarding the quality of Gulf seafood. Administrative personnel and Coalition members participated in culinary events, and TV shows, throughout the year, and the Coalition was a sponsor in the Smithsonian's Museum of Natural History, "Demystifying Seafood" event, which focused on the Gulf one year after the oil spill. The event was held in June 2011 at the recently opened Saint Ocean Hall.

Culinary Events Component

Also part of the overall ODRP marketing initiative is a contract/sub-award agreement with the Louisiana Wildlife and Fisheries Foundation to provide support of annual culinary events that promote Gulf products. These include a culinary event held in association with an annual Washington meeting of the Gulf Oyster Industry Council and support for the Louisiana Seafood Marketing Board's "Great American Seafood Cook-off" which is conducted annually in New Orleans.

Web-Based Marketing Component

Contracts are also in place under the ODRP marketing initiative with Sea Grant agencies and/or divisions of the State Extension Services across the Gulf for development and outreach services for web based marketing opportunities in each of the five Gulf States. The "Market Maker" program, sponsored and maintained by the University of Illinois, is a business to business web based service which provides these opportunities. Under the Market Maker program individual seafood businesses in the Gulf are provided the opportunity to promote their respective products, provide pertinent contact information, interact with buyers from across the country, and tell individual stories about their businesses – all via individual unique web pages.

The combined budget for contracts that are currently in place under the Marketing Element amounts to nearly $6.7 million, with nearly $1.3 million having been reimbursed through 2011.

Product Source Traceability and Sustainability Certification Element

GSMFC currently has three prime contracts in place under this element and an additional three sub-prime contracts or amendments that expand the original scope of work to better address tracking of gulf products along the chain from the harvester to the consumer. All contracts and amendments were executed with oversight from the Ad Hoc Advisory Board. While each serves a useful purpose as stand- alone work components, they all serve to complement ongoing product marketing and promotion efforts. These components cover current and past sustainability certification efforts in the Gulf, development of a product trace component, and an outreach component which is necessary to promote further confidence in Gulf products.

Current And Past Sustainability Certification Component

A contract was executed early in 2011 with MRAG of the Americas for an evaluation of past and current efforts aimed at certifications that would qualify Gulf product under the Marine Stewardship Council (MSC) and Food and Agriculture Organization of the United Nations (FAO) standards for eco labeling purposes. Eco labeling was desirable because it expanded marketing capabilities over non labeled products. This contract was completed and a final report presented the Ad Hoc Committee in July. Options defined in the study remain under consideration by the Committee.

Gulf Product Trace Component

GSMFC also executed a contract with Trace Register, Inc. for the development of an electronic product traceability program that would improve

the ability of seafood buyers, processors, and distributors, as well as state and federal agencies and the consumer, to electronically determine the source of Gulf seafood products through the use of QPR or bar codes. The program was introduced nationally at the Boston Seafood Show in March 2012, but was effectively in place at the end of 2011. It is a volunteer program, the cost of which is paid for by the ODRP through 2014. By the end of 2011 between 12 and 16 of the leading processors and/or distributors in the Gulf had signed agreements for participation.

For demonstration purposes, a portion of the early participants were provided a Trace Marketing Module by which detailed information about the company or their products could be displayed at the product source inquiry level – essentially telling their stories. The Trace contract was later amended to allow up to 200 participants to utilize the marketing module. Procedures that would periodically evaluate the data being provided for reliability assurances were included in the contract, as were mechanisms to correct errors or to exclude participants or products not originating in the Gulf.

A second amendment to the trace component was approved by the Ad Hoc Committee to authorize a pilot project which complements the ongoing trace component in the oyster industry. The intent of the project was to develop a QPR/Bar Code sensitive electronic oyster tagging system which would replace the existing paper tagging system and include critical temperature information – a requirement recently imposed by the FDA for food safety purposes. The pilot was completed in late 2011 and presented to the Ad Hoc committee in early 2012. A phase II component is expected to be considered in 2012 which would install the electronic tagging pilot for a limited number of Gulf oyster processors in order to test the system in both large and smaller industries.

Trace Outreach Component

Because the electronic seafood trace concept is new to the Gulf, the Ad Hoc Committee determined that there was a need for an outreach program which could work with the seafood industry in the Gulf to introduce the concept, solicit participation, and provide technical support for the use of the program. As a result, a contract was executed with GCR, Inc. in September 2011 to work with GSMFC staff in the development of strategies and projects that explain, promote, and support the Trace initiative. The contract was amended late in 2011 to include the production of a Gulf Trace video which explains the Gulf Trace program and its benefits in an appealing format, featuring local fishermen, processors and other industry leaders.

By the end of 2011, the outreach effort had resulted in the creation of a Trace website www.gulfseafoodtrace.org , which provides a continuing source of related news and information about the Gulf Trace program. Concurrently, a Gulf Trace logo was developed, as well as media materials, that can be used in conjunction with participant registration, and information packets for a variety of meeting and trace marketing activities.

GULF SEAFOOD TRACE

GCR was instrumental in facilitating the roll out of the Gulf Trace program during the Boston Seafood Show at the March meeting of the Ad Hoc Advisory Committee. Outreach and participant registration efforts as well as related program promotion will continue with the aid and assistance of GCR through 2014.

The combined budget for contracts that are currently in place under the Product Source Traceability and Sustainability Certification Element amounts to nearly $2.5 million; with nearly $840,000 having been reimbursed through 2011.

Seafood Testing Element

The seafood testing component was established by the AD Hoc Committee early in the ODRP program to promote ready access to qualified laboratories and personnel for testing of Gulf seafood samples in the aftermath of the DWH disaster. The intent

of this component was to position member states to continuously monitor products from the Gulf for the presence of oil related contaminants and to be able to make real time/near real time decisions regarding harvests and consumption of Gulf seafood.

All five of the Gulf States were given the opportunity to purchase approved testing equipment and supplies and to provide training under this component of the ODRP. Because most states were already positioned to conduct the necessary tests, only the Mississippi State Chemical Lab (MSCL) and the Alabama Department of Public Health, Bureau of Clinical Laboratories (ADPH BCL) opted to participate in this component. Contracts were executed for them in early 2011.

In 2011, the MSCL acquired its approved equipment and provided requisite staff training. A total of 385 samples were analyzed through the end of the year. None of the Gulf samples analyzed were found to contain PHA or dispersant levels above the acceptable limits established by the FDA.

The combined budget for contracts that are currently in place under the Seafood Testing Element amounts to nearly $538,359, with nearly $349,000 having been reimbursed through 2011.

STOCK ASSESSMENT ENHANCEMENT PROGRAM (SAE)

David M. Donaldson, GSMFC Assistant Director

The Stock Assessment Enhancement Program (SAE) was created in response to the BP Deepwater Horizon disaster. Congress allocated $10M to conduct an expanded stock assessment of the fisheries of the Gulf of Mexico. Such expanded stock assessment shall include an assessment of the commercial and recreational catch and biological sampling, observer programs, data management and processing activities, the conduct of assessments, and follow-up evaluations of such fisheries. The funds were appropriated to the Commission via a cooperative agreement in October 2010. In 2011, the funds were allocated to three activities: operation of state trip ticket operations, collection of menhaden data, and expansion of fishery-independent sampling in the Gulf of Mexico.

Trip Ticket Program Development, Implementation and Operation

This task provided for the full operation of Texas, Louisiana, Alabama, and Florida trip ticket programs, activity under the ComFIN. This task provided for collection of components for a commercial trip ticket system to census the commercial fisheries landings using the data elements and standards developed by the ComFIN. It will ultimately be combined with other commercial fisheries data collected from around the Gulf of Mexico. Mississippi is currently the only state that does not have a fully-implemented system. Mississippi was still attempting to pass legislation that would make it easier to collect data from dealers, but is continuing to collect trip-level data for the oyster, bait shrimp and finfish fisheries. In addition, it provided funding to contract for implementation and operation of electronic reporting for the trip ticket systems as well as reporting of data for the quota monitoring and IFQ programs. For 2011, there were 601 commercial dealers and processors utilizing this program. This is a long-term data collection activity.

Menhaden Data Collection Activities

This task provided for sampling of gulf menhaden catches from menhaden purse-seine vessels that operate in Louisiana. The samples were processed for size and age composition for use in coast-wide stock assessments. In turn, gulf menhaden stock assessments are incorporated into the Fisheries Management Plan for the species, and are also utilized by the Gulf Coast states, the GSMFC, the menhaden industry, and the NMFS. This is a long-term data collection activity.

Expansion of Fishery Independent Sampling

This task provided for the operation of bottom longline and vertical line surveys in the Gulf of Mexico. The GSMFC contracted with six commercial fishing vessels to conduct a fishery independent survey along the Gulf of Mexico continental shelf from Brownsville, Texas to the Florida Keys using bottom longlines and vertical lines (bandit reel gear). The survey was conducted from April 1 through October 31, 2011. Sampling occurred for up to 12 hours each day. Two of the bottom longline fishing vessels fished simultaneously with the two bandit fishing vessels outfitted with the side scan sonars. The bandit fishing vessel then transected over the bottom longline using the side scan sonar. If relief or hard bottom is observed with the side scan it was be noted. There were 822 sea days included in this survey where 1,171 stations were sampled with longline gear and 1,939 stations were sampled with bandit gear (will 5,817 reel drops). The side scan gear surveyed 67 grids for a total of 207 transects and identified 613 reef/non-reef stations. There were numerous fish captured during the survey including 11,454 finfish and sharks collected with longline gear and 3,872 finfish and sharks collected with bandit gear. In addition, 5,153 otoliths, 1,726 gonads, 3,464 fin clips, and 702 whole fish/sharks were collected during the survey.

SPORT FISH RESTORATION ADMINISTRATION PROGRAM

James R. Ballard, Program Coordinator

The Gulf States Marine Fisheries Commission (GSMFC) provided administrative support for the "Sport Fish Restoration Administrative Program," FWS Grant Agreement No. GS-96-Segment 14. The GSMFC furnished services, qualified personnel, materials, equipment, and facilities as needed to perform required duties.

During the period covered by this report, the Program Coordinator attended meetings and participated in planning and development activities pertinent to carrying out responsibilities of this Grant Agreement. The GSMFC arranged and paid expenses for appropriate personnel to attend and participate in selected activities. Minutes, general correspondence, meeting notices, agendas, and other required materials were prepared and distributed to the appropriate persons. Persons authorized to travel have been reimbursed. A brief report on program progress follows.

Artificial Reef Activities

General Coordination

The Program Coordinator continues to provide general coordination for the Technical Coordinating Committee's (TCC) Artificial Reef Subcommittee and to facilitate work between the TCC Artificial Reef Subcommittee and the Atlantic States Marine Fisheries Commission's (ASMFC) Artificial Reef Subcommittee. This coordination provides the opportunity to address issues of national scope and importance, such as drafting the National Artificial Reef Plan and developing a partnership with the Department of the Navy and the Maritime Administration for the distribution of decommissioned ships for artificial reef development.

Gulf-Wide Artificial Reef Monitoring Program

To continue the effort of establishing a Gulf-wide Artificial Reef monitoring program, the Artificial Reef Subcommittee held a Reef Monitoring Workshop at the GSMFC 62nd Annual Meeting. The goal of this workshop was to get a clear picture of how to set up a monitoring program for artificial reefs that will generate the most useful data that is comparable to that collected in the ongoing efforts on natural reef areas. The hurricanes in the Gulf over the last several years and last year's oil spill disaster have underlined the fact that we need to establish baseline data on the vast artificial reef areas in the Gulf of Mexico. This data will allow states to determine how new artificial reefs in the future are functioning in comparison to established ones and how they compare to the function of natural reefs. It will also allow them to assess impacts to artificial reefs from future natural and man-made disasters.

The first half of the workshop consisted of presentations covering the ongoing reef monitoring efforts of NOAA, Dauphin Island Sea Lab, Florida Fish and Wildlife Research Institute, and the University of Texas Brownsville. Following the presentations there was a question and answer session where the Artificial Reef Subcommittee and attendees were able to ask about how to set up a Gulf-wide artificial reef monitoring program. The Subcommittee will take the information they gleaned from this workshop and develop a draft monitoring protocol for artificial reef sites in the Gulf of Mexico.

Artificial Reef Website and Bibliography Database Activities

The Program Coordinator updated the content of the artificial reef website that is housed on the GSMFC's website. He also added new artificial reef journal articles to the "Reef Compiled Data" bibliography database that is accessible from the GSMFC website.

Habitat Activities

The Program Coordinator supported and participated in the meetings of the TCC Habitat Subcommittee. This Subcommittee has currently been working on the development of a GSMFC Best Management Practices for inshore artificial reefs

with help from the Artificial Reef Subcommittee. After a review from the TCC, it was decided that the document would be sent back to the Artificial Reef Subcommittee for their recommendations on how to move it forward. The Artificial Reef Subcommittee will try to create a revised draft document that both subcommittees can agree on to address the concerns of the Habitat Subcommittee that initiated the creation of the original draft BMP's document.

Fisheries Outreach Activities

In an attempt to work more cooperatively, the TCC Fisheries Outreach Subcommittee held their meeting in conjunction with the Gulf of Mexico Fishery Management Council's Outreach and Education Advisory Panel's meeting on January 12-13, 2011 in Tampa, Florida. The two groups found a real benefit to this cooperation and expressed an interest in continuing the effort. During the TCC Subcommittee's portion of the meeting, each member state/agency gave an update on their outreach activities. During this part of the meeting, the real benefit of this new subcommittee became apparent, since the first meeting of this group in March of 2010, three new outreach efforts have been started in Gulf states by borrowing ideas that other states presented at the first meeting.

The Program Coordinator held a conference call with the Fisheries Outreach Subcommittee to scope the usefulness of social media as an outreach tool. At this point, all but one of the state fisheries agencies in the Gulf use social media as an outreach tool. This outreach mechanism is also used by the GMFMC, USFWS, NOAA, and several other state and federal agencies and organizations. All of the subcommittee members stated that they have found social media to be very helpful for disseminating information about their agencies and keeping the public informed about regulation changes and upcoming events. They also stated that they are getting good feedback from members of the public, and the sites are facilitating good discussions on some topics that don't normally get addressed. Based on the information provided by the subcommittee, the GSMFC's TCC made a recommendation for the Program Coordinator to establish a social media presence for the GSMFC. The Coordinator has moved forward with this effort and set up a Facebook page for the Commission.

Invasive Species Activities

The Program Coordinator continues to work in conjunction with the National Aquatic Nuisance Species Task Force (ANSTF) to determine appropriate actions and roles for the GSMFC and its member states in addressing invasive species issues. In addition, the GSMFC provides administration for and participates in the Gulf and South Atlantic Regional Panel on Aquatic Invasive Species (GSARP). During this reporting period, the Program Coordinator arranged meetings of the GSARP, its associated work groups, and its steering committee.

The GSMFC continues to host the GSARP's website. The website address is http://www.gsarp.org. It can also be accessed by going to www.gsmfc.org and clicking on "Aquatic Invasive Species Program" in the description of the Sport Fish Restoration Administration Program. During 2011, the Program Coordinator worked with the GSARP's Information Management Work Group to update the content of this website.

Associated Meetings

1/2011	Fisheries Outreach Subcommittee Meeting
2/2011	28th Annual Morone Workshop
3/2011	Joint GSMFC's and ASMFC's Artificial Reef Subcommittees Meeting
3/2011	TCC Habitat Subcommittee Meeting
3/2011	Gulf States Marine Fisheries Commission Annual Spring Meeting
4/2011	Gulf and South Atlantic Regional Panel on Aquatic Invasive Species Meeting
5/2011	Mississippi River Basin Panel Meeting
5/2011	National Aquatic Nuisance Species TaskForce Meeting
8/2011	Gulf Coast Ecosystem Restoration Task Force Meeting
9/2011	National American Fisheries Society Meeting
10/2011	Reef Fish Stock Assessment Enhancement Workshop
10/2011	Gulf States Marine Fisheries Commission Annual Fall Meeting
10/2011	Artificial Reef Monitoring Workshop

ADMINISTRATION OF THE GULF AND SOUTH ATLANTIC REGIONAL PANEL ON AQUATIC INVASIVE SPECIES

James R. Ballard, Program Coordinator

The Gulf and South Atlantic Regional Panel on Aquatic Invasive Species (GSARP) met twice during 2011. The first meeting was held April 12-13 in Charleston, South Carolina, and the second was held October 4-5 in Austin, Texas.

During the period covered by this report, the Program Coordinator attended meetings and participated in planning and development activities necessary to meet the needs and goals of the Panel. The Program Coordinator, through the Gulf States Marine Fisheries Commission (GSMFC), arranged and paid expenses for appropriate personnel to attend and participate in selected activities. Minutes, general correspondence, meeting notices, agendas, and other required materials were prepared and distributed to the appropriate persons.

Administrative Support for the GSARP

The GSMFC provided staff to maintain a full and active membership on the GSARP. The staff facilitated communication among Panel members, planned and coordinated meetings of the GSARP, maintained an administrative record of GSARP meetings, provided staff support for development of documents, and was responsible for all fiscal management and tracking of funds supporting GSARP activities.

Several people in the region, including a number of Panel members, are collaborating on efforts to understand more about the Asian tiger shrimp (*Penaeus monodon*). There had been a slow steady increase in the number of *P. monodon* sightings in the Gulf and South Atlantic region from 2006-2009. In 2010 there was a slight decrease in sightings from 47 (2009) to 32 (2010). However, reported collections of this species increased by an order of magnitude between 2010 and 2011 with over 330 specimens being collected with the majority coming from Louisiana and South Carolina. It is unclear if this invasive species has established a breeding population in this range or if they are being introduced. Also, it is uncertain what impacts it may have on the invaded environment or native species. In an attempt to better understand the *P. monodon* population structure in this invaded range, the group is establishing a tissue repository and doing DNA sequencing and analysis.

The Panel is keeping a close eye on the spread of lionfish. Lionfish are continuing to increase their range and densities, becoming very abundant in the Gulf of Mexico off the west coast of Florida. Some recent studies have documented lionfish's consumption rates in the wild to be three times higher than initial lab estimates, and a 65% decline in prey biomass on invaded reefs over a three-year period. There is a lot of public outreach taking place including several collecting/handling workshops and lionfish derbies. Between REEF and USGS there are about half a dozen lionfish reports coming in daily. These reports are being entered into the USGS's NAS database to keep track of the spread of this species through the invaded range. As for management of this species, the Invasive Lionfish Control Ad-hoc Committee (headed up by the Program Coordinator) is working on the "National Invasive Lionfish Prevention and Management Plan" for the ANSTF, the NPS has completed their "Lionfish Response Plan" and in the summer of 2012, the GCFI will be publishing their "Strategies and Practices for Invasive Lionfish Control" manual.

At the Panel's spring 2011 meeting, they voted to start a newsletter that would be produced biannually and would highlight information from each of the Panel's meetings. The first two issues of "Water Watch" are finished and are available on the Panel's website www.gsarp.org.

The Program Coordinator and the GSARP are exploring other funding possibilities to secure money so the Panel can start to be more proactive in their efforts to control aquatic invasive species in the Gulf and South Atlantic Region.

GSARP Member States ANS Management Plans

- Georgia, Louisiana, and South Carolina have completed plans and are actively implementing them.
- Alabama's and Texas' Plans have been conditionally approved.
- Mississippi's plan has gone through the preliminary review by the ANSTF and they are working on incorporating the recommended changes.
- Florida has a completed plan but it has not been approved by the ANSTF.
- North Carolina is in the preliminary stages of formulating their plan.

Logistical and Administrative Support for the GSARP Committees and Work Groups

The GSARP has several work groups directed toward providing advice and guidance on selected subject matter. These groups require meetings and/or telephone conference calls from time to time, and the GSMFC provided staff to assist these work groups in carrying out their respective charges. Planning and logistics for meetings and maintenance of administrative records of such meetings are the responsibility of the staff.

The Panel's Rapid Response Work Group has drafted a new rapid response plan that incorporates the Incident Command System and elements of other plans that have been used across the country. The Work Group is making their final edits to the plan and hopes to have it finalized in 2012.

Subcontract Awards

The Invasive Species Traveling Trunk

This project will develop and produce a traveling trunk of hands-on invasive species examples. Included will be an annotated outline of talking points for presentation to secondary school students and laymen. The material will cover: definitions, sources, ecological impacts, economic costs (when available), suggested public actions, and websites for additional information. The invasive flora and fauna material will contain bullets covering native origin, purpose of introduction (if intentional), pathway of introduction, brief life history, and ecological and economic impacts. The trunk will highlight five species of invasive plants and six species of invasive animals (three invertebrates and three vertebrates). No viable materials/specimens will be in the final product.

Accomplishments to date:

- Content was planned and format (nine sections) established to include five plants (Kudzu, Chinese Tallow, Water Hyacinth, Salvinia and Hydrilla) and six animals (Zebra mussel, Green mussel, Orange Cup Coral, Burmese Python, Lionfish and Nutria).
- A draft of the species talking points (six categories) was developed. Categories include: Habitat, Native Range, Pathway, Use, Brief Life History, and Impacts (Ecologic and Economic). These talking points have been sent for review to eight GSARP members and some reviews have been received.
- Additional general draft sections are written to include: Introduction, Definitions, Pathways, Impacts, What Can We Do, and Useful Websites.
- Initial design layout of graphics has been developed and an initial PowerPoint CD prepared.
- Acquisition of specimens for hands-on use has started. Three plant species are either on hand, or sources have been identified. Five of six animal species are either on hand or sources identified. Much of the progress on this phase is due to the cooperation and support of Panel members.

Trojan Y Chromosome Eradication of Invasive Fish – Development of Sex-specific DNA Markers

In the proposed strategy, "Trojan YY fish" consisting of sex-reversed fish containing two Y chromosomes are introduced into a normal fish population. These YY fish result in the production of a disproportionate number of male fish in the population in subsequent generations. For this study, Nile tilapia, *Oreochromis niloticus*, which have become established in several GSARP states, will be utilized because they have an XY sex-determination system and both male and female YY fish of this species have been produced using

hormone-induced sex-reversal combined with selective breeding. In order to test the feasibility of a Trojan Y Chromosome eradication strategy for *O. niloticus*, YY broodstock must first be developed. The primary difficulty in developing YY broodstock is correctly identifying the sex chromosome genotype of fish used in the breeding program. Sex-chromosome genotyping of fish could be greatly facilitated if DNA probes specific to the *O. niloticus* sex chromosomes were available. The purpose of this study is to identify these sex-specific DNA markers. Randomly amplified polymorphic DNA (RAPD) fingerprinting techniques that have been successfully applied to other species will be applied to *O. niloticus*. Novel sex-specific PCR products will be identified that are specific to either female or male individuals. Markers will then be tested on sex-reversed fish to determine their utility in YY broodstock development.

Accomplishments to date:

- For this study it is important that the fish used for DNA isolation be from a pure line of *Oreochromis niloticus*, which has a XY sex-determination system. Other species of tilapia, such as *Oreochromis aureus*, have a ZW sex-determination system. Hybrids of these two species give unpredictable results with respect to male/female sex ratios. An *Oreochromis niloticus* fish strain from Auburn University was thus chosen for DNA isolation because the pedigree of this strain of fish is known. Ron Phelps, a recognized expert in Nile tilapia genetics, provided fish for DNA isolation. *Oreochromis niloticus* fish were sexed by Dr Phelps and male-specific and female-specific DNA was then prepared by Dr. Eric Peatman, a molecular geneticist at Auburn University.
- The PI expanded the study to also include the African jewelfish (*Hemichromis bimaculatus*) which is an invasive fish in Everglades National Park in Florida. To begin searching for sex-specific markers for African jewelfish, a set of 15 male and 15 female fish were provided by Pam Schofield from USGS. These fish were subsequently used for male-specific and female-specific DNA preparations.
- RAPD PCR reactions thus far have not produced sex-specific markers for either Nile tilapia or African jewelfish. This is not unexpected because most RAPD PCR primers are not linked to a sex-determination locus, so it is expected that a true sex-specific marker will be rare. Others using this method have screened 250 primers or more before identifying a sex-specific marker, so it is expected that the screening of many more primers will be required to identify a useful and reproducible sex-linked marker.

Reproductive Sterility as Tool for Prevention and Control of Invasive Aquatics

Nonindigenous apple snails present two problems in the GSARP region. First, the species *Pomacea insularum* is widespread throughout the region and no method currently exists for eradication. Second, aquarium dumping remains a potential route for new introductions of nonindigenous apple snails into watersheds in the region. This study will address both of these problems. To address the first problem, two alternative approaches for irradiation will be developed to generate sterile snails in high yields. Triploidy and chromosomal translocations in *P. insularum* will be investigated as new methods for producing sterile apple snails for release. To address the second problem, reproductively sterile apple snails of two species in demand as ornamentals in the aquarium trade will be produced.

Accomplishments to date:

- Approximately 300 adult *P. bridgesii* snails were obtained from Rawlins Tropical Fish Farm. To initially assess the effects of radiation on snail viability, six snails were irradiated at each radiation dose of 190 Gy, 160 Gy, 130 Gy, and 100 Gy respectively. Snails irradiated at each dose were placed in aquariums and are now being monitored for mortalities over time. Additional snails irradiated at these same doses were also used in pairwise matings to assess fertility. In these experiments, an irradiated snail is placed in a mating chamber with an untreated wildtype snail of the opposite sex. If eggs are produced

as a result of mating, the eggs are collected and hatched to determine whether viable progeny are produced. If no viable progeny are produced, the irradiated snail is deemed reproductively sterile. At this time, egg masses are being produced only from the untreated controls, so there are no results to report as yet regarding fertility as a function of radiation.

- Snails were irradiated using both the research grade and the commercial grade irradiators at the FDACS facility in Gainesville. Snails at the same stage of development were irradiated at the same dose on each device and then assayed for fertility in pairwise matings. These mating tests are currently in progress and have not yielded fertility results as yet.
- To provide a means to conduct numerous mating assays, a multi-chamber flow-through apparatus was constructed to allow 18 mating tests to be conducted simultaneously. The apparatus consists of 18 plastic bottles that are fixed in a partially submerged position within a floating PVC frame. Holes in the sides of the bottles allow water to exchange between the interior of the bottle and the surrounding tank. Snails are placed into the bottle by means of a slit in the side that can be secured in a closed position by means of a cable tie. Feeding of snails takes place through the opening at the top of the bottle, which is sufficiently large so as to allow fish food to be added, yet is small enough to prevent snails from escaping. Eggs produced as a result of mating within the apparatus are deposited on the sides of the bottle in the airspace at the top.
- In some organisms, chemical treatments of the gonad with drugs that affect chromosome segregation can result in polyploidy progeny after mating. This technique was therefore tried on *P. insularum* as a means of producing polyploidy snails. The gonads of *P. insularum* snails were treated with colchicine, a drug known to induce polyploidy in plants. Colchicine-treated snails were mated and the egg masses produced were assayed by flow cytometry for tetraploid or triploid nuclei. These nuclei are detected as peaks of DNA fluorescence by the flow cytometer. To date, no individual triploid or tetraploid snails have been detected. Treatments of the gonad with other drugs (such as cytochalsin B) will be tested in the future.

Associated Meetings

4/2011	Gulf and South Atlantic Regional Panel on Aquatic Invasive Species Meeting
5/2011	Mississippi River Basin Panel Meeting
5/2011	National Aquatic Nuisance Species Task Force Meeting
10/2011	Gulf and South Atlantic Regional Panel on Aquatic Invasive Species Meeting
11/2011	National Aquatic Nuisance Species Task Force Meeting

SOUTHEAST MONITORING AND ASSESSMENT PROGRAM (SEAMAP)

Jeffrey K. Rester, Program Coordinator

In 2011, SEAMAP operations continued for the thirtieth consecutive year. Total program allocations for all three SEAMAP components, Gulf, South Atlantic, and Caribbean, were approximately $5.09 million in 2011.

The 2008 and 2009 SEAMAP Environmental and Biological Atlas of the Gulf of Mexico were published in June and November respectively. These Atlases provide a summary of all SEAMAP data collected during 2008 and 2009. The Atlases are available on the Commission's web site for anyone interested in downloading a copy.

SEAMAP finalized their 2011-2015 Management Plan over the summer. The SEAMAP Management Plan provides a statement of the current goals, management policies, procedures, and priorities for all SEAMAP components and partnerships. The 2011-2015 Management Plan is a major revision to the previous five-year plan. The 2011-2015 Management Plan can be downloaded on the Commission's web site.

The Winter Shrimp/Groundfish Survey took place from February 8-23, 2011. Eighty-six stations were sampled by Alabama and Texas during the survey that used protocols similar to the other shrimp/groundfish surveys.

The SEAMAP Spring Plankton Survey took place from March 24-May 28, 2011. NMFS collected ichthyoplankton samples at 229 SEAMAP stations. This was the thirtieth year for the survey. The objectives of the survey were to collect ichthyoplankton samples for estimates of the abundance and distribution of Atlantic bluefin tuna larvae and collect environmental data at all ichthyoplankton stations.

The Inshore Longline Survey complements an existing long-term fisheries independent survey currently being conducted by NMFS, by targeting shark species within the shallow waters of the north central Gulf of Mexico. The objectives of the survey are to collect information on coastal shark abundances and distribution with a one-mile longline and to collect environmental data. Mississippi sampled 72 stations from March through October, while Alabama sampled 32 stations during the same period. Texas sampled 16 stations from June through September 2011.

In 2011, Louisiana joined Alabama in conducting vertical longline sampling for reef fish. In Alabama, a total of 12 grids are fished per survey. Two structure and two non-structure areas are randomly chosen and equally allocated across three depth strata. Vertical longline reels are randomly baited with either Atlantic mackerel or squid. Soak time is five minutes. Fifty sets were completed in May 2011 off Alabama.

In Louisiana, the sampling frame is subdivided into three sampling blocks based on depth between 89 degrees longitude and 91 degrees longitude, with the water depth ranging from 60 to 360 feet. Each block is sampled quarterly in a rotation. Within these sampling blocks there is a possibility of randomly selecting 40 different corridors within the block. The actual sites are randomly selected within the corridor boundary and sampled at the chief scientist's discretion. The sites roughly consist of artificial reefs, natural bottom, and petroleum production platforms. During 2011, Louisiana sampled 38 stations in August and September.

The Reeffish Survey is used to assess relative abundance and compute population estimates of reeffish found on natural reeffish habitat in the Gulf of Mexico. In July 2011, Florida sampled 54 stations on the west Florida shelf. NMFS conducted reeffish sampling in March through June. The Reeffish Survey used video stereo cameras since they enabled the measurement of length frequencies. Four video stereo cameras were mounted in a camera array and were

positioned orthogonally with the center of the camera mounted 51 cm above the bottom of the array. A chevron fish trap, that measured 1.83 x 1.83 x 0.75 meters with 3.81-cm mesh, was used to capture fish for ageing and other life history studies. Both the fish trap and camera array were baited with squid. The camera array was allowed to soak on the bottom for 30 minutes, and the fish trap soaked for one hour.

The overall sampling strategy during the 2010 SEAMAP Summer Shrimp/Groundfish Survey was to work from the eastern Gulf to the Texas/ Mexico border, in order to sample during or prior to migration of brown shrimp from bays to the open Gulf area. The Survey was conducted from June 1 to July 31, 2011. Florida, Alabama, Mississippi, Louisiana, Texas, and NMFS sampled 409 trawl stations during the survey. In addition, NMFS and Louisiana vessels collected ichthyoplankton data. Objectives of the survey were to monitor size and distribution of penaeid shrimp during or prior to migration of brown shrimp from bays to the open Gulf; aid in evaluating the "Texas Closure" management measure of the Gulf Council's Shrimp Fishery Management Plan; and provide information on shrimp and groundfish stocks across the northern Gulf of Mexico from inshore waters to 50 fm.

The Fall Plankton Survey took place from August 23 through September 29, 2011. NMFS sampled 152 stations with Mississippi and Louisiana each sampling seven stations. The objective of this survey was to collect ichthyoplankton samples with bongo and neuston gear for the purpose of estimating abundance and defining the distribution of eggs, larvae, and small juveniles of Gulf of Mexico fishes, particularly king and Spanish mackerel, lutjanids, and sciaenids.

The Fall Shrimp/Groundfish Survey took place in October and November 2010 from off Tampa, Florida to the U.S.-Mexican border. Vessels sampled waters out to 60 fm with trawls and plankton nets in addition to environmental sampling. The objectives of the survey were to sample the northern Gulf of Mexico to determine abundance and distribution of demersal organisms from inshore waters to 60 fm; obtain length-frequency measurements for major finfish and shrimp species to determine population size structures; collect environmental data to investigate potential relationships between abundance and distribution of organisms and environmental parameters; and collect ichthyoplankton samples to determine relative abundance and distribution of eggs and larvae of commercially and recreationally important fish species.

JOINT GSMFC/GMFMC HABITAT PROGRAM

Jeffery K. Rester, Program Coordinator

In January, the Program Coordinator became involved with the National Coastal Data Development Center's effort to update the 1985 Gulf of Mexico Data Atlas. The 1985 Data Atlas contained 161 maps that presented the "first comprehensive perspective of the Gulf's coastal and oceanic resources, their uses, and other related characteristics. It is intended to improve the decision-making process and provide a basis for future assessments and research." The new Digital Atlas was an effort to update the 1985 Data Atlas while also expanding some of the key areas. The update broke the maps into six categories: physical, biotic, living marine resources, economic activity, environmental quality, and jurisdictions. The Program Coordinator helped with the data and metadata for mapping living marine resources. The first draft of the updated Data Atlas only contained six species maps of red snapper, gag grouper, red grouper, brown shrimp, white shrimp, and pink shrimp. SEAMAP trawl data and NMFS bottom longline data were used to produce the species abundance maps. The Data Atlas was released in the fall and can be viewed at http://gulfatlas.noaa.gov/. The web site provides users with a description of the species and allows users to download the data and metadata.

The Gulf of Mexico Fishery Management Council wanted to analyze fishery-independent data to compare densities of larvae and adult organisms before and after the Deepwater Horizon oil spill. Since the Commission has a joint Habitat Program with the Council, the Program Coordinator began this effort in May. Using SEAMAP data and data bottom longline data supplied by NMFS, the Program Coordinator mapped the abundance levels of 20 species. The Program Coordinator used SEAMAP trawl data to map sand seatrout, silver seatrout, spot, Atlantic croaker, gulf butterfish, gray triggerfish, red snapper, vermilion snapper, lane snapper, brown shrimp, pink shrimp, and white shrimp. The Program Coordinator used NMFS bottom longline data to map yellowedge grouper, red grouper, red snapper, blacknose shark, blacktip shark, and Atlantic sharpnose shark. The Program Coordinator used SEAMAP plankton data to map larval red snapper, vermilion snapper, king mackerel, red drum, Spanish mackerel, and penaeid shrimp larvae. The Program Coordinator used the same format as the maps for the Data Atlas, so the map products produced will be added to the Data Atlas in the future.

Last fall, the Program Coordinator began working on the Commission's Blue Crab Technical Task Force as the habitat representative. The Commission is updating their Blue Crab Fishery Management Plan. The Program Coordinator is responsible for drafting a habitat section detailing blue crab habitat throughout the Gulf of Mexico and also detailing threats to these habitats.

INTERJURISDICTIONAL FISHERIES (IJF) MANAGEMENT PROGRAM

Steven J. VanderKooy, Program Coordinator

The IJF program continued to provide the Gulf States with quality information and recommendations for interstate management of fisheries through the development and revision of its Fishery Management Plans.

During 2011, the IJF Program Coordinator was Mr. Steven J. VanderKooy while Ms. Debora K. McIntyre served as the IJF Staff Assistant. The IJF staff arranged and provided support for meetings, work groups, and committees. Program staff continued to accumulate data, research papers, and other materials critical to the further development of the FMPs in progress. A contractor continued to computerize the IJF literature repository into an electronic data base. Revisions, updates, and other pertinent information were distributed to technical task forces (TTFs), state personnel, and agency directors, as needed or requested, regarding FMP development.

The Oyster TTF met in late 2010 in a final editing session to wrap up most of the draft *Oyster Fishery Management Plan for the Gulf of Mexico*. Considerable time was spent line editing the majority of the document in anticipation of a task force final review which began in early spring. The document was presented to the TCC in preparation in March at the Commission's annual meeting in anticipation of their review in early summer.

The IJF Coordinator spent several months reformatting the document and provided a final draft to the task force in June. The final draft was approved and sent to the TCC in August. After the TCC approval, the S-FFMC began their review in late fall and approved the plan to go out for a 45-day public comment period from mid-December to late January.

The Arenarius TTF met in January, 2011, in New Orleans, Louisiana and completed the final draft of the *Sand and Silver Seatrout Profile for the Gulf of Mexico*. In February, the staff worked on the final edits and formatting and provided the complete document to the TTF for their review and final approval. In May, the TCC approved the draft to go to the S-FFMC for their review and in early July, it was approved to go out for a 45-day public comment period which ended on September 16. Prior to the Commission's Annual Meeting in October, the Commissioners received their copy of the plan to review and approved the Profile during their Business Session. The document was bid out and printed before the end of the year.

In accordance with the Gulf of Mexico Cooperative Law Enforcement Strategic Plan, the GSMFC Law Enforcement Committee (LEC) continued to work toward regional enforcement goals. The IJF program provides staff support for the LEC's meetings as well as their joint meetings with the Gulf of Mexico Fisheries Management Council's Law Enforcement Advisory Panel (LEAP). IJF staff continues to work on a number of enforcement related documents such as the *Rules and Regulations: Officers' Pocket Guides 2011-2012*, the long standing 'red book' *Law Summary for 2010-2011*, and the annual compilation of the states' *License and Fees*.

Finally, the LEC continued to support the ongoing recovery efforts through enforcement and support to the EDRP and ODRP programs. JEAs continued to drive activities throughout the Gulf and the LEC is provided the opportunity to hold monthly conference calls to keep communications open and to share information.

The Crab Subcommittee had been relatively inactive related to Commission activities prior to 2011. While the IJF Program does not support any of the derelict trap efforts at this time, several state-sponsored derelict trap cleanups occurred this past winter using volunteers.

The Deepwater Horizon disaster of 2010 had most of the state marine agency staff tied up with

response/recovery/monitoring efforts. However, the Blue Crab TTF was reactivitated in late summer and had their first meeting in September to begin the second revision to the *Blue Crab Fishery Management Plan for the Gulf of Mexico*. At that time, a number of updated sections were discussed as well as representation on the task force. Assignments were given and the task force met with the Commission's Crab Subcommittee at their meeting in October during the 62nd Annual meeting of the GSMFC in New Orleans. At that meeting, a number of presenters were invited to discuss stock assessment techniques being used elsewhere in the Gulf and country in anticipation of the TTF conducting its own stock assessment. It was suggested that a program be developed that mirrors the federal process SEDAR (Southeast Data, Assessment, and Review) for federal species.

The Blue Crab TTF met again in early December and assignments were reviewed by state representatives. Since their introductory meeting, a number of additional members were added to the TTF for additional expertise. Alex Miller will handle the economics section, Dr. Steve Jacob (Associate Professor of Sociology at York College of Pennsylvania) will develop the sociology section, Darcie Graham from GCRL is developing a hatchery/aquaculture section, and recreational and commercial expertise was being sought. The group started planning for a Data Workshop as part of the assessment process. A number of data sources were discussed that resulted from the request sent out in November to all the state agencies and academic institutions in the Gulf region. The Data Workshop was planned for early to mid spring 2012.

The fifth revision to the *Gulf Menhaden Fishery Management Plan for the Gulf of Mexico* began in March 2011 and was to be completed in conjunction with SEDAR 27–Gulf Menhaden, which was intended to provide a benchmark stock assessment using the federal process. The revision is still underway by the IJF Coordinator and Joe Smith, NOAA Beaufort. Also working on the FMP revision is Alex Miller, GSMFC staff economist, and Dr. Steven Jacob, Associate Professor of Sociology at York College of Pennsylvania who is working on the sociology section.

The SEDAR 27 Review Workshop was held in November in St. Petersburg, Florida and, after a rigorous review, was rejected due to issues with the abundance indices and problems with the model due to the poor fit of the indices. The errors and data issues were not fatal to the assessment, but in its original format, could not be approved by the reviewers. All three independent reviewers did point out that, while the assessment failed, the data indicated with confidence that "overfishing was not likely occurring and the fishery did not appear to be overfished". A plan is in place to make the necessary improvements to the data in question and collect additional information to go into the revision of the assessment sometime in early 2012. The assessment is going to be continued and finished outside of the SEDAR process through the Commission's new GDAR program.

At the October meeting of the S-FFMC, the IJF staff was directed to begin revision of the *2000 Gulf and Southern Flounder FMP*. Staff identified the new Flounder TTF members for the revision and began making plans to start the work in early 2012.

Program administration in 2011 included financial and logistic support for all IJF-related meetings; production, duplication, and distribution of all documentation and correspondence related to the program; as well as, provision of accountability reporting to the funding agency. In addition, the GSMFC IJF Program staff continued to provide numerous copies of existing FMPs, profiles, amendments, revisions, and other information upon request.

Electronic copies of all new GSMFC publications were generated and have been added to the publications on the Commission website. Finally, the IJF Staff Assistant continues to edit, publish, and distribute two regional management documents annually; *Licenses and Fees for Alabama, Florida, Louisiana, Mississippi, and Texas in their Marine Waters for the Year* and *A Summary of Marine Fishing Laws and Regulations for the Gulf States*. The IJF staff continues to house and enter programmatic reprints and support literature into the Commission's bibliography database and continue to be available via the GSMFC website.

The IJF bibliographic collection represents all of the citations used in the last several FMPs and includes additional technical papers on a number of miscellaneous topics related to fisheries management in the Gulf. The database is searchable from the GSMFC website and provides keywords and complete abstracts when available. All reprints are housed electronically at the GSMFC office and copies are available upon request. In addition, the GSMFC is hosting the Gunter Library Reprint Collection of the Gulf Coast Research Lab which is also searchable through the webpage. The IJF staff is happy to provide electronic copies of any and all reprints housed in GSMFC, as requested.

FISHERIES INFORMATION NETWORK (FIN)

David M. Donaldson, Program Manager

The Fisheries Information Network (FIN) is a state-federal cooperative program to collect, manage, and disseminate statistical data and information on the marine commercial and recreational fisheries of the Southeast Region (Region) which includes Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, Puerto Rico, South Carolina, Texas, and the U.S. Virgin Islands). The FIN consists of two components: Commercial Fisheries Information Network (ComFIN) and the Southeast Recreational Fisheries Information Network [RecFIN(SE)].

The need for a comprehensive and cooperative data collection program has never been greater because of the magnitude of the recreational fisheries and the differing roles and responsibilities of the agencies involved. Many southeastern stocks targeted by anglers are now depleted, due primarily to excessive harvest, habitat loss, and degradation. The information needs of today's management regimes require data, which are statistically sound, long-term in scope, timely, and comprehensive. A cooperative partnership between state and federal agencies is the most appropriate mechanism to accomplish these goals.

Efforts by state and federal agencies to develop a cooperative program for the collection and management of commercial and recreational fishery data in the Region began in the mid to late 1980s. In 1992, the National Marine Fisheries Service formally proposed a planning activity to establish the RecFIN(SE). Planning was conducted by a multi-agency Plan Development Team through October 1992 at which time the program partners approved a Memorandum of Understanding (MOU) that established clear intent to implement the RecFIN(SE). Upon signing the MOU, a RecFIN(SE) Committee was established.

In 1994, the NMFS initiated a formal process to develop a cooperative state-federal program to collect and manage commercial fishery statistics in the Region. Due to previous work and NMFS action, the Southeast Cooperative Statistics Committee (SCSC) developed an MOU and a draft framework plan for the ComFIN. During the development of the ComFIN MOU, the SCSC, in conjunction with the RecFIN(SE) Committee, decided to combine the MOU to incorporate the RecFIN(SE). The joint MOU creates the FIN, which is composed of both the ComFIN and RecFIN(SE). The MOU confirmed the intent of the signatory agencies to participate in implementing the ComFIN and RecFIN(SE).

The scope of the FIN includes the Region's commercial and recreational fisheries for marine, estuarine, and anadromous species, including shellfish. Constituencies served by the program are state and federal agencies responsible for management of fisheries in the Region. Direct benefits will also accrue to federal fishery management councils, the interstate marine fisheries commissions, the National Park Service, the U.S. Fish and Wildlife Service, and the NOAA National Marine Sanctuaries Program. Benefits that accrue to management of fisheries will benefit not only commercial and recreational fishermen and the associated fishing industries, but the resources, the states, and the nation.

The mission of the FIN is to cooperatively collect, manage, and disseminate marine commercial, anadromous and recreational fishery data and information for the conservation and management of fishery resources in the Region and to support the development of a national program. The four goals of the FIN include planning, managing, and evaluating commercial and recreational fishery data collection activities; to implement a marine commercial and recreational fishery data collection program; to establish and maintain a commercial and recreational fishery data management system; and to support the establishment of a national program.

Program Organization

The organizational structure consists of the FIN Committee, two geographic subcommittees (Caribbean and Gulf), standing and ad hoc subcommittees, technical work groups, and administrative support.

The FIN Committee consists of the signatories to the MOU or their designees, and is responsible for planning, managing, and evaluating the program. Agencies represented by signatories to the MOU are the National Marine Fisheries Service, U.S. Fish and Wildlife Service, National Park Service, Alabama Department of Conservation and Natural Resources, Florida Department of Environmental Protection, Louisiana Department of Wildlife and Fisheries, Mississippi Department of Marine Resources, Puerto Rico Department of Environmental and Natural Resources, Texas Parks and Wildlife Department, U.S. Virgin Islands Department of Planning and Natural Resources, Caribbean Fishery Management Council, Gulf of Mexico Fishery Management Council, and Gulf States Marine Fisheries Commission.

As of October 1998, the Georgia Department of Natural Resources, South Carolina Department of Natural Resources, North Carolina Department of Environment, Health, and Natural Resources, South Atlantic Fishery Management Council and Atlantic States Marine Fisheries Commission no longer actively participated on the FIN Committee. Although there is no representation of the South Atlantic on FIN, staff members from both FIN and the Atlantic Coastal Cooperative Statistics Program (ACCSP) continue to coordinate, ensuring that there is compatibility and comparability between the two regions.

The FIN Committee is divided into two standing subcommittees representing the major geographical areas of the Region: Caribbean and Gulf of Mexico. These subcommittees are responsible for making recommendations to the Committee on the needs of these areas. Standing and ad hoc subcommittees are established as needed by the FIN Committee to address administrative issues and technical work groups are established as needed by the Committee to carry out tasks on specific technical issues. Coordination and administrative support of the FIN is accomplished through the Gulf States Marine Fisheries Commission.

Program Activities

The FIN is a comprehensive program comprised of coordinated data collection activities, an integrated data management and retrieval system, and procedures for information dissemination. Activities during 2011 were associated with addressing issues and problems regarding data collection and management and developing strategies for dealing with these topics. In addition to committee activities, FIN was involved in various operational activities concerning the collection and management of marine commercial and recreational fisheries data. These activities were conducted by the various state and federal agencies involved in FIN. Each type of activity is discussed below.

Committee Activities

FIN Committee

The major FIN meeting was held in June 2011. The major issues discussed during this meeting included:

- Identification and continuation of tasks to be addressed in 2011 and instruction to Administrative and Geographic Subcommittees and the Commercial Technical, Data Collection Plan, Data Management, For-Hire, Outreach, Recreational Technical, Social/Economic and ad hoc work groups to either begin or continue work on these tasks;
- Development of the 2012 FIN Operations Plan which presented the year's activities in data collection, data management, and information dissemination;
- Discussion of data management issues;
- Review of activities and accomplishments of 2011;
- Continued evaluation of adequacy of current marine commercial and recreational fisheries programs for FIN and development of recommendations regarding these programs;
- Review findings of and receive

recommendations from technical work groups for activities to be carried out during 2012;
- Preparation and submission of a proposal for financial assistance to support activities of the FIN; and
- Continued internal evaluation of the program.

Subcommittees and Work Groups

The FIN subcommittees and work groups met during the year to provide recommendations to the Committee to formulate administrative policies, address specific technical issues for accomplishing many of the FIN goals and objectives, and examine other issues as decided by the Committee. Their activities included:

- The Marine Recreational Fisheries Statistics Survey data review meetings were held in March, September and October 2011 to present the results of the RDD and intercept surveys for the East coast and Gulf Region, sampler performance issues, update on MRIP and Gulf logbook pilot study, update of national economic surveys, discussion of site register re-design, discussion of APAIS sampling topics, review of wave report fish tables and estimate tables and review of Gulf States For-Hire Telephone Survey;
- The Gulf of Mexico Geographic Subcommittee met in March and October 2011 to discuss status of biological sampling activities, presentation of Commercial Vessel Information project, discussion of data reconciliation and data quality, national registry projects, status of MRIP Gulf of Mexico For-Hire Logbook project discussion of future activities, discussion of shrimp data issues, commercial data delivery issues, status of federal quota monitoring/ electronic reporting activities, discussion of compilation of oil spill monitoring protocols/data, trip tickets and traceability, migrating to APEX development tool, weight vs. numbers for recreational data, presentation of inshore shrimp survey results, update on angler expenditure survey and new recreational data capture technology, demo of FIS GulfFIN FOSS project, update of traceability program, presentation of unified trip ticket program, status of metadata data entry and review of 2010 commercial data;
- The FIN Administrative Subcommittee met in April (via conference call) to review and discuss the FIN recommendations document;
- The FIN Data Collection Plan Work Group met (via conference call) in May 2011 to review 2010 and 2011 otolith and length data collection and processing activities and develop recommendations for necessary lengths and otoliths for FIN priority species;
- The annual Otolith Processor Training Workshop was held in May 2011 to conduct otolith reading and review of FIN priority species, discuss the various reference sets, storage of otolith issues and standardized format for reporting APEs;
- The FIN Committee met in June 2011 for their annual meeting. The Committee met to address a variety of important issues including status of Atlantic Coastal Cooperative Statistics Program (ACCSP); FIN Data Management System (DMS) issues, presentation of commercial vessel project, presentation of results from economic inshore shrimp project, status of federal quota monitoring/electronic reporting activities, update on MRIP Gulf Logbook Pilot project, status of states' national registry projects and discussion of future activities, presentation of new MRIP estimation process and intercept survey design, status of Fisheries One-Stop Shop (FOSS), presentation of new recreational data capture technology, view and approval of 2010 FIN Annual Report, various subcommittee and work group reports, status of 2011 activities, review and approval of 2012 Operations Plan and discussion of 2012 FIN funding priorities;
- The State/Federal Fisheries Management Committee met in August 2011 to determine the activities for inclusion in the

2012 FIN cooperative agreement;

- In addition, the Program Manager also attended the various Fisheries Information System (FIS), Marine Recreational Informational Program (MRIP), ACCSP, SEDAR data workshops and Gulf of Mexico Fishery Management Council meetings as a liaison for the FIN.

Operational Activities

- Coordination and Administration of FIN Activities - This task provides for the coordination, planning, and administration of FIN activities throughout the year as well as provides recreational and commercial information to the FIN participants and other interested personnel. This is a continuation of an activity from the previous year.
- Collecting, Managing and Disseminating Marine Recreational Fisheries Data - This task provided for the conduct of the MRFSS survey in Louisiana, Mississippi, Alabama and Florida for shore, for-hire, and private modes, an activity under the RecFIN(SE). This task provided for coordination of the survey, a field-intercept survey of shore, for-hire and private boat anglers to estimate angler catch using the existing MRFSS methodology, and entry of the data. These data were combined with the NMFS effort estimate telephone survey. In addition, the states conducted supplemental sampling of the intercept portion for the MRFSS for charter boats in Louisiana, Mississippi, Alabama, and Florida (east and west coast). The states also conducted weekly telephone calls to a 10% random sample of the Louisiana, Mississippi, Alabama, and Florida (east and west coast) charter boat captains to obtain estimates of charter boat fishing effort. In 2000, NMFS adopted this method as the official methodology for estimation of charter boat effort. This is a continuation of an activity from the previous year.
- Head Boat Sampling Activities – The port sampling portion of this task provided for the sampling of catches, collection of catch reports from head boat personnel, and gathering effort data on head boats which operate primarily in the Exclusive Economic Zone from ports along the coasts of Texas and Florida. This is a continuation of an activity from the previous year.
- Development and Implementation of FIN Data Management System (DMS) - This task provided for further implementation of a fishery information system for the FIN based on the ACCSP model. This task will provide funding for the FIN Data Base Manager and ComFIN Survey Coordinator who will, in conjunction with the ACCSP, work on developing more data modules for the FIN and ACCSP data management systems. Responsibilities include further development of data modules structures; routine loading of Texas, Louisiana, Mississippi (oyster and finfish only), Alabama, and Florida commercial catch effort data, Gulf biological data, Gulf recreational data; and maintenance of DMS. It is the next step for implementing a regional system for FIN.
- Biological Sampling of Commercial and Recreational Catches - This task provided funding for collection of biological data from the recreational and commercial fisheries. These data are essential to accurately assessing the status of commercial and recreational species. For the commercial aspects, port samplers collected this information based on established guidelines. For the recreational side, samplers went to sites and collected the necessary biological data using a modified MRFSS method. This task provided funding for collection, processing and analysis of these data. The primary target species include black drum, gag, gray snapper, gray triggerfish, greater amberjack, king mackerel, red drum, red grouper, red snapper, sheepshead, flounders (gulf & southern), spotted seatrout, striped mullet, and vermilion snapper. The secondary target species include Spanish mackerel, scamp, yellowtail snapper, cobia, black grouper, black sea bass, red porgy, snowy grouper, speckled hind, and

Warsaw grouper. This is a continuation of an activity from the previous year.

Coordination and Administrative Support

Working closely with the Committee in all aspects of program coordination, administration, and operation was a major function of FIN coordination and administrative support. Other important coordination and administrative activities included but were not limited to providing coordination and logistical support, including communications and organization of meetings for the Committee, subcommittees, and work groups; serving as liaison between the Committee, other program participants, and other interested organizations; preparing annual operations plans under the direction of the Committee; preparing and/or supervising and coordinating preparation of selected documents, including written records of all meetings; and distributing approved FIN information and data in accordance with accepted policies and procedures.

Information Dissemination

Committee members and staff provided program information in 2011 via a variety of different methods such as distribution of program documents, presentation to various groups interested in the FIN, and via the Internet:

- FIN Committee. 2011. 2012 Operations Plan for Fisheries Information Network (FIN). No. 201 Gulf States Marine Fisheries Commission, Ocean Springs. 25 pp + appendix.
- FIN Committee. 2011. Annual Report of the Fisheries Information Network for the Southeastern United States (FIN) January 1, 2010 - December 31, 2010. No. 182 Gulf States Marine Fisheries Commission, Ocean Springs. 24 pp + appendices.
- Variety of informal discussions occurred throughout the year during ASMFC, GSMFC, NMFS, and other participating agencies meetings and workshops.
- The FIN has developed a data management system that provides access to commercial and recreational data for the Gulf States. There are two levels of access: confidential and non-confidential and users can request access via the FIN DMS web site (www.gsmfc.org/data.html)
- NMFS provides a user-friendly data management system (DMS) for the MRFSS that is accessible via the web (www.st.nmfs.noaa.gov/st1/recreational/index.html)
- GSMFC has developed a home page that provides programmatic and operational information regarding FIN.

If you are interested in any of the documents, they are available upon request from the Gulf States Marine Fisheries Commission office.

ECONOMICS PROGRAM

Alexander L. Miller, Staff Economist and Program Coordinator

The Economics Program, formed in July 2008, continued to develop throughout 2011 in an effort to improve economic data collection and management of recreational and commercial fisheries throughout the Gulf of Mexico. The program is a cooperative partnership among Texas, Louisiana, Mississippi, Alabama, Florida, the Gulf States Marine Fisheries Commission (GSMFC), and NOAA's National Marine Fisheries Service (NOAA fisheries). The program monitors the economic performance of the fisheries of the Gulf of Mexico (GOM) and assesses the economic impacts of these fisheries on local and regional economies. In general, the activities of the economic program are divided into three main components: economic data collection, economic research and analysis, and economic outreach and dissemination.

Data Collection

In conjunction with the Fisheries Information Network's (FIN) Social/Economic Workgroup, the GSMFC coordinates, plans, and conducts specific economic data collection projects throughout its five member states. Economic data collection projects which were in progress in 2011 included the following: an economic survey of the GOM inshore shrimp fleet, an economic survey of fishing related businesses in the GOM, and a marine angler expenditure survey for the GOM. Additionally, a marine recreational use survey was also under development in 2011. Results from these studies will aid in describing the economic performance as well as the economic impacts of these industries. More specifically, economic data and analysis will contribute to a better understanding of the economic contributions that these industries have on local and regional economies. It is the intent that the collection of dependable economic data will further maximize the economic benefits of fisheries resources, while reducing negative costs to fishing communities throughout the Gulf.

Inshore Shrimp Fleet

The Commission completed its first study, and final report, in 2011 to better understand the economic performance of commercial shrimpers who harvested shrimp in state waters in the Gulf in 2008. The study examined the commercial shrimping activities, revenues, and expenditures in order to calculate a variety of economic and financial indicators for this segment of the Gulf commercial shrimp harvesting sector.

The study used a voluntary mail survey in order to target resident licensed commercial shrimpers who harvested shrimp primarily from state waters in Texas, Louisiana, Mississippi, Alabama, and western Florida in 2008. The survey was conducted by the Commission and the Louisiana Department of Wildlife and Fisheries with the support and cooperation of NOAA Fisheries. The survey, which received 591 responses for a raw response rate of 34%, gathered economic data related to revenues, harvesting expenditures, and fixed costs of the inshore shrimp fleet. Statistical methods were used to clean the data. The study results are subsequently based on the responses of 313 commercial shrimpers.

Gulf state waters shrimpers reported an average of approximately $43,000 in seafood related revenues, including approximately $36,000 in revenues from shrimp and $7,000 from other types of seafood. Average cash inflow (the combination of seafood revenues and government payments) was approximately $46,000.

Cash outflow (the sum of expenses related to commercial shrimping activities) averaged approximately $40,000. Fuel expenditures accounted for approximately 30% of total annual cash outflows, while expenses for other trip-related items, such as oil, salt, ice, and groceries accounted for about 11%. About 24% of total annual cash outflows were related to repair costs, about 14% were paid to crew costs, and about 4% went to a combination of insurance premiums and loan payments. Overhead expenditures represented

approximately 17% of total cash outflows for the year.

Net cash flow – the difference between cash inflow and cash outflow – averaged about $6,000. As the positive estimates for average net cash flow suggest, for most respondents, the average amount of money earned in cash revenues (cash inflow) was greater than the amount of cash expenditures (cash outflow). For many, however, the difference was relatively small. Furthermore, for a considerable portion of the respondents (over 45%), net cash flow was negative, meaning that cash expenditures exceeded revenues earned from commercial fishing.

The survey results may be somewhat non-representative of a "typical year" since the study year (2008) saw two major hurricanes slam into Louisiana and Texas. Nevertheless, these results do suggest that most shrimpers in Gulf state waters operated on relatively thin cash margins. When these findings are combined with the results of similar surveys of commercial shrimpers in federal or offshore waters in the Gulf of Mexico, they illustrate the economic stress that the region's commercial shrimp fishery has recently experienced.

A final report of the results is located on the Commission's webpage.

Fishing-Related Businesses

The GSMFC further developed its commitment to collect economic data to determine the economic performance and economic impact of fishing related businesses in the Gulf throughout 2011.

A workshop was conducted in early 2011 to review the Gulf States Seafood Processor Survey instrument and final plans for testing and full deployment of the survey instrument. The survey packet was field tested throughout the five states of the region throughout early 2011 using the NMFS processor list for 2009. Working in cooperation with the University of Florida, the University of South Alabama, Mississippi State University, Louisiana Department of Wildlife of Fisheries, and Texas A&M, the survey packet was tested with approximately two to three individual processors in each state. Processors were initially mailed a survey packet, which included a cover letter to introduce the study to them. In-person interviews were conducted. Results from each in-person interview were used to improve the survey packet. Given minor changes to the survey instrument, the survey packet was deployed throughout the spring of 2011 using the aforementioned universities and approach. Data collection continued through the end of 2011. Periodic conference calls were conducted to ensure consistency and successes throughout the region. Completed surveys from each of the GSMFC's contractors were sent to LDWF, a database was developed, and data were entered. The preliminary raw regional response rate was around 45%. The raw response rate for individual states was as follows: Alabama – 42%, Florida – 47.6%, Louisiana – 69.2%, Mississippi – 17.6%, and Texas – 45.4%.

A similar survey instrument and supporting materials, which is shorter and largely based on the processor survey, was finalized for seafood dealers in 2011. A sampling frame was also developed during 2011 using a database of seafood dealers from each of the states. Throughout late 2011, the dealer survey questionnaire, cover letter, and other materials were produced and assembled in survey packets. The dealer survey was initially distributed late 2011 and early 2012.

A final report of the results from both the processor and dealer survey will be compiled and presented once the final data is entered and analysis is conducted. All figures and estimates will be presented as industry totals and averages. In addition to analyzing the economic performance of processors and dealers, the Commission also plans to estimate the economic impacts of the industry on the local and regional economy using regional input-output impact models.

Marine Angler Recreational Fishery

During 2011, the GSMFC and NOAA solicited saltwater anglers' expenditures on fishing trips throughout the GOM states and Puerto Rico in order to assess the size and economic contribution of the marine recreational fishing industry to the GOM and the United States.

The project uses the MRIP intercept for trip expenditures and a mail follow-up survey for equipment and durable expenditures in Puerto Rico, Florida, Louisiana, Mississippi, and Alabama. For Texas, the state license frame was used in order to survey for trip, equipment, and durable expenditures via a mail survey.

Data collection via field samplers began in January 2011 throughout Florida, Alabama, Mississippi, Louisiana, and Puerto Rico. Data collection in Texas, via a mail survey, began in March and April 2011. Extensive outreach efforts were conducted with the initial deployment of the survey. This included the development of a press release, informational flyers, and other supporting materials. A number of regional and national news stories were written concerning the data collection effort. A number of conference calls were also conducted and supporting informational materials were provided to each of the states and the mail survey contractor. The percentage of completed intercept surveys from January through December 2011 throughout the Gulf was 69% (either fully or partially complete). Cumulatively, from early 2011 through early 2012, the percentage of completed mail/web surveys was 29%.

Data collection for the intercept survey has been completed and the follow-up mail survey will conclude in 2012. Data cleaning and analysis will be conducted throughout 2012, with a final report likely to be published in 2013. This project will contribute to the larger national final report entitled, "The Economic Contribution of Marine Angler Expenditures in the United States, 2011."

Marine Recreational Use

Economic impacts from recreation to local and regional economies extend from other types of marine recreation besides marine angling. Such activities might include scenic landscape viewing, wildlife watching, kayaking, scuba diving, and boating. Determination of the economic impacts that these activities have on the economy is an important aspect of marine recreation that needs additional attention. Planning and discussion for a marine recreational use survey continued to take place in 2011. The GSMFC, in partnership with NOAA fisheries, will collect participation, effort, and expenditures related to ocean recreation activities in 2012, with the primary focus on non-consumptive ocean uses. The project will sample the general public using a survey panel. The survey will be conducted through monthly waves with the sample rotating in and out of each month. Each individual will only be sampled a defined number of times. Selected individuals will be notified in advance so that they will be able to keep track of their activities and expenditures.

The year 2011 was largely used to finalize the survey instrument and submit a package to OMB for approval. Given the national scope of this project, and NOAA largely administering the survey in other parts of the country, OMB approval was required. The survey package was approved in late 2011 by OMB. Throughout early 2012, the GSMFC and the NMFS plan to work with Knowledge Networks to develop a contract and begin the data collection process. This survey is planned to be conducted through 2012. Outcomes of the project will include a database and a report.

Research and Analysis

Analysis and research investigations allow for a better understanding of the economic performance and impact of Gulf fisheries. In 2011, the research and analysis component of the economics program consisted of an impact analysis initiative for Gulf fishing industries and the further development of a study of the influence that macroeconomic conditions (i.e. fuel prices) have on marine recreational angler effort throughout the Gulf.

Macroeconomic Conditions and Marine Recreational Angler Effort

The purpose of this project is to increase the understanding of the impact that macroeconomic conditions such as fuel prices have on marine recreational angler effort (i.e. number of trips) and the area fished (e.g. state or federal waters). Furthermore, it is sometimes difficult to understand and explain why changes in marine recreational effort occur or do not occur. Quantifying how anglers choose to participate or fish in specific areas as macroeconomic factors change may lead to better fisheries management. For example, knowing that anglers choose to fish inshore or participate in an inexpensive mode of fishing as

fuel prices increase may allow for fisheries to be better managed.

The analysis for this project was largely completed throughout 2009 and 2010. The analysis determined that higher gasoline prices and poor economic conditions led to a reduction in trips in federal and state waters but an increase in trips to inland estuaries by a similar magnitude. A manuscript for this project was revised in 2011 in preparation to resubmit to an academic journal.

Impact Analysis

While raw economic data allows for descriptive statistics and averages, economic impact analysis (e.g. input/output modeling) for a particular fishery can help us to further understand the economic contribution that a fishery has to local and regional economies throughout the Gulf. For example, impact analysis can be used to describe taxes, employment, income, value-added, and sales generated from a particular Gulf fishery.

As it is the goal to use impact analysis to better understand the economic contribution from the specific fishing industries studied within the economic data collection component of the program, additional preparation continued in 2011. An economic impact model for the Gulf shrimp fishery was developed and enhanced throughout 2011. The program coordinator also consulted with experts to ensure that the current data collection questions (e.g., from the processor and dealer economic survey) were well suited to be used to conduct economic impact analysis.

Outreach and Dissemination

The third component of the economic program is outreach and dissemination. The objective of this branch of the program is to present the information collected and analyzed within the data collection and research and analysis components of the program. Additionally, this component of the program involves the organization of an annual or biennial meeting for economists who are actively engaged in fisheries economic projects and activities throughout the Gulf.

Fisheries Economic Information Portals

In order for there to be a location where stakeholders of fisheries resources can log-on and access fisheries economic data, the Commission continued to work with the NMFS headquarters office in 2011 in order to develop a national interactive fisheries economic impacts tool. The GSMFC was also in the process of updating their website in 2011 in order to enable web users the ability to access economic information for selected Gulf fisheries. This information includes relevant publications and final reports as they relate to the Commission's economic program.

Gulf States Fisheries Economics Workshop

The Gulf States Fisheries Economics Workshop is an initiative of the economics program that is aimed at promoting communication, coordination, and professional development among fisheries economists and associated stakeholders throughout the Gulf of Mexico. The workshop provides an opportunity to share data collections and research projects and to discuss the future direction of fisheries economics within the region. It is the intention that these meetings will be held as regularly as possible, given funding availability and the need to conduct a workshop. A fisheries economics workshop was held in conjunction with the Commission's 61st Annual Spring Meeting in Houston, Texas in 2011.

ALABAMA MARINE RESOURCES DIVISION

Chris Blankenship, Director

The Marine Resources Division (MRD) is responsible for the management of Alabama's marine fisheries resources through research and enforcement programs. Two division facilities supported an average of 52 employees of the Administrative, Enforcement, and Fisheries Sections during the 2011 fiscal year.

Significant Accomplishments

The U.S. Department of Commerce appropriations budget for the 2011 fiscal year contained money earmarked for cooperative enforcement initiatives between NOAA law enforcement and state fisheries law enforcement entities. The Marine Resources Division and NOAA Enforcement entered into a joint enforcement agreement pursuant to the initiative. As part of the agreement, federal dollars are dedicated to increase fisheries law enforcement efforts and compliance with federal fishery regulations along coastal Alabama and the Gulf of Mexico. Fisheries resources are cooperatively protected, managed, and conserved by state and federal governments. In Alabama, the money was used to purchase two vehicles and surveillance equipment that will be strategically located in coastal Alabama. Additionally, it provided funding to increase patrol hours for MRD officers.

Enforcement officers conducted 16,749 hours of boat and shore patrol, 11,067 boat checks, 1,397 seafood shop inspections, 28,861 recreational fisherman checks, 6,605 commercial fishermen checks, and issued 3,029 citations and warnings for illegal activities. A total of 14,490 hours was spent on administrative duties, court attendance, training, and equipment maintenance. Officers worked 7,116 hours with the National Marine Fisheries Services inter-jurisdictional fisheries enforcement program.

Enforcement officers continued to participate in the Coastwatch Program, established for the training of citizens to recognize and report violations of saltwater fishing laws and regulations. Information from Coastwatch members has assisted with the planning of enforcement patrols and deployment of manpower and other resources, resulting in saved man-hours by not responding to inaccurate reports of violations. To date, 261 citizens have been trained at 37 training sessions held in Mobile, Baldwin, and Jefferson counties. The response to the program continues to be very positive.

Officers attended training courses on boat handling, criminal investigation, computer forensics, criminal law update, environmental crimes enforcement, interview and interrogation, suicide terrorism, firearms repair, national incident command, state emergency management, self-defense, supervision, and other state and federal agency law enforcement programs. Officers continued to enhance public outreach efforts to better communicate enforcement efforts to provide important information and to foster cooperative management initiatives.

The Marine Resources Enforcement Section worked with the other Divisions within the Department of Conservation and Natural Resources to enhance and expand the web-based Conservation Officer Operations Reporting System (COORS). The COORS system has greatly reduced the amount of time the officers spent performing needed administrative duties. The officers' reports are completed and reviewed online; this data is calculated to allow for better analytics of the enforcement section's activities. In 2010, the Conservation Operations Reporting on Numerous Activities (CORONA) system was created to expand the system to the administrative and fisheries sections of the Division. A fleet management module of the COORS/CORONA program will allow for real time maintenance, cost analysis, and tabulation to allow for more efficient maintenance of equipment. Subsistence claims are sent directly to accounting to save on processing costs. The COORS system was implemented beginning the week of September 26, 2009 and

the CORONA system became operational on September 25, 2010.

The Enforcement section has been actively involved in the Border Enforcement Security Team (BEST) and the Environmental Crimes Task Force. Both of these partnerships allow multiple agencies to provide a wide range of skill sets and manpower to enforce state and federal laws. They have also worked closely with the other Divisions within the Department to develop a statewide disaster response effort.

The Enforcement Section continued the installation of cameras for the Marine Resources Coastal Remote Monitoring System. When completed, the system will provide up to 30 high resolution cameras at different locations throughout coastal Alabama areas. There are currently 14 cameras that are operational and shared with other state, local, and federal agencies. A grant application was submitted to expand the network to 19 cameras. The video is available through a web-based portal and is accessible to officers in the field via a wireless internet connection. Not only are the officers able to access the video, they are able to manipulate the camera through a web interface. The video is being stored for up to three weeks on secure servers and is time and date stamped for use as evidence. The sensors include closed circuit television, thermal, and infrared cameras.

The 2011 edition of the popular Alabama Marine Information Calendar was produced and distributed. In addition, a calendar depicting conservation related artwork by coastal fourth graders was produced and printed by the Division. The artwork for the calendar was selected through an art contest, hosted by the Division and judged by local specialists in coastal conservation and the arts. The winning selections were also displayed in art museums in both Mobile and Baldwin counties. Receptions were held at each museum for the winning students, their friends, and families.

Approval has been obtained from the US Army Corps of Engineers for the creation of two near shore artificial reef zones located in Alabama state waters near Orange Beach. Materials will be deployed during the next fiscal year and should create some great fishing spots in the Gulf within three miles of the beach.

A voluntary, no-cost angler registry license was implemented to obtain better catch and harvest data from people fishing in saltwater. This data should improve the stock assessments of species such as red snapper. Exempted individuals, such as lifetime license holders and residents over the age of 64, are now required to register annually. A publicity campaign to disseminate information regarding registration requirements is underway.

The Alabama Legislature passed an Oyster Management Bill in April 2010 that allows the MRD to better manage our oyster resources. The bill provides for the implementation of oyster management stations to allow us to better record the amount and condition of harvest. The bill also changed the tolerance for undersize oysters, standardized the information required on harvest tags, increased the cost of the tags to include the cost of printing, expanded the use of dredges, removed the ability for private lease holders and others to take seed oysters from the public reefs, expanded our oversight of the marking of private leases, created a shell fee to pay for planting and other oyster management costs, and raised the fines for violations. Multiple regulations were signed by the Conservation Commissioner in November of 2010 that clarified the legislation and set a shell fee of $2 per sack of oysters harvested. These funds will be used to enhance and manage the oyster resources of Alabama. The new management plan was implemented during the first commercial harvest which occurred in October 2011. It has been a great success.

MRD coordinated the relay of oysters and cultch material from reclassified waters in upper Mobile Bay to a newly constructed reef in lower Mobile Bay. This program began with the first relay event conducted in March 2010, which relocated six million pounds of material to this new reef. A second relay to relocate oysters and cultch material to a reef in lower Mobile Bay was conducted during March and April of 2011. Approximately six million pounds were relocated during this

second relay. Commercial harvest of these oysters opened on October 24 and was closely monitored through Alabama's oyster management program.

An oyster management barge was under construction during the reporting period. The barge will be completed by early 2012 and it will significantly enhance MRD's oyster management and allow for improved cultivating, planting, relaying, and assessing of Alabama's reefs. Construction of a 32 ft research vessel was also underway during the period. Once completed, this vessel will be used for a variety of projects including submerged habitat evaluation and monitoring (side scan sonar work) and vertical line sampling of artificial reefs.

MRD collected recreational fisheries data as required under a sub-award administered by the Gulf States Marine Fisheries Commission. The Marine Recreational Fisheries Statistics Survey (MRFSS) is a survey of the National Oceanic and Atmospheric Administration (NOAA) with catch information from anglers who fish from shore. MRD staff collected information from anglers representing 2,586 fishing trips during the reporting. In addition, the Socio-Economic Add-on Survey (SEAS) was performed alongside the MRFSS, collecting expenditure information from anglers, which will be used to assess the economic impact of recreational angling.

The success of the electronic trip ticket computer program continues to grow. Currently, 30 Alabama seafood dealers are actively using this program. These dealers contributed over 79% of yearly Alabama landings. The computer program allows seafood dealers to enter landings and trip information from commercial fishermen and submit it electronically on a monthly basis. During the past fiscal year, MRD processed and submitted trip ticket data from 13,065 commercial trips reporting 27.2 million pounds of seafood with a dockside value of $52.0 million.

During FY 2011, MRD staff participated in three large outreach events; the three-day Mobile Boat Show, the two-day Delta, Woods, and Water Expo, and the one-day Conservation Expo/Bird Festival in Fairhope. These events were conducted in an effort to inform and educate the public about Alabama's marine environment. Saltwater "touch tables" were set up at each event to allow children the opportunity to interact with living marine life and learn about these animals which are commonly found in Alabama's waters. Literature concerning seafood rules and regulations, and calendars were distributed. Children enjoyed the opportunity to complete activity books and use rub plates depicting various forms of aquatic life found within Alabama's waters. The Division also participated in a two-day Global Career Day in Mobile which included eighth grade students from throughout the southern portion of Alabama. MRD also presented information at the Facts N Fishin' workshop to charter captains in May 2011 in cooperation with Gulf Shores/Orange Beach Tourism and AL/MS Sea Grant. Presentations were about fish identification, venting procedures, and sustainable methods of fishing.

MRD worked with architecture and engineering firms to finalize and implement plans for the construction of a new laboratory and office facility at Claude Peteet Mariculture Center (CPMC) and the renovation of boat basins located at Divisional offices in Gulf Shores and on Dauphin Island. Renovations of the Dauphin Island primary boat basin are currently underway and construction activities at CPMC began in FY2012. Funding for construction activities are derived (in part) from the Coastal Impact Assistance Program (CIAP) and the Gulf of Mexico Energy Security Act (GOMESA). Hatchery equipment for the lab is being acquired using NOAA Emergency Disaster Recovery Program (EDRP) funds.

MRD, in conjunction with the Alabama Department of Public Health (ADPH) and the Alabama Department of Agriculture and Industries (ADAI), began the implementation of a three-year seafood tissue testing program. The testing program is broken down into two projects: (1) Direct Sampling Effort Project and (2) Dealer/ Processor Sampling Project. Both programs will be testing polycyclic aromatic hydrocarbons (PAH) levels using the LC-Florescence method as well as for dispersant and key heavy metals. The Direct Sampling Effort Project, operated by MRD and ADPH, will test seafoods collected directly from Alabama waters or reef zones. The Dealer/

Processor Sampling Project, operated by ADAI, will test seafood obtained from processors and dealers regardless of harvest location. The results of this program will be distributed to the public.

In addition to the seafood testing program, Alabama has established a Seafood Marketing Commission that will spearhead a seafood promotional campaign in Alabama. MRD continued to work with the Gulf States Marine Fisheries Commission (GSMFC) in the implementation of the Oil Disaster Recovery Program (ODRP). This Program provided an open forum to discuss seafood marketing and sustainability programs. Many of the ideas proposed for other Gulf States will complement Alabama's state-wide seafood marketing campaign. Results of the Seafood Testing Program and the overall safety and health of Alabama's seafood will be marketed through this program. Director Chris Blankenship has been appointed as the program administrator for both the Seafood Testing Program and the Alabama Seafood Marketing Commission. Director Blankenship is also a member of the Gulf of Mexico Seafood Marketing Coalition.

MRD continued to work with the Natural Resource Disaster Assessment (NRDA) process. Part of this process included extensive, first-round sampling efforts to assess certain habitat impacts as well as the coordination of planned activities.

Administrative Section

The Administrative Section provides supervision, clerical, purchasing, and general administrative support for the two operational sections; supervises state seismic activities; and coordinates with other state, federal, and regional agencies on fisheries and environmental matters.

Staff for the Administrative Section consisted of the Division director, six clerical workers, one accountant, and one marine mechanic employee. Offices are maintained at Dauphin Island and Gulf Shores.

Enforcement Section

The Enforcement Section patrols Alabama's coastal waters, enforcing state and federal laws and regulations relating to the conservation and protection of marine resources. Officers also enforce laws and regulations relating to boating safety and freshwater fishing and hunting, conduct search and rescue missions, and participate in drug interdiction operations. Officers are cross-trained and deputized as National Marine Fisheries Service, U. S. Fish and Wildlife, and U.S. Customs and Border Protection agents. Marine Resources Enforcement Officers cooperate extensively with these agencies, the United States Coast Guard, and other Federal agencies in the coordination of joint enforcement operations, investigative and fisheries enforcement expertise, training, public safety, and other natural resource issues.

Facilities for the Enforcement Section consist of headquarters at Dauphin Island and a district office in Gulf Shores. There are currently 14 enforcement officers in the section (eight stationed in Mobile County and six stationed in Baldwin County), one laborer, and the Chief Enforcement Officer stationed at the Dauphin Island headquarters.

Fisheries Section

The activities of the Fisheries Section are directed toward management of commercial and recreational fisheries in Alabama's marine and estuarine waters. These activities involve cooperative efforts with the National Marine Fisheries Service (NMFS) in near shore Federal waters in the Gulf of Mexico and with other Gulf of Mexico state agencies to develop cooperative fisheries management programs. These activities are mostly funded through federal aid programs of the U. S. Departments of Commerce (NOAA/NMFS) and Interior (U. S. Fish and Wildlife Service). Biological programs not covered by federal aid, such as fish kill evaluation, oyster management, shrimp management, and pollution investigations are supported by commercial and recreational license fees. The section personnel also assist in oversight of natural gas activities within Alabama's coastal waters, territorial sea, and adjacent federal waters in the Gulf of Mexico and comment on applications for U.S. Army Corps of Engineer permits in the coastal area. Personnel maintained and improved the home page for the Division, which is associated with and accessed through the Departmental home page at www.outdooralabama.com. The feedback to this

site has been extremely positive and it has proven to be a tremendous asset in getting information and assistance to the public.

Fisheries facilities consist of the CPMC in Gulf Shores and the MRD Laboratory on Dauphin Island. Personnel consisted of one Biologist V, two Biologist IVs, five Biologist IIs, one Biologist I, four Senior Biologist Aides, 12 Biologist Aides, and two temporary laborers.

Federal Aid

Wallop/Breaux: Wallop/Breaux funds are administered through the U. S. Fish and Wildlife Service. Funds from this source were directed toward a creel survey of Alabama's saltwater recreational anglers, production of the 2011 edition of the popular Alabama Marine Information Calendar, children's coastal conservation art calendar, production of the kids' coloring book, maintenance of equipment and facilities in Gulf Shores and Dauphin Island, management of the public artificial fishing reef permit system in the Gulf of Mexico off Alabama, assisting individuals in designing artificial reefs, conducting mariculture research on marine species, maintaining and enhancing boat ramps for boating access, financing research of the ecology of artificial reefs and effects of reef designs with respect to ecology, and the sampling of coastal Alabama fishes to determine stock status.

Fisheries Assessment and Monitoring Program (FAMP): MRD continues to collect legacy data through the FAMP. This program, implemented in 1981, provides a continuous database of fish and invertebrates captured through independent fishery sampling techniques. This sampling program allows MRD to monitor trends in fishes and invertebrates abundance which are not associated with commercial or recreational fishermen.

Adult Finfish Sampling Program: MRD continues a fishery independent gillnet sampling program. The objective is to gather data on adult fish to be used in the management of important species. Sampling will be conducted through the use of two gillnet configurations and a stratified, random design. A total of 99 net sets were conducted. This is a substantial decrease due to problems with ethanol blended fuel and supply issues of a replacement outboard motor.

Cooperative Statistics: Federal aid funds for this program are administered by the Department of Commerce (NOAA Fisheries) and are utilized by the MRD to collect fisheries-dependent data on commercial shrimp, oyster, crab, and finfish landings. Additionally, information on processed seafood such as crab meat and mullet is compiled. Biological information was collected on striped mullet, flounder, Spanish mackerel, grouper, and red snapper. Commercial seafood license data was forwarded to NOAA Fisheries under this grant.

Southeast Area Monitoring and Assessment Program (SEAMAP): Funds from this program are administered by the Department of Commerce (NOAA/NMFS) and are utilized in Alabama for the development of a long-term fishery-independent database on recreationally and commercially important marine and estuarine fishery stocks. This project provides funds to assist in management of the Alabama shrimp fishery, as well as, to evaluate spawning success and juvenile survival for important recreational and commercial species. In FY2011, 16 offshore, 40' trawl samples and six near shore and three offshore ichthyoplankton samples were collected. Ichthyoplankton samples have incorporated both neuston and bongo nets at all SEAMAP stations. Routine bi-monthly inshore sampling was conducted in state waters resulting in the collection of 136 trawl, 34 seine, and 42 beam plankton trawl samples.

Funding continued for the vertical line sampling and other states have initiated similar programs with the intention of a standardized protocol in the future. Over 500 red snapper were collected to estimate abundances by size and age.

The Marine Recreational Fisheries Statistics Survey (MRFSS): Funding for this project is provided through a sub-grant from the Gulf States Marine Fisheries Commission. NOAA Fisheries utilizes data from this survey to determine trip level catch and effort information for shore, charter, and private boat anglers throughout the United States. Data generated from the survey is used by fisheries managers throughout its scope of coverage. MRD

has a subcontract to conduct the portion of MRFSS which collects data from anglers after they have completed their fishing trips and interviews charter boat captains for effort. MRFSS survey interviews totaled 764 in SH mode, 619 in PC mode, and 1,203 in PR mode for a grand total of 2,586 anglers interviewed during the reporting period. The Socio-Economic Add-on Survey (SEAS) was performed alongside the MRFSS, collecting expenditure information from anglers, which will be used to assess economic impact of recreational angling. Training of MRFSS samplers was held in November 2010 and June 2011 for fish identification reinforcement and resolution of major MRFSS issues, with regular short meetings held to address immediate issues. Phone calls (the For-Hire Survey) to captain/owners in the charter boat industry, previously set at 40% of the active fleet for one year to increase the precision of effort estimates in the wake of the Deep Water Horizon oil spill, returned to 10% of the active fleet at the first of June 2011. Validations of charter activity, however, increased to a minimum of five times per week to reduce the correction factor associated with trip estimations. New QAQC protocols were introduced towards the end of FY2011.

Otolith Sampling Program: Funding for this project is provided through a sub-grant from the Gulf States Marine Fisheries Commission (GSMFC). MRD continued collection of otoliths (ear stones) from species given high priority for sampling including gray triggerfish, southern flounder, red snapper, greater amberjack, and king mackerel caught by commercial and recreational fishermen. Otoliths are used to age fish which is important information used to determine the health of fish stocks. A total of 2,054 fish were sampled for this program in FY2011, and the special fall red snapper season probably gave a boost to sampling efforts as the month of November 2010 was very productive in comparison to previous years. Out of those samples, 804 samples have been cut and aged so far with work ongoing.

Commercial Trip Ticket Program: Funding for this program is provided through the GSMFC. This program is part of a Gulf-wide effort to generate more specific information for each commercial fishery by collecting landings and effort data from each fishing trip. Trip tickets are printed in triplicate form and supplied to Alabama seafood dealers. Seafood dealers are required to complete the trip ticket for each transaction. An alternative form of submission is through an electronic entry program which allows seafood dealers to enter landings and trip information and submit it via the internet on a monthly basis. Data from the completed trip tickets are scanned into a computer, verified, and edited. Monthly data is submitted to the GSMFC and will ultimately be supplied to NOAA Fisheries.

Emergency Disaster Recovery Program: In recent years, MRD worked with legislators, the Commissioner of the Department of Conservation and Natural Resources, and neighboring state agencies to secure NOAA fishery recovery funds. The monies are being used to clean up and restore oyster and shrimp grounds affected by recent hurricanes and to monitor the recovery of associated fisheries.

During March of 2011, MRD, working with local seafood organizations and hundreds of oystermen, was able to move over 6 million pounds from upper Mobile Bay to the Relay Reef on the western shore in the middle of Mobile Bay. The project itself provided temporary employment while oyster resources continue to recover. Additionally, MRD contracted for the construction of a 45' oyster barge to be completed in early 2012. The barge will be used to plant shell, cultivate reef bottom, relay seed and shell stock, and monitor reef health.

Alabama Seafood Testing Program: Funding for this program is provided by British Petroleum (BP). MRD, in conjunction with the Alabama Department of Public Health (ADPH) and the Alabama Department of Agriculture and Industries (ADAI), began the implementation of a three-year seafood tissue testing program to check for contamination resulting from the Deep Water Horizon oil spill.

Alabama Seafood Marketing Program: Funding for this program is provided by British Petroleum (BP). Alabama has established a Seafood Marketing Commission that will oversee a seafood promotional campaign in Alabama due to market

losses incurred by the Deep Water Horizon oil spill. Results of the Seafood Testing Program and the overall safety and health of Alabama's seafood will be marketed through this program.

Coastal Impact and Assessment Program (CIAP): Funds from this program are administered by the U.S. Department of Interior. Construction and renovation projects located at MRD's Gulf Shores facilities are currently being funded through this program. MRD is using some funding to renovate the Dauphin Island boat basin. This project will replace the concrete seawall constructed in the 1960s with vinyl sheets and concrete cap. Additional funds were used for the construction of a 32 ft survey vessel for utilizing side-scan sonar to map bottom type and structures within Mobile Bay and habitat in offshore reef zones.

Significant Problems and Solutions

Alabama's shrimping and gillnetting fleets were unable to efficiently shrimp/fish from July to October 2011 due to a massive bloom of bryozoans in the Mississippi Sound and southern portion of Mobile Bay. A carpet-like distribution of bryozoans fouled shrimp nets by clogging TEDs and filling the cod end of nets to the point that shrimpers could not harvest shrimp. Similarly, gillnet fishermen risked losing gillnets due to added weight of the bryozoans drifting into their nets. Shrimpers, and to a lesser extent gillnetters, were unable to work in the Mississippi Sound during the invasion. Similarly, shrimping activities in the southern portion of Mobile Bay were hindered due to bryozoans. Unfortunately, this type of hardship on the constituents of AMRD cannot be alleviated by management decisions. Therefore, the distribution and quantity of shrimping/fishing effort was adversely affected by the bryozoans.

MRD has observed an increase in the documented reports of tiger prawn (*Penaeus monodon*) encounters in Alabama waters during 2011 (eight confirmed reports). It is still unclear as to whether this species is becoming more prevalent in the environment or if increased public awareness contributed to the increase in documented reports. MRD has also received reports from SCUBA divers of occurrences of the invasive lionfish (*Pterois volitans*) from Alabama's offshore waters. A report was documented in June 2011 when a spear fisherman collected an individual specimen from an oil/gas platform approximately 43 miles south of Dauphin Island.

A claim has been submitted by MRD to BP for the loss of saltwater fishing license sales for the months of May through August 2010 as a result of the Deep Water Horizon incident. The status of this claim is pending.

Future Plans

The Division plans to continue development of the inshore artificial reef system particularly in Mobile County. As donated material has been greatly reduced in coastal areas of Alabama due to the economic downturn, MRD plans to purchase appropriate material and enhance identified reef sites. MRD will investigate the possibility of receiving permit(s) for additional near shore artificial reef zones. These areas, if permitted by the U.S. Army Corps of Engineers, would provide unique fishing opportunities for Alabama's coastal anglers. Various user groups will be contacted prior to submission of a permit for this activity to maximize success.

Coastal boating access continues to be a concern for MRD. Maintenance to and renovations of existing boat ramps will continue be a priority of the Division. MRD will search for additional properties and/or cooperative agreements that will allow for the expansion of boating access sites in coastal Alabama.

MRD will work with the Department's Engineering Section, the State Lands Division, and outside architects/contractors with ongoing construction and/or renovation projects pertaining to key structures located at the CPMC (Gulf Shores) and Dauphin Island facilities. These projects will consist of the construction of a new multifunctional laboratory and office complex at CPMC, and renovation of the boat basins at CPMC and Dauphin Island; funding will be provided through the Coastal Impact Assessment Program (CIAP). It is anticipated that the construction activities at Dauphin Island will be completed in FY2012 and construction activities at CPMC will be completed in FY2013.

MRD will continue to work with other state (Alabama and Gulf States) and federal agencies in the assessment, monitoring, and rehabilitation efforts needed in response to the Deep Water Horizon oil spill. The Fisheries Section will work closely with the NRDA process to implement fisheries assessment and monitoring plans.

MRD will continue to produce public service announcements regarding the National Angler Registry and assist anglers with questions and registration related to the Registry.

FLORIDA FISH & WILDLIFE CONSERVATION COMMISSION

Nick Wiley, Executive Director

DIVISION OF MARINE FISHERIES MANAGEMENT

Mark S. Robson, Director (Retired)/Jessica McCawley (Appointed September 2011)

The major responsibilities of the Division of Marine Fisheries Management include: (1) development and implementation of marine fisheries management and policies, (2) angler outreach and marine aquatic resource education, (3) commercial fisheries assistance, (4) the state artificial reef program, (5) monitoring compliance with the marine fisheries trip ticket reporting requirements through audits of applicable fish house records, (6) administrative penalty assessments for violations of specified fisheries regulations, retrieval of lost and abandoned spiny lobster, stone crab and blue crab traps, and (7) issuance of Special Activity Permits. Highlights of staff efforts in 2011 [i.e., state fiscal year 2010/2011] are summarized below.

The 2011 Florida Legislature reduced the Division of Marine Fisheries Management operation budget by 7%.

Marine Fisheries Management and Policy Development Section

The Marine fisheries management and policy development program develops regulatory and management recommendations for consideration by FWC Commissioners designed to ensure the long-term conservation of Florida's valuable marine fisheries resources.

The 2011 Florida Legislature made no amendments to the statutes regarding marine fishery licenses, fees, or penalties.

During the state fiscal year 2010/2011, the Florida Fish and Wildlife Conservation Commission (FWC) approved a number of amendments to marine fisheries rules contained in Chapter 68B of the Florida Administrative Code.

Amendments were made to the commercial ballyhoo, marine life, blue crab, and stone crab fisheries to provide harvesters more flexibility by allowing the transfer of their fishing license endorsements to other harvesters from May 1 through the end of February. This allows additional time for harvesters to transfer their endorsements for these fisheries each year.

Further amendments were made to the commercial blue crab fishery including amending the six 10-day rolling closures so that they occur every other year instead of annually. Three of the six closures will occur each year, alternating by coast. Additionally, clarifying rules were created stating that a harvester may hold up to two soft shell endorsements, tags can be ordered anytime during the year, and blue crabbers that experience boat problems can temporarily designate another boat to pull their commercial traps while their primary boat is being repaired.

FWC's Spanish mackerel and reef fish rules were amended to be consistent with federal regulations for Gulf of Mexico and South Atlantic waters. Spanish mackerel was amended to change the commercial fishing year for Spanish mackerel in Atlantic state waters from April 1 through March 31 to March 1 through the end of February each year and the start date for the 3,500-pound vessel limit was changed from April 1 to March 1.

For reef fish, the FWC created a fall season consisting of eight Friday through Sunday recreational harvest weekends for red snapper in the Gulf of Mexico from October 1 through November 21, 2010. The FWC again addressed the recreational red snapper season in 2011 and established a June 1 through July 18 season for red snapper in the Gulf of Mexico for 2011. The recreational harvest of greater amberjack in the Gulf of Mexico was also prohibited from June 1 through July 31, each year, to become consistent with the newly implemented federal closure in Gulf waters.

The FWC also added the requirement to hold a gulf grouper IFQ account to commercially harvest grouper in Florida waters of the Gulf of Mexico. The FWC also implemented consistent rules with the federal interim rules for gag grouper which prohibited the recreational harvest and possession of gag grouper in all state waters of the Gulf of Mexico, excluding Monroe County, during the following closed periods in 2011: June 1 through September 15 and November 16 through December 31.

Between July 1, 2010, and June 30, 2011, the FWC implemented 10 Executive Orders in response to the Deepwater Horizon Oil Spill. These 10 Executive Orders were in addition to the 18 that were issued in early 2010. The Executive Orders included area closures and openings off Escambia County (Pensacola), a temporary extension of the commercial saltwater products fishing license expiration date, and earlier openings or extended fishing seasons for specified fisheries.

Angler Outreach and Marine Aquatic Resource Education

The objective of this activity is to inform the public and to increase public participation in the management and preservation of Florida's marine resources by heightening their awareness of and personal responsibility toward these resources.

Overall there were: (1) 52,654 outreach fishing event contacts; (2) 1,503 presentation and seminar contacts; (3) 69,798 email, telephone, mail outs and in-person contacts; and (4) 1,511,553 website contacts during fiscal year 2010/11.

Twelve Kids' Fishing Clinics (KFC) were conducted in coastal cities throughout Florida. A total of 3,333 children, 529 volunteers, and an estimated 1,543 parents attended the KFCs. All participating children received a rod and reel combo provided by Fish Florida! or purchased with donations from individuals and businesses from the hosting community. Fishing vessel partners took 428 participants on fishing excursions to reinforce the Kids' Fishing Clinics curriculum.

Through a partnership with an owner of a fishing fleet, over 1,000 children participated in 25 fishing trips as part of a new modified version of the Kids' Fishing Clinics. Ethical angling concepts (fish handling, catch and release techniques and regulations), habitat conservation (No Habitat- No Fish!), knot tying and casting were all taught to the children aboard the fishing vessel. After conclusion of the educational sessions, the children were able to fish and practice what they just learned. Several groups that participated in this program included urban youth organizations, county schools, and Boys & Girls Clubs.

Four *Ladies, Let's Go Fishing* (LLGF) seminars were conducted in four locations. A total of 155 women participated. In addition to learning what FWC does to conserve fisheries resources in Florida, the participants at these events learned about how they can have a positive impact on Florida's marine resources and what they can do to promote fish conservation while fishing.

Two one-day events targeting 34 current and future female recreational anglers were conducted. These shore-based clinics focus on the Sport Fish Restoration Program, basic saltwater fishing skills (casting, knot tying, rods and reels, conservation equipment, terminal tackle and lures/bait), how FWC functions to conserve marine fisheries resources (research, outreach and management), catch and release techniques, and ways participants can support and be actively involved in the conservation of Florida's marine resources.

Seven events were attended by 261 youth in the Cedar Key region. At these events the participants were provided with information about importance of marine habitats to coastal fisheries, how they as anglers can conserve fish resources and ways they can contribute to the overall enrichment of marine resources. The participants also conducted field sampling activities similar to what state biologists do to gather resource data for management.

A partnership with the International Game Fish Association (IGFA) and their community marine education and outreach efforts was continued by providing various FWC marine resource publications (e.g. Fishing Lines magazine) for participants in their education activities and

Junior Angler tournaments. IGFA continues to incorporated specific aspects of FWC curricula (e.g. Kids' Fishing Clinic stations) into their educational activities.

Partnered with several other agencies and organizations to conduct environmental education projects aimed at marine resource conservation including: Mote Marine Laboratory, Florida Sea Grant, and Florida Fish and Wildlife Research Institute.

Distributing FWC/SFR educational literature aimed at heightening citizens' awareness of and personal responsibility for protecting Florida's marine resources. Educational information was distributed by fishing clubs, tackle shops, Florida state parks, Florida state aquatic preserves, fishing organizations (such as IGFA), National Estuarine Research Reserves, Florida Keys National Marine Sanctuary, Florida Sea Grant, International Game Fish Association and FWC field offices.

The following educational publications were made available to the public through numerous events. Most of these publications are also available on-line and the links to each publication are provided below.

- *Fishing Lines: An Angler's Guide to Florida's Marine Resources*
  http://www.myfwc.com/fishing/saltwater/fishing-resources/fishing-lines-magazine/

- Florida Recreational Saltwater Fishing Regulations (English and Spanish editions)
  http://www.myfwc.com/fishing/saltwater/regulations/

- Fish ID Poster series by artist Diane Rome Peebles

- Sea Stats
  http://research.myfwc.com/products/products.asp

- Catch and Release Techniques
  http://www.myfwc.com/fishing/saltwater/fishing-resources/

- Florida Boater's Guides
  http://research.myfwc.com/products/products.asp

- Kids Fishing Activity Book (Freshwater and Saltwater)

- Monofilament Recycling and Recovery Program
  http://mrrp.myfwc.com/educational-materials.aspx

One new Boater's Guide, *Treasure Coast South* (12,000 copies) was produced and printed. The Tampa Bay Boater's Guide was updated and 20,000 copies of this guide were printed.

In the Apalachee Bay/Apalachicola Bay region of the Florida Panhandle, staff interacted with anglers at boat ramps, tackle shops, and other fishing related events to promote fisheries conservation, resource stewardship, and the Sport Fish Restoration Program. This work included giving presentations at various fishing club meetings in the region. In the Cedar Key region (Big Bend area of Florida), O&E staff performed similar activities targeting anglers that resulted in 1,195 anglers and other resource users receiving information about marine fisheries conservation, SFR, and habitat conservation. Staff responsible for this program conducted similar activities at other locations (and with other organizations) around the state, interacting with 500 anglers.

Modified versions of KFCs called *Nature Coast Fishing for Youth* (formerly known as 1-2-3 FISH), were conducted in Cedar Key, Florida, during the summer months. Five youth events were conducted with participation from 122 youth. The participants in these programs learned about the importance of marine habitats to coastal fisheries, how they as anglers can conserve fish resources, the basics of saltwater fishing and ways they could reduce pollution while fishing. These events were partially supported by Fish Florida!, which provided rods, reels, and tackle boxes to the participants.

Fifty educational tours and nine fishing events were conducted at the Florida Fish and Wildlife

Conservation Commission's Stock Enhancement Research Facility. Over 900 children and adults participated in these hands-on activities designed to increase their knowledge of marine fisheries conservation, ethical angling, and habitat preservation. Partnering organizations included The Florida Aquarium, Tampa Bay Watch, Anclote Key Anglers Club, Tampa Bay Fly Fishing Club, Manatee County Sheriff's Youth Ranch, the Florida Sheriff's Youth Ranch, and the Make a Difference Fishing Tournament Foundation.

Thirty-three workshops were conducted to familiarize new teachers with the use of aquatic field activities and gear used to educate students about marine conservation, the various coastal habitats in Florida, and the important link uniting saltwater fish and their habitat. Six hundred fifty marine educators completed the workshops and received a certificate that provided them the necessary authority to conduct aquatic field activities. These workshops convey best practices knowledge and skills that the participants can use when bringing groups of students to aquatic environments. These workshops took place at various educational facilities statewide and were taught by trained workshop facilitators. Workshop participants were provided with information about marine fisheries conservation, the SFR program, and marine resource educational activities.

Over 500 copies of the Sport Fish Restoration Program brochure were distributed at numerous events. This publication was also distributed upon request and is on the FWC website.

Staff distributed a video (Conserving Florida's Marine Fisheries) covering the Sport Fish Restoration Program, It's in Your Hands and Catch and Release. Over 300 copies of this DVD were distributed to fishing clubs, anglers, marine science educators, and other interested citizens.

Fishing Lines magazine, a Florida Fish and Wildlife Conservation Commission (FWC) publication that highlights information about the SFR Program and Florida's saltwater SFR programs, was reprinted after minor edits and updates were incorporated. About 30,000 copies of this publication were printed for distribution to anglers. The issue contains general fishing information and personal stewardship responsibilities for conserving and enhancing Florida's marine fisheries resources.

Over 9,000 copies of various Boater's Guides were distributed statewide at angler and boater events and in response to requests for information.

Staff also distributed several promotional items to increase the knowledge and benefits of the SFR program to anglers and the general public. These items have information about the SFR program, its benefits to Florida, and some general fisheries conservation messages. These items include water bottles, pencils, floating key chains, reusable bags, and adhesive fish length rulers. The water bottles, pencils, and bags are made from recycled materials. These items were distributed at fishing club meetings and other events where staff interacted directly with anglers.

Digital and print images continue to be collected and added to the photograph library. Representatives collect images from each grant, and images are also collected from all FWC outreach and education events. Staff continued to add to the inventory and assessment of existing photographs to determine suitability for use in publications [photograph of acceptable quality] and need for future publications.

Staff continued using the SFR displays produced to promote the SFR program and its value to Florida's recreational anglers. Examples of these displays include vertical roll up banners, table top displays, and a large floor display. Some of the events these displays were utilized at include: the International Game Fish Association Fishing Expo, the Apalachicola Seafood Festival, the St. Marks National Wildlife Refuge Wildlife and Heritage Outdoor Festival, and the Creating the Next Generation that Cares event.

FWC staff worked with organizations and schools to showcase Florida's SFR programs through the established fish loan program. FWC loaned hatchery-raised red drum to Bottled Ocean (Gaylord Palms Resort), the St. Petersburg Pier Aquarium, Florida Oceanographic Society, Florida Gulf Coast University, the Oregon Coast Aquarium, Rookery

Bay National Estuarine Research Reserve, Loggerhead Marinelife Center, the Environmental Learning Center, and the FWC Cedar Key Field Lab. Staff also provided educational publications for public distribution at these locations. A total of 543 hatchery-bred fish were provided to these facilities.

FWC loaned hatchery-raised juvenile fish to seven schools through the Aquaculture in the Classroom program. Educational materials on the fundamentals of marine aquaculture and fisheries enhancement were also provided to the schools.

A 350-gallon Sport Fish Aquarium with Discovery Rail, an Interactive Smart Screen, and a Kids Activity Cube offer ways for the public to interact by virtually touching a screen to learn about Sport Fish Restoration, Marine Fisheries Research, and Marine Fisheries Management in Florida. There are also two Interactive Kids Activities pages and an Interactive Kids Activity Cube that teach children how to measure a fish, bait a hook, and identify what they have caught. It also teaches them where fish live.

Staff provided information about outreach material to a variety of media outlets. Staff continues to communicate with media contacts to update them about fisheries management and Sport Fish Restoration information.

Press releases were drafted to publicize or showcase Kids' Fishing Clinics, artificial reef deployment, and public workshops regarding angler interests. The information was provided to agency personnel authorized to issue press releases.

Commercial Fisheries Assistance

During state fiscal year 2010/2011, the FWC continued ongoing commercial saltwater fisheries regulatory assistance activities.

As many as 20,000 commercial saltwater regulation booklets were designed, printed, and distributed by mail (also available on agency website). Three commercial fisheries newsletters were prepared and a total of 45,000 newsletters were distributed by mail (also available on agency website). As many as 299,000 emails were prepared and sent informing commercial license holders, law enforcement, and commercial industry representatives of 23 agency press releases (also available on agency website). As many as 5,400 telephone calls related to commercial fisheries were received and answered and 7,200 emails related to commercial fisheries were received and answered.

State Artifical Reef Program

The primary program objectives are to provide financial and technical assistance to coastal local governments, nonprofit corporations, and state universities to develop artificial reefs and to monitor and evaluate these reefs.

Over the spring and summer of 2011, 11 artificial reef construction projects were completed in Florida utilizing funds from the U.S. Fish and Wildlife Service's Federal Sportfish Restoration Program and managed by the FWC Artificial Reef Program with the Division of Marine Fisheries Management.

Five of the 11 (36%) new artificial reef construction activities took place on the Gulf Coast and six of the 11 (64%) were off the Atlantic Coast. Within the Gulf Coast activities, two artificial reef construction activities took place in the Florida Panhandle (Okaloosa County and Mexico Beach in Bay County), while two others took place off the west coast of peninsular Florida (Pinellas and Sarasota counties). The other Gulf Coast reef project is the Steinhatchee Fisheries Management Area Phase II artificial reef construction activity carried over from last year. This new reef was constructed in federal waters of the Florida Big Bend, located southwest of the mouth of the Steinhatchee River (southern Taylor County, northern Dixie County). Within the Atlantic Coast activities, two artificial reef construction activities took place off northeast Florida (the city of Jacksonville and Flagler County) and four construction activities occurred off southeast Florida (Martin, Palm Beach, St. Lucie, and Miami-Dade counties). There were also three artificial reef monitoring projects under way in 2011. These various projects are summarized below.

Miami-Dade County (Southeast Florida)

Miami–Dade County deployed 700 tons of artificial

reef material types consisting of limestone boulders and clean concrete material. A total of four artificial reefs were constructed to create habitat corridors at two separate artificial reef permitted sites, one inshore and one offshore of the county's coast.

The inshore reef site received a total of 350 tons of reef material within the Mercy artificial reef site, located within Biscayne Bay directly east of Mercy Hospital in South Miami at a depth of 12 feet. The reef had six feet of vertical profile. The offshore reef site received a total of 350 tons of materials within the Key Biscayne Artificial Reef Site located approximately four nautical miles at a 120 degree bearing from Marker "G" in Government Cut, directly east of Key Biscayne in federal waters at a depth of 64 feet. This reef had nine feet of vertical profile.

Martin County (South Central Florida East Coast)
Martin County deployed 1,200 tons of concrete culverts, clean concrete rip/rap, and other concrete modular construction materials divided among three patch reefs within the Martin South County Reef permitted area named the Lee Harris Reef. Each of the three patch reefs consists of concrete materials placed as a single pile of about 400 tons located about 1,475 feet apart from each other in the center of the permitted site.

St. Lucie County (South Central Florida East Coast)
St. Lucie County deployed a total of 1,996 tons of concrete culverts, concrete light poles, and concrete bridge pilings in two patch reefs within the North County Nearshore Reef permitted area. Each of the two patch reefs consisted of concrete materials placed as a single pile (approximately 1,000 tons each), placed about 4,400 feet apart from each other near the northeast corner of the permitted site at depths of 56 feet and 61 feet, respectively.

Okaloosa County (Northwest Florida)
Okaloosa County constructed a reef comprised of 32 prefabricated concrete and steel reef modules weighing a total of approximately 80 tons within the county's Large Area Artificial Reef Site (LAARS) site "A." The reef is comprised of 16 separate locations forming an "X" pattern with two units per deployment location. Each patch reef of two units is approximately 500 feet apart. The deployment location is approximately 14.7 nautical miles on a bearing of 151 degrees from the Destin East Pass inlet in about 110 feet of water. The center of the "X" pattern is occupied by the recently deployed 55-foot tug Monica Lee, which was a separate county-private nonprofit partnership effort.

Jacksonville, City of (Northeast Florida)
The city of Jacksonville constructed a reef comprised of 700 tons of concrete junction boxes, culvert pipe, concrete bridge pieces, and pilings at a depth of 75 feet within the Floyds Folly (FF) Artificial Reef Site. The reef was deployed as single cluster in a liner pattern with stacking providing a relief of 10 feet. The footprint is roughly 644 square feet.

Pinellas County (West Florida)
Pinellas County constructed a reef comprised of 1,050 tons of concrete culvert pipe, slabs, piling cutoffs and power poles at two patch reef locations at a depth of 42 feet within the Rube Allyn Artificial Reef Site. The reef was deployed as two patch reefs each consisting of about 510 tons of concrete material. Each of the reef sites is the same general deployment design and separated by approximately 800 feet at a depth of 42 feet.

Flagler County (North East Florida East Coast)
Flagler County deployed 510 tons of concrete slabs and pilings recovered from a bridge replacement project as a single patch reef within the Flagler County Reef Site #3 permitted area. The patch reef consists of concrete materials placed as a single pile with an anticipated footprint of 10,000 square feet and vertical profile of up to 10 feet at a depth of 68 feet.

Palm Beach County (Southeast Florida)
Palm Beach County deployed 900 tons of limestone boulders at a depth of 25 feet within the Boynton Reef Inlet Artificial Reef Site. The three-four feet diameter limestone boulders were stacked at least two high for approximately eight feet of vertical profile. The patch reef is a single pile within the southern quadrant of the permitted area at a depth of 25 feet.

Mexico Beach, City of (Northwest Florida)
The city of Mexico Beach, located in eastern Bay County, deployed 44 concrete and concrete and steel modular units of three different designs. The 44 modules equate to about 80 tons of reef materials distributed among 13 patch reefs at two different permitted sites, with approximately two to 13 modules placed at each patch reef for an average of 5.8 modules per patch reef.

Sarasota County (Southwest Florida)
The Reef Ball Foundation, a nonprofit, deployed 72 designed concrete Reef Ball modules at six patch reef sites within the Sarasota County Silvertooth permitted area. Each patch reef consists of 12 concrete modules with four of each of three types of Reef Ball modules placed within the central-east area of the permitted site. The three module types are: (1) the "deep cover module" which is five feet long, three feet wide and two feet tall with a weight of approximately 2,000 pounds, (2) the "reef block unit" which is two and a half feet tall, three feet wide and weighing approximately 1,000 pounds, and (3) the Pallet Ball which is three feet tall, four feet wide and weighs about 1,300 pounds. The water depth at this site is 30 feet.

Steinhatchee - University of Florida (Big Bend Florida)
To enhance the habitat quality of hardbottom Essential Fish Habitat (EFH) for juvenile gag grouper, a total of 1,800 prefabricated reef cube units were deployed over the summer of 2011 as 450 standardized reefs. Each reef was comprised of four concrete cubes (concrete cubes are 88.9 cm on a side with an open 61 cm diameter hole through the middle). This project was a construction effort whose implementation was delayed the previous summer by the Deepwater Horizon Oil Spill. Each of the 450 four-cube patch reefs was deployed at pre-planned, randomized specific scattered locations no closer than 250 meters from their nearest neighbor, under the direction of the University of Florida's principal investigator for the project, Dr. William Lindberg.

All patch reefs were deployed within a 100 square mile permitted area known as the Steinhatchee Fisheries Management Area (SFMA). The triangular permitted area is in federal waters of the Gulf of Mexico. These patch reef deployments now occur at depths between 32-53 feet.

In addition to funding the construction of 1,800 concrete cubes (450 patch reefs), vessel transport and site specific patch reef deployment by crane, funding for this task also included production of a lifting assembly unit with a quick release mechanism that simultaneously deployed by crane four, one ton concrete cube modules at a time as a standardized patch reef. These reef locations will not be made public since this is a research project intended for long term monitoring. Reef deployment guidance and oversight support was provided by research staff at the University of Florida under the direction of Dr. Lindberg.

Artificial Reef Monitoring Projects
The FWC is also funding the continuation of years two and three of the fish census monitoring of the 520-feet-long, steel-hulled, former missile tracking ship the General Hoyt Vandenberg , sunk as an artificial reef in 2009 six miles south of Key West. This monitoring project continues to document the changes in fish presence/absence and relative abundance and biomass over time at the Vandenberg artificial reef site and seven reference reef sites for years two and three of the new reef. The Vandenberg rests in 135 feet of water about six miles south of Key West at 24º 27.60' N latitude and 81º 44.25' W longitude. The Reef Environmental Education Foundation (REEF) is performing the fish census activities.

The FWC Artificial Reef program is also providing funding to the University of West Florida to conduct acoustic tracking of selected reef fishes associated with modular concrete and concrete and steel units located in 110-130 feet of water in the EEZ within the Escambia East Large Area Artificial Reef Site, 15 nautical miles south of Pensacola Pass. Work is expected to be conducted during fall/winter 2011. The project will conduct a multidisciplinary, process-oriented study using an acoustic array of 16 Vemco VR2 receivers deployed in a defined pattern over a 22 km2 area to continue work on the ecological function of small artificial reef patch reefs deployed by the FWC in 2003. Twenty-five reef fish will be tagged and tracked over a three-month period to produce three-dimensional tracks

of fish and estimate home ranges and factors effecting tagged fish. Results of this study will add to our knowledge of reef fish ecology on small-scale artificial reefs off the Florida Panhandle.

The FWC and Escambia County will continue sampling legal-size recreationally targeted reef fish (red snapper, grey triggerfish, red and whitebone porgy, vermilion snapper, grouper) for PCB analysis (using skin-on lateral muscle tissue fillets) in compliance with requirements of the EPA risk-based PCB disposal permit for the ex-U.S.S. Oriskany (CVA-34), sunk as an artificial reef in 212 feet of water 22.5 nautical miles off Pensacola Pass on May 17, 2006. Between December 14, 2006, and November 18, 2010, eight reef fish sample collection events were completed, four during the spring and four during late fall/winter. The 254 retained reef fish from the Oriskany Reef through sampling round eight included seven reef fish species: 184 red snapper, 42 vermilion snapper, 14 red porgy, six whitebone porgy, four scamp grouper, two gray triggerfish, and one red grouper. Six of seven species (all but the lone red grouper sample) during one or more of the eight sampling rounds had one of more specimens whose total PCB concentrations exceeded the Florida Department of Health (FDOH) PCB screening level of 50 parts per billion and the EPA Tier 1 monitoring screening threshold of 20 parts per billion total PCBs.

Red snapper and vermilion snapper were the only two reef fish species providing enough information to evaluate mean total PCB concentration trends over the first eight sampling rounds. During the first four sampling rounds, red snapper total PCB concentration means remained above both FDOH and EPA screening thresholds, spiking during sampling round two. By sampling round five, red snapper mean total PCB levels had declined below the FDOH threshold but remained above the EPA Tier 1 screening threshold. During sampling rounds six through eight, mean red snapper PCB concentration levels fell below both EPA and FDOH total PCB screening thresholds. Mean vermilion snapper levels remained consistently below FDOH and EPA screening levels from the time they became available for capture through round eight. The benthic insectivores red porgy and whitebone porgy continued through sampling round eight to have individual specimens with elevated PCB levels above EPA screening levels, or in some cases exceeding FDOH screening levels through sampling round eight. However, sample sizes were small for red and whitebone porgy and there was considerable variability in PCB concentrations among individual porgy specimens. The highest recorded total PCB concentrations for any of the individual 254 Oriskany Reef PCB sampled fish were from red porgy (1,654.7 parts per billion (ppb) during sampling round four and 1,222.7 ppb in sampling round eight). These individual Oriskany Reef fish had total PCB levels 24 to 33 times higher than the FDOH screening level. Only four legal size piscivorous grouper (scamp) were available for capture at the Oriskany Reef with two of three captured in sampling round eight exceeding the FDOH screening threshold (highest concentrations 208.7 ppb and 94.1 ppb respectively).

The downward trends of mean red snapper total PCB concentrations to below EPA and FDOH screening levels at the Oriskany Reef and the consistently low vermilion snapper mean PCB levels presently do not require any fish consumption advisory action to be taken. The remaining species (triggerfish, groupers, porgy) represent too few specimens sampled at the Oriskany Reef with too great a PCB variability among individuals of the same species to take any species.

Oriskany Reef sampling and monitoring will continue. Forty reef fish specimens from sample round nine collected from the Oriskany Reef on April 29, 2011, (4.9 years post-deployment) are presently undergoing analysis with results expected by the end of August 2011.

Additionally, 10 underwater visual assessments were conducted on the Oriskany Reef over the past few years by FWC divers, confirming that the observed recreationally targeted species found on the Oriskany are well represented among the fish retained for PCB analysis. Visual observations by FWC divers also documented that the Oriskany Reef had settled into the sediments about 10 feet at 2.5 years post-deployment and sustained minor structural change to the exterior covering of the smoke stack at 3.5 years post-deployment

following the tropical storm events of 2007 and 2008, respectively.

Monitoring Compliance with the Marine Fisheries Trip Ticket Reporting Requirements Through Audits of Applicable Fish House Records

Monitoring the compliance with marine fisheries trip ticket reporting requirements ensures accurate fisheries information.

Five complete audits of wholesale dealers were conducted. Two additional complete audits of wholesale dealers were conducted jointly with FWC and NOAA Law Enforcement. Four other audit activities were conducted with FWC Law Enforcement, NOAA Law Enforcement, and/or US Fish and Wildlife Law Enforcement. Sixteen audit investigations were conducted related to possible fraudulent trip records submission reported by FWC or NOAA Law Enforcement. As many as 136 wholesale dealers received delinquent reporting notices. Fifty-four petitions for informal administrative hearings were received, 25 informal hearings were conducted and adjudicated, and seven petitions for informal hearings resulted in settlement agreements (22 remain). As many as 506 business emails were sent responding to audit related activities.

Administrative Penalty Assessments for Violations of Specified Fisheries Regulations, Retrieval of Specified Fisheries Regulations, Retrieval of Lost and Abandoned Spiny Lobster, Stone Crab and Blue Crab Traps

Florida statutes specify administrative penalties for violations of specific fishery regulations.

Seventy-one administrative penalties were assessed for a total of $214,275. Three of the administrative penalties were rescinded (totaling $10,000). Penalties paid totaled $17,575. Forty-eight of the administrative penalties (68%) were for net violations and seven (10%) were for untagged crab traps, five (7%) were for lobster trap molestation, five (7%) were for wholesale dealer violations and six (8%) were license holder warnings.

The FWC currently has two programs dedicated to removing lost and abandoned traps from state waters. The Spiny Lobster, Stone Crab, and Blue Crab Trap Retrieval Program contracts commercial fishermen to remove fishable traps from state waters during closed seasons. The Derelict Trap and Trap Debris Removal Program provide a mechanism to authorize volunteer groups to collect derelict traps and trap debris during open or closed seasons.

Blue crab, stone crab, and spiny lobster have a number of trap restrictions and/or tagging requirements. Trap retrieval programs were conducted with revenues paid from fees received by these fisheries. Twenty-nine trap retrieval trips were conducted (six for blue crab and 23 for stone crab and lobster) where a total of 2,641 traps (219 for blue crab and 2,641 for stone crab and lobster) were retrieved for a total expenditure of $60,860. Additionally, eight debris removal authorizations resulted in removal of 3,644 traps.

Issuance of Special Activity Permits

The marine fisheries special activity license program issues licenses for activities that require a waiver of marine fisheries regulations.

Three hundred five Special Activity Licenses were issued (237) or amended (68). Forty four percent (134) were for scientific research, 31% (95) were for education and or exhibition, and 18% (54) were for tournament catch, hold and release (remainder were for aquaculture brood stock (three), denied (five), dredge (one), gear innovation (one), stock collection and release (seven) and withdrawn (five).

Florida Fish and Wildlife Research Institute

Director: Gil McRae

Finfish

The Florida Fish and Wildlife Institute exists to provide timely information and guidance to protect, conserve and manage Florida's fish and wildlife resources through effective research and technical knowledge.

We continued our efforts to monitor and characterize the recreational snook fishery in Florida and to conduct studies to establish movements and exchange rates between groups of snook inhabiting

freshwater, estuarine, and coastal reef habitats and also between the major estuarine systems. We also expanded our biological sampling of snook for age and reproductive status into riverine and offshore areas not previously sampled. Monitoring of spotted seatrout courtship sounds at a key spawning site was continued and a pilot project to evaluate red drum spawning sites and site fidelity off the mouth of Tampa Bay was continued, using a similar combination of acoustic telemetry and passive acoustic monitoring as used in our spotted seatrout spawning studies.

Studies of Florida's permit fishery were initiated, with an emphasis on developing a better understanding of the fishery and examining population movements and stock structure using both conventional and genetic tagging studies. Our studies of movements, habitat fidelity, and home ranges of recreationally important reef fish species in the Florida Keys were continued, as was our effort to identify and document spawning sites of the mutton snapper (*Lutjanis analis*) and other reef fish species.

We also continued a field study to provide quantitative information on habitat associations and movement patterns of goliath grouper (*Epinephelus itajara*) within the central eastern Gulf of Mexico, as well as initiating a catch and release mortality study and continuing our opportunistic collection of life history information from specimens made available through natural mortality events or enforcement actions of this protected species. Lastly, we began development of a histological atlas of Florida reef fish using samples from FWRI's West Florida Shelf reef fish surveys.

Mollusks

Bay scallop (*Argopecten irradians*) population monitoring and restoration is ongoing from Pine Island Sound to St. Andrew Bay, with success evaluated via surveys of adult abundance and recruitment patterns. All of the areas open to harvest that were surveyed in 2011 were classified as healthy except the St. Mark's region, which was in a transitional status (showing signs of recovery after low densities in 2009 and 2010). The 2011 harvest season opened six days early compared to the 2010 season, which opened 11 days early. The 2011 season was also extended to September 25, elongating the season by 21 days total in 2011.

We will conduct a post-season survey for the first time since 2003 (Steinhatchee), 2005 (St. Joe Bay and Homosassa) and 2007 (Anclote and St. Andrew Bay) to assess mortality rates in both open-harvest and closed populations. The two monitored populations in the region potentially affected by the Deepwater Horizon oil spill (St. Andrew Bay and St. Joe Bay) had densities in 2011 that exceeded those in 2010, and also had higher recruitment levels, suggesting no immediate impact. Scallop densities in most closed areas were at the highest levels seen since surveys were initiated in 1994. But two populations, Tampa Bay and Sarasota Bay, were at their lowest since surveys started there in 2007, suggesting the population in the southwest region has not fully recovered despite restoration efforts. These efforts are organized with the cooperation of FWRI, but are largely funded through micro-grants and other fundraisers by volunteer-based organizations.

Oyster (*Crassostrea virginica*) population assessment studies are being conducted in southeast Florida as part of the Comprehensive Everglades Restoration Program and also as a component of a federally-funded (ARRA) oyster restoration in St. Lucie County. Additional studies of Gulf of Mexico oysters were initiated as part of two actions related to the Deepwater Horizon oil spill: a rapid-response study meant to establish base-line metrics (which will be useful in comparing data from several Florida Gulf estuaries) and, also, as part of the Federal NRDA response. FWRI is also participating in updating the FMP for Gulf oysters. A draft version of the plan is complete and is being prepared for public comment and the 2012 GSMFC review process.

Crustaceans

Research into lipofuscin age determination of Florida blue crabs continues with investigation into the correlation of lipofuscin accumulation and chronological age. The investigation into the effect of the Blue Crab Effort Management Plan (BCEMP) on commercial blue crab effort and landings continues to track annual changes

in landings, license renewals and traps tags post-BCEMP implementation. A statewide disease monitoring program, using histology and qPCR for the detection of Hematodinium sp. in wild populations of blue crabs continues. This program is working to understand the role of this disease in the natural mortality of blue crab populations.

We continue to identify horseshoe crab spawning beaches and collect spawning site information through an online reporting system. This reporting system continues to demonstrate annual increases in public participation and has revealed new spawning sites throughout the state.

The stone crab fishery-independent monitoring program continues at nine locations along the west Florida coast. This program gathers fishery independent data on the stocks exploited in this claws-only fishery. Since the implementation of this program, sufficient data has been collected to suggest fishery specific trends that are currently being integrated into the 2012 stock assessment.
This year, Florida has experienced an increase in the reporting of Giant Tiger Prawn, Penaeus monodon, from the Panhandle and East coast of the state. We have distributed press releases and contact information statewide to encourage reporting from recreational and commercial fishermen. The extent of this exotic invasive population is unknown.

Fisheries Genetics

With angler assistance, we continued to use DNA markers to genetically track individual tarpon in capture/recapture studies in Florida. To date, about 9,000 samples from caught-and-released tarpon have been obtained and genotyped. The majority of movements for recaptured tarpon have occurred over small distances (less than 10 km); however, some have occurred over large distances (e.g., from the Tampa Bay area to the Florida Keys).

Analyses of genetic data for spiny lobster and common snook continued. We also continued to examine the distributions of bonefish species inhabiting Florida and are completing the formal description of a newly discovered bonefish species, which occurs in south Florida, Mexico, and some Caribbean locations (Wallace and Tringali. 2010. J. Fish. Biol. 76:1972-1983). Mean single-generation dispersal distances were estimated for members of sand seatrout populations along Florida's Gulf of Mexico coast. Observed patterns of genetic heterogeneity conformed to an isolation-by-distance model of gene flow, and individual sand seatrout can be expected, on average, to disperse from natal locations a distance of about 80 km. The genetic effective population size for the west-central Florida stock of Gulf of Mexico red drum was determined based on genotype data from more than 23,000 wild red drum (New= 48,580; 95% CI = 32,720 to 86,830). The effective size of hatchery red drum released during Project Tampa Bay was computed based on genotype data from more than 2,200 hatchery recaptures (Neh= 34; 95% CI = 32 to 36). Using 29 microsatellite DNA markers, about 250 specimens of hogfish from the Florida Atlantic and west-central Florida Gulf of Mexico were tested to ascertain levels of geographic connectivity. Spatially-associated genetic differentiation was not observed over the sampled range. For spotted seatrout, approximately 500 breeding adults and 650 young of the year from Tampa Bay were genotyped for mark/recapture and kinship studies, which are ongoing.

Fisheries Statistics

Fisheries-independent monitoring (FIM) of fish continues in Tampa Bay, Charlotte Harbor, Indian River Lagoon, Cedar Key, Apalachicola, and Northeast Florida. The FIM program uses a systematic sampling strategy to collect fish free from the biases associated with collecting data from recreational and commercial fisheries. Data has been used for numerous stock assessments for several inshore species. Staff has spent much time developing models that describe fish abundance associated with different habitats. Additionally, staff in this program have been involved in the mercury concentration in fish program, fish health assessment, environmental health and fish diets, as well as studying fish from the rivers feeding Charlotte Harbor and Tampa Bay. We have continued to work on expanding our FIM program into reef areas along the coast.

During 2010-2011, preliminary numbers indicate Florida commercial landings from 216,902 commercial fishing trips totaled approximately 95.4 million (M) pounds of fish, crab, clams

(wild harvest only, excludes aquaculture), lobster, shrimp and other invertebrates worth over $200 M in dockside value. Marine life landings (live fish and invertebrates for aquaria and other uses) from 5,601 commercial collecting trips in 2010-11 amounted to 8.2 M individual specimens worth nearly $2.9 M in dockside value. The top 10 species in dockside value harvested during 2010-11 in Florida were: Caribbean spiny lobster ($38.3 M), stone crab (claws: $25 M), pink shrimp ($13.8 M), red grouper ($12.4 M), blue crab (including soft-shell crabs; $12 M), white shrimp ($10.5 M), king mackerel ($8.7 M), bait shrimp ($7.4 M), oysters ($6.7 M) and black mullet ($5.9 M). The total commercial harvest of food shrimp in Florida was 17.4 M pounds (heads on; $34.7 M dockside value) in 2010-2011.

Stock Enhancement Research

Preliminary designs for future marine eco-centers were completed for sites in Escambia and Walton counties in the panhandle. Demolition of buildings and progress on the youth development center and aquatic plant nurseries were ongoing at the New Smyrna Beach Ecocenter. Planning continued for development of an intensive marine hatchery for Tampa Bay. A fourth trial of intensive culture of juvenile red drum *Sciaenops ocellatus* was completed evaluating new equipment to optimize oxygen levels in circular culture tanks. We continued to make improvements to transition existing culture capabilities from extensive to intensive. A new, six-tank production system for intensive culture of larval red drum was completed in the intensive culture lab. Larval red drum were stocked into these tanks to develop husbandry protocols for indoor, phase-I production. We continued coordination with the crustacean group for an aging study for blue crabs (*Callinectes sapidus*) in pond 16 and greenhouse two. There were no snook or red drum releases during this period. Spartina plugs (33,000) and shoots (10,000) were harvested from the hatchery effluent treatment marsh for shoreline restoration or nurseries at six locations throughout Tampa Bay.

Marine Fish and Shellfish Health

Fish and Wildlife Health (FWH) staff in St. Petersburg monitors the health of aquatic organisms throughout the state. During the 2010-2011 fiscal year, the FWH group conducted necropsies (laboratory or field examinations of fish to collect health data) on 794 specimens that covered four project aspects: 1) event response (n=185), 2) health monitoring (n=257), 3) special projects (n=171) and 4) stock enhancement support (n=181).

Event response specimens (23%) were evaluated as part of fish kill investigations or other fish and wildlife health related events. Health monitoring specimens (32%) were collected primarily by Fisheries Independent Monitoring (FIM) as part of our collaborative disease surveillance efforts, and were submitted to FWH because they exhibited gross external abnormalities or because we requested apparently healthy specimens to fulfill our objective to develop health profiles for sport fish. Fish categorized under special projects (22%) included sport fish collected for parasitological analysis to study parasites that may impact potential aquaculture species. Fish examined for stock enhancement purposes (23%) were evaluated in support of the Florida Marine Fisheries Enhancement Initiative (FMFEI). These fish came from trial re-circulating aquaculture systems from our Stock Enhancement Research Facility.

The statewide, toll-free Fish Kill Hotline (1-800-636-0511) and our web-based fish kill reporting form allow the public to report aquatic mortality and disease events directly to scientists, who can respond immediately to their concerns. Since its inception, the FWH group has received and responded to over 17,419 reports/information requests (hereafter referred to as reports). In 2010-2011, a total of 1,743 reports were received by FWH fish kill hotline, through the FWRI website or via direct calls. Approximately 36% of reports were related to unique fish kills, 32% referred to previously reported fish kills, 16% of the calls were concerning information relevant to FKH data or educational inquiries and the remaining 16% fell into other categories.

Sixteen sites were investigated for fish kills. A fish kill was considered an “event” when it was politically, economically, or ecologically significant. Four events were identified during the

2010-2011 period. A multispecies kill affecting primarily adult red drum (*Sciaenops ocellatus*) along 30 miles of the St John's River persisted from the end of May 2010 to the beginning of July. We received 338 reports and/or information requests about the fish kill. The chronic fish kill was triggered by a significant reverse flow event, salinity influx, and a cyanobacteria bloom die off. A multi-agency investigation and community conversation with Senator John Thrasher and Jacksonville officials helped explain the event cause and address public concerns. Another event, an epizootic affecting mullet (*Mugil cephalus*), shad (*Dorosoma cepedianum*) and menhaden (*Brevoortia sp.),* was confirmed to be caused by the pathogen *Aphanomyces invadans,* an OIE (Office International Epizootics) reportable aquatic animal disease (n=17). The third event (n=54) was caused by a viral pathogen affecting only hardhead catfish (*Arius felis*). Finally, cold kills resulted in 107 fish kill reports.

Marine Mammals

FWC documented a record number of manatee carcasses in Florida during 2010 (n = 766). Preliminarily, 281 of the cause of death determinations in 2010 were related to cold stress and 83 were watercraft related fatalities. Statewide manatee rescues in 2010 were also a record high (n = 107). Through September 2011, 380 manatee deaths (YTD) were reported in Florida. Of those, 72 were related to watercraft and 109 were related to cold stress. Perinatal deaths (n = 65 YTD) included some cases related to cold stress.

A statewide "synoptic" survey was flown in 2011 and a count of 4,834 manatees was recorded. This is considered to be a minimum count and does not provide a population estimate. An important objective within the state Manatee Management Plan includes improving these methods and implementing statistically sound methods to estimate the manatee population.

During the 2010-2011 North Atlantic right whale calving season (December 01, 2010 –March 31, 2011) staff coordinated and conducted aerial surveys off the coastal waters of Florida in an effort to alert vessels to the presence of right whales, monitor calf production, identify unique individuals, and describe whale distribution and habitat. Twenty mother/calf pairs were documented during the 2010/2011 North Atlantic right whale calving season. One additional cow-calf pair was sighted for the first time in Rhode Island Sound in April 2011. Six entanglement related events were documented in the southeastern U.S. during the 2010-2011 calving season, four off Florida. In collaboration with Georgia Department of Natural Resources, staff conducted 22 right whale biopsy sampling trips resulting in samples from 13 calves and several previously unsampled juvenile and adult whales.

Division of Habitat and Species Conservation

Director: Tim Breaux (Retired)/
Eric Sutton (Appointed September 2011)

Imperiled Species Management

The Imperiled Species Management Section (ISM) in this Division is responsible for the planning and implementation of management activities directed toward the protection and recovery of manatees, right whales and five species of marine turtles. Marine turtle activities are funded from the Marine Resources Conservation Trust Fund. Manatee and right whale protection efforts are funded from the Save the Manatee Trust Fund.

Marine Turtles

The Imperiled Species Management Section (ISM) implements tasks from recovery plans for five species of marine turtles. The activities are focused in five program areas.

1. Review of and commenting for state and federal-permitted activities to minimize negative impacts to marine turtles and their nesting habitat.
2. Provide permits to individuals, organizations and facilities that conduct research or conservation activities or keep captive marine turtles.
3. Assist local governments and private sector in efforts to reduce impacts of lights and other disturbances on marine turtle nesting.
4. Development of longer term conservation strategies such as Habitat Conservation Plans (HCPs).
5. Outreach activities to provide current

information to the public and promote conservation stewardship.

6. Respond to unusual or catastrophic events that impact marine turtles.

Accomplishments

- Staff participated in the January 2011 cold stun event that impacted marine turtles in the Florida Panhandle and the Atlantic coast. During the January cold stun event, staff retrieved animals from St. Joseph Bay in Gulf County, transported them to Gulf World Marine Park in Panama City for rehabilitation, and then assisted in the release of animals. Tequesta program staff was integral in processing, transport, and release of animals retrieved from peninsular Florida, including Mosquito Lagoon and other areas along the Atlantic Coast. Staff also participated in various activities that resulted from the 2010 catastrophic Deepwater Horizon event. Staff continued to participate in Technical Working Groups (TWGs) for Natural Resource Damage Assessment (NRDA) planning.
- ISM staff served on the Marine Turtle Grants Committee. This program awarded approximately $306,000 in grants to Florida conservation groups, local governments, and educational institutions based on funds generated by the sale of the sea turtle license plate. ISM staff also managed the review of Marine Turtle Permit applications and the approval process for grant requests for projects requiring such permits.
- Upon request, staff also conducted educational presentations at schools and meetings of local conservation groups, home owners associations and other interested groups concerning marine turtles, lights, and other impacts.
- Staff reviewed and approved approximately 190 applications for conservation activities with marine turtles, including nesting beach surveys, stranding and salvage work, research, public turtle walks, rehabilitation at captive facilities, and educational display.
- FWC authorized captive facilities to hold marine turtles for rehabilitation (14), for educational display (17) or for research (two). Staff coordinated transfer and release of marine turtles during rehabilitation and supervised public sea turtle releases.
- Staff continued to monitor captive facilities in the state that rehabilitate marine turtles or hold turtles (loggerhead and non-releasable turtles only) for educational purposes.
- Staff reviewed approximately 244 applications submitted to the Florida Department of Environmental Protection's (DEP) District Offices, DEP's Bureau of Beaches and Coastal Systems, the Water Management Districts, and the State Clearing House. Projects reviewed included Coastal Construction Control Line applications, Environmental Resource Permit applications, and Joint Coastal Permit applications.
- Staff participated in over 416 meetings and conference calls on these projects and on other issues involving marine turtles with staff from local governments, other state and federal agencies, and stakeholders on specific projects and marine turtle conservation issues.
- Staff conducted more than 70 site inspections as part of our environmental commenting responsibilities, including lighting inspections at the invitation of local governments and property owners. Program staff also participated in one administrative hearing.
- Staff participated in the design, implementation, and review of monitoring plans required to assess the impacts of permitted activities on marine turtles, their nests, and hatchlings. Staff worked with DEP on a report to the legislature on sea turtle monitoring required by state and federal permitting agencies as part of beach nourishment projects.
- FWC staff was invited to participate as an expert for the U.S. Fish and Wildlife Service and Army Corps of Engineer's Team on the Programmatic Biological

Opinion for beach restoration. Staff served on the following teams, working groups, and committees: Archie Carr Sea Turtle Refuge Working Group, Archie Carr Beach Nourishment Meeting Committee, FWC's Coastal Wildlife Conservation Initiative, the FWC Permitting and Wildlife Friendly Teams and the Marine Turtle Grants Committee.

- Staff continues to work with federal, county, and municipal organizations to minimize lighting impacts on marine turtles. Staff managed the hatchling disorientation database, contacted local governments, and helped to formulate appropriate actions to resolve problem lights on Florida's nesting beaches. Staff conducted numerous nighttime lighting inspections to identify problematic light sources and provide recommendations for potential solutions for each problematic light.
- FWC staff hosted the 2011 Marine Turtle Permit Holder Workshop in Melbourne Beach for approximately 350 Marine Turtle Permit Holders, volunteers, local government, state and federal agency staff. This two-day event included approximately 15 presentations by agency management and research staff, conservation organizations and local governments, as well as, summaries of Marine Turtle Grant projects.
- Staff responded to requests for educational materials concerning marine turtles and provided copies of educational brochures, posters, rack cards, and other information.
- Staff created a colorful decal featuring a photograph of a hawksbill sea turtle. This decal, number 20 of a series, was distributed to local tax collectors' offices across Florida. Funds from the sale of this decal support FWC's marine turtle program.
- Through a Marine Turtle Lighting course, which was developed jointly with the USFWS, FWC staff was able to provide information on marine turtles and lights to a variety of entities across peninsular and panhandle Florida. Lighting workshops were presented to an audience of local government, code enforcement, private property owners, state agency staff, marine turtle permit holders, county employees, lighting consultants, insurance companies, and interested citizens. These workshops were hosted by different organizations around the state, including Collier, Volusia, and Sarasota counties.
- Staff is administering four grants, including $416,000 from the U.S. Fish and Wildlife Service for Walton County's Habitat Conservation Plan, $25,000, from the National Marine Fisheries Service to assist captive facilities to obtain medical supplies to treat injured and sick marine turtles, and $87,000 from the Florida DEP Coastal Zone Management Program for improvements in coastal armoring designs to minimize impacts to marine turtles and their nesting habitat. Staff also assisted the Wildlife Foundation of Florida and two local governments, the city of Deerfield Beach and city of Venice, to obtain funds from the National Fish and Wildlife Foundation for lighting improvements along their sea turtle nesting beaches. Grant management includes oversight of contracts to local governments and vendors as necessary.
- Staff offered a Wildlife Friendly Lighting Certification program for lighting companies to encourage development of products that meet the requirements to keep light low, long (wavelength) and shielded. Lights that meet certain specifications are featured on the FWC website as options for reducing impacts from artificial lights on marine turtles and other wildlife.

Manatees

The Imperiled Species Management Section (ISM) implements the tasks of the Florida Manatee Recovery Plan and the newly approved state Manatee Management Plan (2007). The activities are focused in six program areas.

1. Development and implementation of county-based manatee protection plans (MPPs).
2. Promulgation of boat speed regulations to

protect manatees.

3. Review of permitted activities to minimize negative impacts to manatees.
4. Various directed efforts to protect and enhance manatee habitat, particularly warm water refuges and sea grasses.
5. Outreach activities to provide current information to the public and promote conservation stewardship.
6. Stakeholder engagement to encourage participation and partnerships.

More details on the manatee program are available in the Save the Manatee Trust Fund Annual Report to the Legislature, which can be found at: http://www.myfwc.com/research/manatee/trust-fund/annual-reports/

Highlights

- Duval County MPP Revision Update: Work continues on revisions to the MPP and some portions have been drafted and are under review. A complete draft is expected in late 2011.
- Sarasota County drafted revisions to their MPP with assistance from FWC. The revised plan is scheduled for consideration by the Board of County Commissioners in July 2011.
- FWC also assisted Miami-Dade County, as they evaluate what revisions they may make to their MPP. FWC staff attended several Charlotte County Manatee Protection Plan Advisory Committee Group meetings and presented information in order to help them assess whether the county should develop an MPP. The Charlotte County Board of County Commissioners approved the development of an MPP in February 2011 at the recommendation of the advisory group. FWC is partnering with the county to help develop and draft the MPP.
- Staff produced 265 comment letters for development projects reviewed during the year and offered recommendations to reduce or eliminate potential adverse impacts to manatee from the proposed activities. Implementation of the Boat Facility citing portion of FWC approved MPPs is accomplished during the permit review process. Distribution of public information about manatees is also accomplished through these comments as facilities are required to post informational signs on manatees and distribute written materials to boat users.
- ISM coordinated with the USFWS regarding the revisions to the U.S. Army Corps of Engineers (ACOE) Manatee Key (revised in 2011) as well as the USFWS programmatic biological opinion, which was finalized in March 2011. These efforts should help streamline permit reviews.
- Amendments to the existing speed zones in Sarasota County were adopted in June 2010. Sign posting for the new zones was completed in summer 2011. In Broward and Flagler counties, the rule making process that began last year has proceeded and both local rule review committees completed their reports to the agency. For Broward County, staff published a proposed rule, held a public hearing in the county and received public input. Presentation of the final rule was made at the September 2011 FWC Commission meeting. The rule for Flagler County is still being developed in cooperation with the county and the USFWS.
- Structure Related Manatee Deaths have totaled 198 (since 1974) as a result of interactions with the numerous water control structures located on the state's waterways. The annual average structure related deaths pre-retrofitting has decreased from an average of 6.5 manatees/year (1974-1999) to a post-retrofitting average of 2.1 manatees/year (2000-2010). There is only one remaining water-control structure requiring the installation of a manatee protection device and this structure will begin retrofitting during late 2011. Overall, coordinated efforts are having a significant influence on reducing structure-caused mortality at retrofitted structures.
- FWC is working with the Water Management Districts in the development of Minimum Flows and Levels (MFLs) for spring systems that provide warm-water

habitat for manatees. MFLs for Volusia Blue Spring, Manatee Springs, Fanning Springs, and the Weeki Wachee Spring system have all been developed using criteria to protect winter warm-water manatee use. MFLs for the Homosassa River and the Chassahowitzka River were reviewed and FWC comments were provided in 2010.

- FWC has identified a potential restoration project at Fanning Springs that will enhance access to the spring for manatees and Gulf sturgeon. Currently, TNC has provided funding for an engineering feasibility study and FWC will provide funding to complete the project during the 2011-2012 funding cycle. The Fanning Spring restoration project has completed the engineering design phase and FWC has received all construction permits. The project is on schedule to be completed by the end of 2011.
- FWC worked with Florida Power and Light (FPL) to ensure that the heating systems that create interim warm-water refuges during the conversions of the Cape Canaveral and Riviera Beach power plants provided the necessary refuge to manatees. This was the first winter when the plants would no longer discharge warm water due to plant reconstruction projects. Although there were initial difficulties creating a sufficient warm-water refuge at the Cape Canaveral plant, FWC and FPL partnered on solutions that quickly resolved the issues, and manatees survived an extremely cold winter at this refuge. Manatee distribution data was collected via aerial surveys and manatee movement data was collected from satellite tagged manatees, providing information regarding how manatees responded to the changes in warm water availability during the winter cold season. In addition, daily health assessments at the interim warm-water refuge were completed to determine if any manatees suffered from cold-stress related symptoms and whether the interim warm-water refuge moderated those symptoms.
- FWC coordinated with power companies during this past winter to insure that individual power plants were adhering to their operational National Pollutant Discharge Elimination System mandated Manatee Protection Plans. Although the power plants maintained warm-water discharges through most of the winter, the extreme cold of 2010 resulted in numerous mechanical difficulties that complicated the operation of power plants throughout the state. These complications provided additional difficulties for manatees seeking consistent warm-water habitat. FWC will hold annual meetings with the power companies to facilitate ongoing communication.

Educational activities for manatee conservation included the distribution of brochures and other informational materials to local governments, stakeholders, conservation groups, marinas, schools, libraries, and the general public. Staff responded to 175 requests for printed materials.

Florida Department of Agriculture and Consumer Services

Adam H. Putnam, Commissioner

Division of Aquaculture

Leslie Palmer, Director

The Division of Aquaculture conducts numerous activities to promote the development of aquaculture and ensure the quality of aquaculture and shellfish products in Florida. These activities include regulatory, administrative, advisory, and technical functions directed toward ensuring that aquaculture operations are compatible with the Florida Aquaculture Plan, Aquaculture Certification Program, best management practices, resource management goals, and public health protection. The Division provides several primary service programs to support aquaculture and shellfish resource development:

1. Aquaculture Certification Program;
2. Sovereignty Submerged Lands Aquaculture Leasing Program;
3. Oyster Culture and Shellfish Resource Development Program;

4. Shellfish Sanitation;
5. Shellfish Environmental Assessment; and
6. Technical Support Program (Ombudsman, training, technical outreach, grants).

The Division has been very progressive in its support of aquacultural development as a practicable alternative to commercial fishing and conventional agriculture to foster economic development in rural and coastal communities. The Division's programs offer unique and essential services to this emerging sector of Florida's agriculture community.

These programs provide the regulatory framework for aquacultural operations and public health protection, provide specific farming areas on state-owned submerged lands, and provide responsible stewardship for Florida's natural aquatic resources.

During FY 2010/2011, the Division continued its commitment to encourage the development of the aquaculture and shellfish industries in Florida. This commitment is based on the belief that aquaculture will become an integral segment of Florida's agricultural and economic future by providing high quality aquacultural products to worldwide markets while advancing resource management.

The following is a summary of the activities related to aquaculture and shellfish resource management carried out by the Bureau of Aquaculture Development and the Bureau of Aquaculture Environmental Services during fiscal year 2010/2011.

Bureau of Aquaculture Development

Aquaculture Certification Program

Chapter 597, Florida Statutes (F.S.) established the Aquaculture Certificate of Registration to recognize aqua-farming businesses. Aquacultural businesses in Florida are required to be certified annually and to attest that they will comply with the best management practices provided in Chapter 5L-3, Florida Administrative Code (F.A.C.). The aquaculture certificate is used to identify aquaculture producers as members of Florida's agricultural community and to identify aquacultural products produced in the state.

The Aquaculture Certificate of Registration is linked to the Best Management Practices Program. Best management practices have been established by and for the aquaculture industry and represent the most appropriate and practical framework for Florida's diverse aquaculture businesses. Site inspections are conducted at aquaculture facilities to ensure compliance with best management practices. Staff is trained to provide a standardized evaluation based on compliance with established best management practices.

The Division certified 913 aquaculture facilities during FY 2010/2011. Shellfish producers (364 farmers) make up 40% of the certified farms, 195 ornamental producers make up 21% of the certified farms, 219 food fish producers make up 24% of the certified farms, with the remaining producing live rock, alligators, and bait. Certified farms are found in 61 of the state's 67 counties: with the highest number of certified farms occurring in Levy County (21%) and Hillsborough County (9%).

Sovereignty Submerged Lands Aquaculture Leasing Program

The Division is responsible for the Aquaculture Lease Program under the provisions in Chapter 253, F.S. During FY 2010/2011, the Division administered 521 aquaculture leases containing about 1,180 acres and 60 shellfish leases containing about 1,027 acres. Aquaculture and shellfish leases are located in 17 counties, including: Bay, Brevard, Charlotte, Collier, Dixie, Franklin, Gulf, Indian River, Lee, Levy, Manatee, Monroe, Palm Beach, Pinellas, Santa Rosa, St. Johns, and Volusia Counties. In response to its statutory mandate, the Division identifies tracts of submerged lands throughout the state that are suitable for aquacultural development. Twenty special aquaculture use areas have been identified by the Division and authorized by the Board of Trustees in nine coastal counties.

Unlike many upland agricultural ventures that are conducted on privately-held lands, marine aquaculture must be conducted on or over submerged lands that are largely held in the public domain. Since only an insignificant amount of suitable submerged acreage is privately owned, marine aqua-farmers are uniquely dependent

upon the use of public lands to grow their crops. Accordingly, the Department must act on behalf of the Governor and Cabinet to administer and manage these public lands in the best interest of the people of Florida, including protecting valuable natural resources.

The Aquaculture Lease Program supports marine aquaculture in a very unique way, and producing hard clams on sovereignty submerged lands is the largest marine aquaculture business in Florida. The most recent economic survey of hard clam processors (University of Florida, 2007) reported that 184 million clams were sold during 2007, accounting for about $41 million. Currently, there is little cumulative information available to determine the economic impacts from the Deep Water Horizon oil spill event on clam businesses in 2010 and 2011 in Florida.

Oyster Culture and Shellfish Resource Development Program

Under the mandate to improve, enlarge, and protect the oyster and clam resources of the state, the Division is actively engaged in enhancing shellfish resources and restoring oyster reefs on public submerged lands. During FY 2010/2011, the Division collected 193,488 bushels of processed oyster shell from processors located primarily in Franklin County and collected 21,216 bushels of clam shell from processors in Cedar Key. Shell planting operations accounted for the deposition of 8,499 cubic yards of processed and fossil shell on public oyster reefs in Franklin and Levy Counties. Oyster resource development projects involving the relaying and transplanting of live oysters were conducted in cooperation with local oystermen's associations in two coastal counties. A total of 99,678 bushels of live oysters were re-planted on public reefs in Dixie and Levy Counties.

Restoring Public Oyster Reefs

In 2006, the Department entered into a subcontract agreement with the Gulf States Marine Fisheries Commission (through NOAA) to restore oyster reefs adversely affected by hurricanes under the Emergency Disaster Recovery Program (EDRP). In 2010, the subcontract agreement was extended an additional year through September 2012. The $4.2 million contract provides for three project components: 1) restoring public oyster reefs, 2) providing economic assistance to oyster farmers, and 3) developing a scientific model to assess the success of oyster reef restoration efforts in the Pensacola Bay system. In 2010/2011, the Division continued to be actively engaged in restoring oyster reef habitat on numerous sites identified in the EDRP oyster restoration plan. Oyster reef restoration operations accounted for the deposition of 8,499 cubic yards of substrate materials on public oyster reefs in some of Florida's most productive estuaries.

Apalachicola Bay Oyster Harvesting License

An oyster harvesting license is required to harvest oysters from Apalachicola Bay. In 2011, 1,898 oyster harvesting licenses were sold, representing a 24% increase over the number of licenses sold in the preceding year. License sales demonstrate a trend in the increasing number of harvesting licenses sold, and represents the highest number of licenses sold since the license was established.

Technical Support Programs

Providing technical assistance to the aquaculture and shellfish industries is an important Division activity. Staff provides substantial technical and administrative support for aquacultural and shellfish operations through site visits, compliance inspections, technical meetings, conferences and workshops. Staff conducted more than 2,500 site visits and compliance inspections to assist aqua-farmers and shellfish processors.

Bureau of Aquaculture Environmental Services

Shellfish Sanitation and Environmental Assessment Programs

A total of 39 shellfish harvesting areas totaling 1,445,833 acres are currently classified and managed statewide. During FY 2010/2011, 565 sampling excursions were conducted to collect and analyze 11,663 water samples for fecal coliform bacteria. There were 316 management actions to close or re-open shellfish harvesting areas in accordance with the management plans for individual shellfish harvesting areas. During FY 2010/2011, a total of 91 Shellfish Processing

Plant Certification Licenses were issued and 380 regulatory processing plant inspections were conducted. Based on inspection results, 28 warning letters and five settlement agreements were issued.

LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF FISHERIES
Robert Barham, Secretary

The mission of the Louisiana Department of Wildlife and Fisheries (LDWF) Office of Fisheries is to conserve and protect Louisiana's renewable aquatic resources for present and future generations of Louisiana citizens by controlling harvest and replenishing and enhancing stocks and habitat. The mission is accomplished through the activities of programs within the Office of Fisheries: Shellfish (shrimp and crabs), Mollusc (oyster), Finfish, Habitat, and Research. The clients served by these programs include present and future generations of Louisiana citizens, as well as national and international interests that derive benefits from consumptive and non-consumptive use of Louisiana's fisheries resources. The Department recommends season, size, and possession limits or recommends other means of conserving key resources. Other conservation/protection methods include replenishing species and enhancing or developing species or habitats as needed to provide for the needs of consumptive and non-consumptive users or environmental health. The Department also conducts research to provide insight into the proper functioning of natural systems, educates the public, and promotes wise use of resources.

This report describes program activities that support this mission.

> **Disclaimer:** This report does not rely on information collected as part of the *Deepwater Horizon* Natural Resource Damage Assessment (NRDA), and is not intended to analyze impacts resulting from the *Deepwater Horizon* oil spill and related response for NRDA purposes.

Shellfish Program

The Marine Fisheries Division continued its long-term trawl sampling program throughout coastal Louisiana. Fishery biologists collected 643 six-foot trawl and 3,320 16-foot trawl samples from inshore and offshore waters. Data from these samples were used to recommend season frameworks for both the fall and spring inshore shrimp seasons and winter territorial sea shrimp seasons. In addition, these same data were used to recommend season extensions and special seasons and to provide recruitment indices for Gulf menhaden and blue crabs.

Shrimp

The Office has continued to administer an $119,533 federal grant (Interjurisdictional Assessment and Management of Louisiana Coastal Fisheries -NOAA/DOC Award No. NA07NMF4070050). The objective of the Interjurisdictional Fisheries Project is to maintain a coast-wide monitoring program for parameters relevant to important fisheries resources, including both population dynamics and associated hydrological and environmental parameters, and to use information gathered to make management decisions. Technical, biological, and hydrological data gathered from the monitoring program were used to establish seasonal frameworks within the shrimp and oyster fisheries, predict annual Gulf menhaden (*Brevoortia patronus*) abundance, and provide data for managing groundfishes and blue crabs (*Callinectes sapidus*). These data have provided estimates of size, density, and growth of juvenile penaeid shrimp on the nursery grounds and staging areas, movement of sub-adult shrimp from the nursery grounds to staging areas, and the abilities to correlate juvenile shrimp response and subsequent production to hydrologic conditions. Data collected from the monitoring program were crucial in establishing opening and closing dates for shrimp seasons within Louisiana inside and outside territorial waters during the fiscal year. Hydrological and biological data collected on oyster recruitment (spat set) and oyster density and availability estimates were used in formulating management recommendations regarding the oyster season on the public oyster seed grounds and seed reservations. Harvest estimates were determined from boarding report surveys of boats fishing the public seed grounds and seed

reservations. These data were compared with annual stock availabilities and previous production estimates calculated during the fiscal year.

Management Actions

Since 1975, LDWF has managed the shrimp fishery in inside waters using a shrimp management zone concept that has provided the flexibility needed to create staggered opening and closing dates, season extensions, special seasons, and special gear seasons between shrimp management zones. However, greater flexibility in managing the shrimp resource is now provided through the use of a basin type management approach. Louisiana's major estuarine basins include the Pontchartrain Basin, Mississippi River Basin, Barataria Basin, Terrebonne Basin, Atchafalaya River Basin, Vermilion-Teche River Basin, Mermentau River Basin, and Calcasieu and Sabine River Basins.

Shrimp Seasons

Based upon analysis of historic data as well as data from biological sampling by LDWF, the following management practices were implemented during the report period: data were used to set the opening and closing dates of the 2011 Spring inshore shrimp season, set opening and closing dates of the 2011 Fall inshore shrimp season, extend inshore seasons in portions of inside waters, and close and then reopen to shrimping portions of Louisiana outside territorial waters.

Recommendations for the opening dates of the spring shrimp season in inside waters are determined by projecting when 50% of the inshore population of brown shrimp (*Farfantepenaeus aztecus*) sampled within each basin are 100 count per pound or larger. Closure of the spring shrimp season in inside waters is based upon the relative abundance, percentage, and distribution of small juvenile white shrimp (*Litopenaeus setiferus*) taken in trawl samples. Recommendations for the opening and closing dates of state offshore territorial waters are based upon the number and size of over-wintering white shrimp sampled in outside waters.

Pontchartrain and eastern Mississippi River Basins

2010 – Fall Inshore Shrimp Season

Closed at sunset January 27, 2011 except for the open waters of Breton and Chandeleur Sounds which were scheduled to close at 6:00 a.m. March 31, 2011. The shrimp season in the open waters of Breton and Chandeleur Sounds as described by the double-rig line in LA R.S. 56:495.1(A)2 was extended and still remains open to shrimping.

2011 - Spring Inshore Shrimp Season

Opened at 6:00 a.m. May 16, 2011 in that portion of the basin from the northern shore of the Mississippi River Gulf Outlet (MRGO) southward to the eastern shore of South Pass of the Mississippi River.

Opened at 6:00 a.m. May 23, 2011 in the remainder of the basin.

Closed at 6:00 a.m. July 19, 2011 except in the following areas:

- Lake Pontchartrain, Rigolets Pass, Chef Menteur Pass, the Mississippi River Gulf Outlet (MRGO), that part of Lake Borgne seaward of a line extending one-half mile from the shoreline, and that portion of Mississippi Sound beginning at a point on the Louisiana-Mississippi Lateral Boundary at 30 degrees 09 minutes 39.6 seconds north latitude and 89 degrees 30 minutes 00.0 seconds west longitude; thence due south to a point at 30 degrees 05 minutes 00.0 seconds north latitude and 89 degrees 30 minutes 00.0 seconds west longitude; thence southeasterly to a point on the western shore of Three-Mile Pass at 30 degrees 03 minutes 00.0 seconds north latitude and 89 degrees 22 minutes 23.0 seconds west longitude; thence northeasterly to a point on Isle Au Pitre at 30 degrees 09 minutes 20.5 seconds north latitude and 89 degrees 11 minutes 15.5 seconds west longitude, which is a point on the double–rig line as described in R.S. 56:495.1(A)2; thence northerly along the double–rig line to a point on the Louisiana-Mississippi Lateral Boundary at 30 degrees

12 minutes 37.9056 seconds north latitude and 89 degrees 10 minutes 57.9725 seconds west longitude; thence westerly along the Louisiana-Mississippi Lateral Boundary to the point of beginning, and the open waters of Breton and Chandeleur Sounds as described by the double-rig line

Closed at 6:00 a.m. August 2, 2011 in the remainder of the basin except in the following areas:

- That portion of Mississippi Sound beginning at a point on the Louisiana-Mississippi Lateral Boundary at 30 degrees 09 minutes 39.6 seconds north latitude and 89 degrees 30 minutes 00.0 seconds west longitude; thence due south to a point at 30 degrees 05 minutes 00.0 seconds north latitude and 89 degrees 30 minutes 00.0 seconds west longitude; thence southeasterly to a point on the western shore of Three-Mile Pass at 30 degrees 03 minutes 00.0 seconds north latitude and 89 degrees 22 minutes 23.0 seconds west longitude; thence northeasterly to a point on Isle Au Pitre at 30 degrees 09 minutes 20.5 seconds north latitude and 89 degrees 11 minutes 15.5 seconds west longitude, which is a point on the double–rig line as described in R.S. 56:495.1(A)2; thence northerly along the double–rig line to a point on the Louisiana-Mississippi Lateral Boundary at 30 degrees 12 minutes 37.9056 seconds north latitude and 89 degrees 10 minutes 57.9725 seconds west longitude; thence westerly along the Louisiana-Mississippi Lateral Boundary to the point of beginning, and
- The open waters of Breton and Chandeleur Sounds as described by the double-rig line in R.S. 56:495.1(A)2

2011- Fall Inshore Shrimp Season

Opened at 6:00 a.m. August 22, 2011.

Closed at official sunset December 20, 2011 except in the following areas:

- The portion of the basin north of the southern shore of the Mississippi River Gulf Outlet (MRGO) including the Gulf Intracoastal Waterway (ICWW) north of the Parish Road Bridge
- The open waters of Breton and Chandeleur Sounds as described the double-rig line in R.S.56:495.1.(A)2

Closed at official sunset February 2, 2012 except in the open waters of Breton and Chandeleur Sounds as described the double-rig line in R.S.56:495.1.(A)2 which currently remain open to shrimping.

Western Mississippi River, Barataria, Terrebonne, Atchafalaya River and Vermilion-Teche River Basins

2011 – Special Spring Inshore Shrimp Season

Opened for five days beginning at 6:00 a.m. April 18, 2011 from the eastern shore of Bayou Grand Caillou northward to the intersection of Bayou Grand Caillou and the Houma Navigation Canal, northward along the eastern shore of the Houma Navigation Canal westward to the western shore of Vermilion Bay and Southwest Pass at Marsh Island.

Closed at 6:00 a.m. April 23, 2011.

Opened at 6:00 a.m. May 6, 2011 in state inside waters from the Atchafalaya River Ship Channel at Eugene Island as delineated by the Channel red buoy line westward to the western shore of Vermilion Bay and Southwest Pass at Marsh Island and remained open through the spring inshore shrimp season.

2011 – Spring Inshore Shrimp Season

Opened at 6:00 a.m. May 13, 2011 in those waters west of the western shore of Bayou Lafourche.

Opened at 6:00 a.m. May 13, 2011 in those waters east of the eastern shore of Bayou Lafourche to the eastern shore of South Pass of the Mississippi River.

Closed at 6:00 p.m. June 25, 2011 in state inside waters from the western shore of Bayou Lafourche westward to the eastern shore of the Atchafalaya River Ship Channel at Eugene Island as delineated

by the Channel Red Buoy line, with the exception of the following waters north of the Inside/Outside Shrimp Line:

- Those inshore waters south of 29 degrees 13 minutes 00 seconds north latitude from 90 degrees 18 minutes 00 seconds west longitude westward to 90 degrees 34 minutes 00 seconds west longitude
- Those inshore waters south of 29 degrees 06 minutes 00 seconds north latitude from 90 degrees 34 minutes 00 seconds west longitude westward to 90 degrees 46 minutes 00 seconds west longitude

Closed at 6:00 a.m. July 11, 2011 in state inside waters from the eastern shore of the Atchafalaya River Ship Channel at Eugene Island, as delineated by the Channel red buoy line, westward to the western shore of Vermilion Bay and Southwest Pass at Marsh Island and state inside waters from the eastern shore of South Pass of the Mississippi River westward to the western shore of Bayou Lafourche with the exception of the following waters north of the Inside/Outside Shrimp Line:

- Those inside waters south of 29 degrees 26 minutes 00 seconds north latitude from 89 degrees 50 minutes 30 seconds west longitude westward to the western shore of the Barataria Waterway.

Closed at 6:00 a.m. July 18, 2011 in the remainder of inside waters within these basins.

2011 – Fall Inshore Shrimp Season

Opened at 6:00 a.m. August 22, 2011.
Closed at official sunset December 20, 2011

Mermentau, Calcasieu and Sabine River Basins

2011 - Spring Inshore Shrimp Season

Opened at 6:00 a.m. May 16, 2011.

Closed at 6:00 a.m. July 18, 2011 with the exception of the following waters north of the Inside/Outside Shrimp Line:

- That portion of the Calcasieu Ship Channel originating at a line between Channel Markers 85 and 86 southward to a point originating along the inside/outside shrimp line at Calcasieu Pass as described in LA R.S.56:495(A) and including East Pass from its origin at the Calcasieu Ship Channel to the south end of Calcasieu Lake and West Pass from its origin at the Calcasieu Ship Channel to the south end of West Cove, and that portion of Cameron Parish west of Calcasieu Lake and the Calcasieu Ship Channel.

2011 – Fall Inshore Shrimp Season

Opened at 6:00 a.m. August 22, 2011

Closed at official sunset December 20, 2011

Offshore Shrimp Seasons
Opened at 6:00 a.m. April 18, 2011 in those waters south of the inside/outside shrimp line from the U.S. Coast Guard navigational light at Caillou Boca westward to the western shore of Freshwater Bayou Canal.

Closed at official sunset December 20, 2011 in state outside waters, south of the Inside/Outside Shrimp Line as described in LA R.S. 56:495, from the western shore of Freshwater Bayou Canal at 92 degrees 18 minutes 33 seconds west longitude to the U.S. Coast Guard navigational light off the northwest shore of Caillou Boca at 29 degrees 03 minutes 10 seconds north latitude and 90 degrees 50 minutes 27 seconds west longitude.

Landings and Value
Shrimp are Louisiana's most valuable commercial fishery, and Louisiana continues to lead the nation in shrimp landings. Louisiana shrimp landings in 2011, according to preliminary LDWF Trip Ticket data, totaled approximately 90.6 million pounds (all species combined/heads-on weight) with a dockside value of $131.5 million. Brown shrimp comprised approximately 42% of total shrimp landings while white shrimp landings comprised the remainder except for very small contributions from seabob (*Xiphopenaeus kroyeri*), pink shrimp (*Parfantepenaeus duorarum*), rock shrimp

(*Sicyonia brevirostris*) and royal red shrimp (*Menopenaeus robustus*).

Crabs

Louisiana commercial blue crab landings for 2011 totaled approximately 43.2 million pounds (preliminary LDWF Trip Ticket Data) with a dockside value of $36.8 million. Stone crab landings for 2011 were 1,613 pounds, however, the stone crab fishery in Louisiana is not a directed fishery and stone crabs are primarily taken as incidental bycatch within the blue crab fishery. Low prices associated with increased foreign imports of crabmeat remain a major issue in the fishery.

The major LDWF activity related to blue crabs in 2011 was directed to assisting the Louisiana Crab Task Force and Louisiana Seafood Promotion and Marketing Board in efforts to have the Louisiana blue crab fishery certified as sustainable under the Marine Stewardship Council (MSC).

In September, 2010, the LDWF did not recommend conducting a 2011 winter crab trap closure and derelict crab trap cleanup due to ongoing responses to the *Deepwater Horizon* oil spill, Natural Resource Damage Assessment (NRDA) planning and sampling and concerns with existing staffing and equipment limitations. However, in late January, 2011, Plaquemines Parish government formally requested the Secretary of LDWF and the Louisiana Wildlife and Fisheries Commission (LWFC) to temporarily close certain Plaquemines Parish waters to the use of crab traps for the purpose of conducting a trap cleanup. At its February 3, 2011 meeting, the LWFC adopted a declaration of emergency closing a portion of state waters located in Plaquemines Parish west of the Mississippi River to the use of crab traps for an eight-day period from February 26 – March 5, 2011. Due to extended fishing closures within these waters, large numbers of traps were abandoned posing additional hazards to recreational and commercial fishermen and boaters, and to crews conducting oil spill clean-up operations. Additionally, portions of the trap closure area occupy waters which still remain closed to all commercial fishing due to the *Deepwater Horizon* oil spill. As a result of the continued presence of oil in portions of the closure area, the LDWF contracted removal of these traps through a private company. Cleanup activities were completed in late March and approximately 1,100 abandoned crab traps were removed from the closure area (Table 1).

The Louisiana Crab Task Force continued to meet and address issues confronting the industry. Meetings included discussions on a variety of topics such as MSC certification of the Louisiana blue crab fishery, fisheries disaster assistance, Trade Adjustment Assistance Program, crab bait availability, labor shortages, impacts of crabmeat imports, legislation impacting the crab industry, increases in minimum blue crab size limits, crab promotion and marketing efforts, and Louisiana Wild Seafood Certification Program.

Table 1. Total number of traps removed and volunteer effort in boat days from 2004 to 2011.

Year	*Traps*	*Boat Days**
2004	6,894	90+
2005	4,623	51+
2006	2,935	31
2007	1,498	14
2008	1,234	3
2009	788	0
2010	477	0
2011	1,100	0
2004-2011	19,549	189+

Mollusc Program

The Mollusc Program is responsible for the oyster resource on nearly 1.7 million acres of public oyster seed reservations, public seed grounds, and public oyster areas. Seed grounds are designated by the LWFC and include a large continuous area east of the Mississippi River, as well as areas of the Vermilion/Cote Blanche/Atchafalaya Bay system. Seed reservations and the public oyster areas of Calcasieu and Sabine lakes are designated by the legislature. LDWF manages four seed reservations, including one east of the Mississippi River (Bay Gardene), one in the Barataria Bay system (Hackberry Bay), and two in Terrebonne Parish (Sister Lake and Bay Junop).

Oysters provide an economic benefit to the state, and the ecological benefits of oyster reefs are very important as well. Oysters are biomonitors of the overall health of the ecosystem and provide forage and shelter habitat for a variety of fish and invertebrate species. Oysters also affect water quality through filter-feeding activities and estuarine current patterns, and may contribute to shoreline stabilization. Oysters are both economically and ecologically important; therefore, wise management of the public oyster resource is critically important to ensure that this valuable species continues to thrive in Louisiana's coastal areas.

Oyster Harvest

Statewide oyster harvest in 2011 showed significant increases over 2010 as harvesters landed just under 11 million pounds of meat (preliminary LDWF trip-ticket data). The significantly lower 2010 harvest was due in part to impacts from the *Deepwater Horizon* oil spill that included widespread and extended oyster harvest closures. Traditionally, Louisiana produces about 1/3 of all oysters harvested in the U.S. and over 50% of oysters from the Gulf of Mexico states.

Oyster landings in Louisiana are divided between harvest from public oyster areas and private oyster leases. Historically, landings from private leases have comprised 60% to 80% of annual Louisiana oyster landings; in 2011 roughly 81% of the total harvest came from private leases. Over the years, the public oyster grounds have significantly contributed to the annual statewide oyster landings, although low abundance on public reefs in 2011 led to a yield of only 2.08 million pounds of oyster meat. Much of the oyster production from the private leases, however, is dependent upon small seed oysters (less than three inches) transplanted from the public grounds to the leases to be grown out for ultimate harvest at a legal and marketable size.

Oysters have been a significant part of the Louisiana economy for many years and routinely have a total economic impact on the state's economy of roughly $300 million. In 2011, the dockside value of oysters was over $40 million (preliminary LDWF Trip Ticket Data), up from approximately $24 million in 2010. This valuable resource is harvested from a variety of locations from bays to bayous and throughout the coast of the state.

Commercial oyster harvest in Louisiana is typically accomplished using large dredges (no greater than six feet wide) pulled behind oyster vessels called "luggers." Most of the commercial harvest from public oyster seed grounds occurs on the public grounds east of the Mississippi River in St. Bernard and Plaquemines parishes. However, those public oyster grounds were closed for most of 2010 due to low resource availability and the *Deepwater Horizon* oil spill. Seed grounds and reservations are managed with the goal of providing seed oysters for transplant onto private oyster leases. However, two "Sacking Only Areas" exist east of the Mississippi River for the exclusive harvest of sack-sized oysters:

- Portions of Lake Fortuna and Lake Machias
- American/Long Bay

Mechanical dredge harvest in Calcasieu Lake mirrors the dredge harvest in other parts of the state with the exception of dredge size, as Calcasieu dredges are limited to 36 inches in width. On occasion, however, harvest in Calcasieu Lake is still accomplished using traditional hand-tongs. Harvest in Calcasieu Lake during 2011 continued to be strong as low resource availability impacted harvest in the eastern portions of coastal Louisiana. The State Department of Health and Hospitals, however, completed a sanitary survey of Sabine Lake in 2010 which showed water quality improvements. These results were accepted by the U.S. Food and Drug Administration and a decision to open Sabine Lake to commercial oyster harvest now rests with the Louisiana Wildlife and Fisheries Commission.

Oyster Seasons

State laws mandate that LDWF open the oyster season on Louisiana public seed grounds on the first Wednesday following Labor Day of each year and close these areas no later than April 30 of each year. However, the LWFC is authorized to extend the season beyond April 30 provided sufficient stocks are available for harvest. The LDWF

Secretary may close seasons on an emergency basis if oyster mortality occurs, or delay the season, or close areas where significant spat catch has occurred with good probability of survival, or if excessive amounts of shell in seed oyster loads occur. Management practices often use rotational openings of the four Oyster Seed Reservations in alternating years. A law change during the 2008 Louisiana Legislative Session requires that the public grounds only be opened to the taking of seed oysters between the first Wednesday following Labor Day and the second Monday in October. The seed grounds can then be opened to the taking of market-size oysters on the second Monday in October, as well as for harvesting seed oysters.

The 2011/2012 oyster season was opened after being closed in most public areas for all of the 2010/2011 season. Although the season was opened, many areas saw an abbreviated seasonal framework due to low oyster resource abundance (Table 2).

Biological Sampling

Management of the public oyster grounds and reservations relies heavily upon data gathered through a comprehensive biological monitoring program. This program provides quantitative and qualitative data on oyster populations and other reef-associated animals. The program also underwent significant changes in 2010 as biological sampling was significantly increased in response to the BP oil spill. The increase in sampling effort was continued in 2011.

Square-meter sampling effort completed 490 individual samples at 98 stations coastwide, and included five replicates per station. These square-meter samples are collected each July and additional sampling stations were added to almost all coastal study areas (CSAs) in 2011. Square-meter data are collected using SCUBA and the data are used to measure the annual oyster stock size and for yearly season recommendations by LDWF. In 2011, the annual stock assessment estimated that nearly 1.6 million barrels of oysters (both seed and sack combined) were available on the public oyster grounds throughout the state - a slight decrease from 2010 levels. The majority of this resource was located in Calcasieu and Sabine Lakes.

Dredge samples were collected in all months and include three replicates per station. Dredge data are used to monitor the overall health of the oyster resource during the year and to assess recruitment of new age classes of oysters into the population. Field biologists also gather hydrological data on public oyster areas and develop harvest and fishing effort estimates by conducting boarding report surveys of oyster boats.

Oyster Reef Rehabilitation

Two emergency restoration projects were completed in the fall of 2011 in response to the continued impacts of the 2010 *Deepwater Horizon* oil spill. One project occurred in Mississippi Sound (St. Bernard Parish) south of Halfmoon Island as approximately 31,300 cubic yards of crushed concrete was spread over 300 acres of existing scattered shell water bottoms. The second project occurred in California Bay (Plaquemines Parish) east of the Mississippi River and involved the planting of approximately 28,000 cubic yards of oyster shell and limestone over 300 acres of scattered shell water bottoms just west of Pelican Island.

Oyster Reef Mapping Projects

No reef mapping projects occurred in 2011, although previous projects from 2010 were utilized in planning the 2011 oyster cultch planting projects indicated in the above section.

Native Stock Oyster Hatchery

Louisiana State University continued operation of an experimental oyster hatchery at the LDWF Fisheries Laboratory on Grand Isle, Louisiana in partnership with departmental biologists. The hatchery produced nearly 500 million eyed oyster larvae in 2011 as well as approximately 5 million small oyster spat. Oyster larvae and spat were provided to both leased areas and public oyster seed grounds within the Barataria basin, including the deployment of over 2 million spat and approximately 140 million larvae in the Hackberry Bay Public Oyster Seed Reservation.

Oil and Gas Monitoring Within the Public Oyster Areas

The LDWF acts as a commenting agency on all Coastal Use Permit applications received by

the Louisiana Department of Natural Resources (DNR) for projects located within LDWF managed areas. The primary objective of the Oil and Gas Management Section is to monitor and minimize impacts on oyster resources resulting from oil and gas operations within public oyster areas. The section achieves this by reviewing and commenting on permit applications and requiring a water bottom assessment to be completed on each project area and proposed access route. The sampling protocol, developed by LDWF biologists, outlines what data is required to be collected for projects located in the public oyster areas and is available online at http://dnr.louisiana.gov/crm/coastmgt/permitsmitigation/oyster/sampling-protocol.pdf.

These assessments identify the type of bottom (soft mud, firm mud, buried shell, exposed shell, oyster reef) and the live oysters that will be impacted by the project. After the assessments are reviewed and the impacts calculated, the project can either be modified to reduce possible impacts or allowed to be permitted as proposed. In 2011, approximately 200 assessments were reviewed by section staff. Recommendation letters, which include recommended permit conditions designed to reduce impacts to oyster resources, were provided to DNR for each project.

Compensation for impacts is required as a condition of each permit issued for projects within the boundaries of the public oyster areas. The amount is calculated using the water bottom assessments and a rate schedule developed by LDWF economists. This rate schedule is available online at http://dnr.louisiana.gov/crm/coastmgt/permitsmitigation/oyster/rate-schedule.pdf. In 2011, approximately $238,110 was collected as compensation for impacts and deposited into the Public Oyster Seed Ground Development Account. State law directs LDWF to use these monies to restore, enhance, and manage oyster resources on the public oyster areas.

Table 2. Opening and closing dates of the public oyster areas 2011-2012.

Public Oyster Areas	*Season Opening*	*Season Closing*
Bay Gardene Public Oyster Seed Reservation and all primary public oyster seed grounds east of the Mississippi River	Oct 31, 2011	Feb 2, 2012
Hackberry Bay Public Oyster Seed Reservation	Oct. 31, 2011	Nov 4, 2011
Little Lake Public Oyster Seed Grounds	Sept 7, 2011	Apr 30, 2012
Barataria Bay Public Oyster Seed Grounds	Oct 31, 2011	Nov 4, 2011
Deep Lake Public Oyster Seed Grounds	Oct 31, 2011	Apr 30, 2012
Lake Chien Public Oyster Seed Grounds	Oct 31, 2011	Nov 4, 2011
Lake Felicity Public Oyster Seed Grounds	Oct 31, 2011	Nov 4, 2011
Lake Tambour Public Oyster Seed Grounds	Oct 31, 2011	Apr 30, 2012
Lake Mechant Public Oyster Seed Grounds	Oct 31, 2011	Apr 30, 2012
Sister Lake Public Oyster Seed Reservation	Oct. 31, 2011	Dec 15, 2011
Bay Junop Public Oyster Seed Reservation	Oct 31, 2011	Dec 15, 2011
Vermilion, East and West Cote Blanche and Atchafalaya Bay Public Oyster Seed Grounds	Oct 31, 2011	Apr 30, 2012
West Cove of Calcasieu Lake Public Oyster Area	November 1, 2011	April 30, 2012
Sabine Lake and East side of Calcasieu Lake	Closed	

Oyster Leasing

The moratorium on the issuance of new oyster leases, at the request of Louisiana Department of Natural Resources, remained in effect throughout 2011, except for pending oyster lease applications that were taken prior to the moratorium. 100 new oyster leases were issued in 2011. The moratorium was requested in order to reduce the state's liability related to coastal restoration efforts. This moratorium does not affect lease renewals, and 663 renewal applications were processed.

The Oyster Lease Survey Section office is currently located at the University of New Orleans Advanced Technology Center, 2021 Lakeshore Drive, Suite 220. The section continues to maintain a web site, which provides information to the public about oyster leasing in Louisiana. This web site contains a searchable Geographic Information System with background maps, DHH closure lines, a database of current leases, landings and harvest statistics, and recent news articles about oysters. The web site has had thousands of visits since it was developed and placed on the web in March 1998, and is available at http://oysterlease.wlf.la.gov/oyster/.

Finfish Program

The primary objective of the finfish program is to make rational recommendations for the management of coastal finfish stocks based on a database of scientific information. The information in the database is collected through fishery independent and fishery dependent sampling. These programs are cooperative with NMFS and the Gulf States Marine Fisheries Commission (GSMFC). The fishery-independent monitoring program is an ongoing collection of data by LDWF biologists who conduct surveys designed to sample coastal waters in an objective manner. Such surveys collect information based on geographic ranges independent of commercial or recreational fishing operations. The Office of Fisheries fishery-dependent monitoring program collects information from fishers, processors, and observers based on methods developed by NMFS for similar programs.

Fishery-Independent Monitoring

A comprehensive monitoring program was developed in 1985 to protect or enhance these valuable resources by providing information regarding the status of fish stocks that occur in the coastal waters of Louisiana at some time during their life cycle. Three gear types are used coast-wide to sample various year classes of estuarine dependent fish.

A bag seine is used to sample young of the year and provide information on growth and movement. A gill net is used to sample juvenile, sub-adult, and adult fish, and provides information on relative abundance, year class strength, movement, and gonad condition. A trammel net is used to provide information on relative abundance, standing crop, and movement. Gill net samples are collected semi-monthly from April through September, and monthly from October through March using a strike net technique. Gill nets are set in a crescent shape, open towards the shoreline, and then circled several times by the sampling boat to drive those animals present into the net. Trammel net samples are taken monthly from October through March. Seine samples are taken quarterly from January through December. Hydrological data (conductivity, salinity, and water temperature) are collected with each biological sample. Samples are collected at specific locations arranged in such a manner so as to cover the beach, mid-marsh, and upper marsh areas of all major bay systems throughout coastal Louisiana. The catch and hydrological information is summarized for each Coastal Study Area on a monthly basis to give resource managers information on the current condition of the resource. The pertinent life history information for the important species is also used in developing analytical and predictive models. During 2011, 447 (118%) seine samples, 1,679 (97%) gill net samples, and 537 (99%) trammel net samples were completed for a 99% completion rate. Sample completion rates in 2011 were lower due mainly to inaccessibility of sampling sites and incorporation of newly assigned sites. Seine samples exceeded 100% due to extra sampling conducted in some areas of the state.

Fishery-Dependent Monitoring

The value of commercial landings in Louisiana exceeded $321 million in 2011, a $93 million increase from the 2010 landings. The Department

continues to collect commercial statistics through the Trip Ticket Program that was implemented in 1999. Through this program, commercial landings data are collected on a trip basis from wholesale/retail seafood dealers, crab shedders, and commercial fishermen holding fresh products licenses. There were over 232,000 commercial fishing trips reported in 2011, 44,000 more than 2010, producing in excess of 1.3 billion pounds of seafood.

Beginning in May 2000, a computerized electronic trip ticket program was developed and made available to dealers. To date, roughly 185 dealers use the computerized program to submit their trip ticket data. Trip ticket information has been used to enhance the accuracy of stock assessments conducted by state and federal fishery management agencies, to extend certain inshore shrimp seasons, thereby providing additional economic opportunity to fishers, to develop a crop insurance program for oyster growers, and to estimate damages from Hurricanes Katrina and Rita in 2005 and Gustav and Ike in 2008.

Along with the collection of commercial landings data, the Department also conducts trip interviews of commercial fishermen. Biologists interview commercial fishermen to gather detailed information about a specific fishing trip. The federally funded program focuses on species of greatest state and federal interest.

The Department continues to monitor recreational fisheries through the Marine Recreational Information Program (MRIP) in cooperation with NMFS and GSMFC. This fisheries dependent program uses dockside interviews of recreational anglers to determine catch, and a telephone survey to determine effort. The table below represents available 2011 data for the number of marine recreational fishing trips taken, the number of anglers participating, and the numbers of red drum (*Sciaenops ocellatus*) and spotted seatrout (*Cynoscion nebulosus*) caught in Louisiana waters (Table 3).

Fish Stock Assessments

In 2011, Department personnel updated and revised the stock assessment of striped mullet and completed a benchmark stock assessment of blue crab.

Striped Mullet (*Mugil cephalus*) – This assessment uses a virtual population analysis (VPA-2Box version 3.05, NMFS Toolbox) to describe the dynamics of the Louisiana striped mullet stock. Yield- and spawner-per-recruit analyses (YPR and SPR) are used to estimate stock status. A conservation threshold of 30% SPR has been established by Act 1316 of the 1995 Regular Session of the Louisiana Legislature for striped mullet. Assessment results, using current (geometric mean 2007-09) fishing mortality rates (F), indicate that if M=0.3 (the value within the range of estimates that allows the lowest allowable harvest), the current fishery is operating below $F_{0.1}$ with yield below maximum YPR (approx. 78% of maximum), and SPR near 64%. An M of 0.6 would indicate a more lightly fished stock with the fishery operating below $F_{0.1}$, with yield being about 40% of maximum YPR and with SPR being near 86%.

Table 3. Marine recreational fishing trips taken in 2011, anglers and numbers of targeted fish caught.

Reporting Period	*Number of trips taken*	*Number of anglers*	*Number of red drum caught*	*Number of spotted seatrout caught*
January – February	535,219	243,644	872,371	1,607,163
March – April	711,345	330,837	815,633	1,143,718
May – June	1,097,195	523,393	1,082,333	3,980,435
July – August	900,896	369,045	1,271,102	3,390,966
September - October	750,115	318,839	1,237,762	2,657,871
November - December	552,360	204,636	960,294	3,497,607

Blue Crab – This assessment uses a Collie-Sissenwine analysis to describe the dynamics of the Louisiana blue crab stock. Spawner per recruit analysis, coupled with model derived F and spawning stock biomass (SSB) estimates, are used to estimate stock status. No conservation thresholds have been established by the Louisiana legislature for blue crabs. Based on assessment results, targets and explicit limits to fishing (i.e., SSB and F) are proposed as reference points for management. Assessment results, relative to proposed thresholds, indicate the stock is currently neither overfished (2009 SSB) nor experiencing overfishing (2008 F) with SPR near 36%. The stock was, however, considered overfished from 1995-1996 and experienced overfishing in 2002.

Finfish Management Actions

January 2011

- Secretary provided with authority to close commercial seasons of reef fishes if quota for species group is filled in federal waters.
- Secretary provided with authority to close recreational seasons of red snapper and greater amberjack if quota is filled in federal waters.
- Recreational fishery for greater amberjack opened on January 1.
- Recreational fishery for gag grouper closed consistent with federal closure.
- Set 2011-2012 king mackerel commercial season; provided Secretary with authority to close commercial season for king mackerel if quota for species is filled in federal waters.
- Commercial spotted seatrout fishery opened January 2.
- Commercial fishery for small coastal shark opened January 1, concurrent with federal opening.

February 2011

- Commercial 2010-2011 king mackerel season closed at noon on February 11, 2011.
- Present 2011 stock assessment for striped mullet to the LWFC and Legislature.

March 2011

- Commercial fishery for large coastal shark opened on March 1.

April 2011

- Recreational and commercial shark seasons closed from April 1 at 12:01 a.m. through June 30.

June 2011

- Recreational fishery for red snapper opened June 1, concurrent with federal opening.
- Recreational fishery for greater amberjack closed on June 1, concurrent with federal closure.
- Commercial fishery for greater amberjack closed on June 18, concurrent with federal closure.

July 2011

- Commercial fishery for the 2011-2012 king mackerel season opened on July 1 at 12:01 a.m.
- Commercial fishery for small coastal shark re-opened on July 1 at 12:01 a.m.
- Commercial fishery for large coastal shark re-opened on July 1 at 12:01 a.m.
- Recreational fishery for red snapper closed on July 19 at 12:01 a.m.
- Commercial fishery for large coastal shark closed on July 17 at 11:30 p.m., concurrent with federal closure.

August 2011

- Recreational fishery for greater amberjack re-opened on August 1, concurrent with federal opening.
- Issued a Notice of Intent to modify bluefin tuna harvest regulations to allow one bluefin tuna per year, per vessel during an open season at a minimum size of 73 inches.
- Issued a Notice of Intent to modify harvest rules for striped mullet to allow for the commercial harvest of live mullet, for bait purposes, with manually deployed and retrieved cast nets.

September 2011

- Recreational gag grouper season opened September 15, concurrent with federal

opening.
- Commercial 2011-2012 fishery for king mackerel closed on September 16, concurrent with federal closure.

October 2011
- Commercial fishery for greater amberjack closed on October 19, concurrent with federal closure.

November 2011
- Recreational fishery for gag grouper closed on November 15, concurrent with federal closure.

December 2011
- Issued a Notice of Intent to establish reporting requirements for anglers harvesting yellowfin tuna.

The Finfish Management Program interacts with other Department, State, regional, and national issues. The program contributes to the Gulf and Atlantic Aquatic Invasive Species Task Force that engenders cooperation on these issues for states from South Carolina to Texas and Mexico. It is also part of the Louisiana Aquatic Invasive Species Task Force. It works with the Gulf of Mexico Fishery Management Council Stock Assessment Panel to evaluate the status of fish stocks managed by the Council. It works with the GSMFC to develop fishery management plans and stock assessments for state-managed fisheries that have inter-jurisdictional management considerations. The program also contributes to Department consideration on permitting issues that relate to finfish including coastal use permits, Liquefied Natural Gas (LNG) terminals, mariculture, and artificial reefs.

Habitat Program

Artificial Reefs

Artificial reefs provide resource habitat benefits while giving anglers rich and abundant fishing areas in otherwise dormant conditions. The Louisiana Artificial Reef Program (LARP) was founded in 1986 through the cooperative efforts of the Louisiana State University Coastal Fisheries Institute (LSUCFI) and the LDWF. Resultant legislation called for the development of a State Artificial Reef Plan and provided for an artificial reef program in Louisiana. Act 100 of the 1986 Legislature established that LDWF would operate the program with logistical support from LSUCFI. LDWF and LSUCFI produced a plan in the fall of 1986 that was accepted by the Louisiana Legislature. The plan outlined the siting, permitting, and monitoring requirements of the program.

LARP was established to use obsolete oil and gas platforms to provide habitat for Louisiana's coastal fishes and fishing opportunities for recreational and commercial harvesters. Federal law and international treaty require oil exploration companies to remove these platforms one year after production ceases. LARP has provided an opportunity for oil companies to contribute to the maintenance of fisheries habitat. Since its inception, 67 oil and gas related companies have participated in the offshore program and donated the jackets of 295 oil and gas structures. During 2011, 28 obsolete oil and gas structures were accepted into the offshore artificial reef program. Previously deployed offshore reef materials also include 40 armored personnel carriers and one offshore tug.

Eight deep-water oil and gas platforms have been accepted into the deep-water reef program. Even though these reefs are in water depths in excess of 400 feet, the structure establishing the reef must maintain sufficient profile in the water column to be accepted into LARP. The deployments of the platforms undergo a non-explosive partial removal process which preserves the established biological community with minimal disturbance, maintains fishing opportunities for residents, and saves money on the decommissioning of the platform.

LARP also manages a Special Artificial Reef Sites (SARS) program outside LARP's nine artificial reef planning areas and deepwater reef program. Seventeen SARS have been established and continue to be enhanced with additional oil and gas structures. Industry continues to work on the remaining approved SARS projects related to the 2005 hurricanes. A moratorium is currently in effect on future SARS proposals.

In addition, LARP has developed 28 inshore reefs, primarily low-profile reefs composed of shell and limestone. LARP constructed eight reefs, and twenty others were constructed in association with public conservation and private groups.

In working with one of these groups, eight reefs have been constructed using 1200 reef balls. The four original sites were the first attempt to deploy reef balls in an estuarine setting even though they had been deployed successfully in tropical and oceanic environments.

LARP has been working with the Louisiana DOTD to make beneficial use of concrete debris resulting from the removal of the Hurricane Katrina damaged I-10 Twin Span bridges. The bridge rubble is being used to create two artificial reefs in Lake Pontchartrain. In 2010, the first phase of the project resulted in the creation of the South Twin Span Reef. The new reef provides habitat for marine fisheries species and opportunity for recreational fishers. Deployment of the North Twin Span Reef commenced in December 2011 and is scheduled to be completed prior to the summer of 2012. LDWF allocated $915,000 towards the development of the two new inshore reefs in Lake Pontchartrain from EDRP2 Program Sub Grant ACF-025-2007-02 (NOAA Grant Number NA07NMF4540373). Approximately 29,000 tons of concrete bridge material from 102 spans will be deployed at the two artificial reefs.

Oil Spill Contingency Planning and Response

During 2009, the program was reassigned out of the Office of Fisheries to the Coastal and Nongame Resources Division in the Office of Wildlife. Office of Fisheries will no longer report on this activity.

LDWF participates with other state and federal agencies in planning restoration of hazardous materials sites. Two planning activities continued in 2011: Bayou Trepagnier in St. Charles Parish and Calcasieu River in Calcasieu Parish.

Statewide Hydrographic Monitoring

LDWF began collecting constant records of salinity, water temperature, and tide level in 1958. This program continued in 2010, cooperatively between LDWF and the U.S. Geological Survey (USGS). Data are collected from 15 stations located from the Pearl River to Calcasieu Pass; details are

Table 4. Hydrographic monitoring locations across Louisiana.

LDWF #	*USGS #*	*Station Name*	*Current Status*
105	0738023365	Bayou Rigolets near Slidell	Online
111	07374527	Northeast Bay Gardene near Point-a-la-Hache	Online
112	07374526	Black Bay near Snake Island, Point-a-la-Hache	Online
117	3007220891501	Mississippi Sound at Grand Pass	Online
316	073802516	Barataria Pass East of Grand Isle	Online
317	07380251	Barataria Bay North of Grand Isle	Online
320	07380335	Little Lake near Cutoff	Online
327	07380330	Bayou Perot at Point Legard near Cutoff	Online
338	073802512	Hackberry Bay NW of Grand Isle	Online
417	073813498	Caillou Bay SW of Cocodrie	Online
518	07381349	Caillou (Sister) Lake SW of Dulac	Online
622	07387040	Vermilion Bay near Cypremort Pt.	Online
623	07387050	Vermilion Bay at Bayou Fearman	Online
730	08017095	North Calcasieu Lake near Hackberry	Online
731	08017118	Calcasieu River near Cameron	Online
732	08017044	Calcasieu River at I-10 at Lake Charles	Online

shown in Table 4. The USGS has converted some stations to hurricane resistant hardened platforms to provide more reliable storm surge data across the Louisiana coast.

Field data are collected by USGS, and finished data are provided to LDWF. All sites collect data in near real-time (four-hour lag), and the data are transmitted via satellite from the instrument in the field to the USGS office in Baton Rouge and downloaded to LDWF's database via the Internet. Both internal and external data requests are filled from this database. Once processed, the data are used to support fishery management by, for example, determining how much suitable area of brown shrimp nursery grounds is available each year, and setting season opening dates.

Coastal Wetlands

In 2011, the Fisheries Management staff continued to work with state and federal agencies to develop strategies for slowing the rate of coastal wetlands loss in Louisiana. Louisiana produces a coastal restoration and protection master plan every five years. The plan includes a comprehensive modeling project incorporating many aspects of coastal life from coastal hydrology and geomorphology to the social and economic consequences of coastal change. LDWF staff participated in initial meetings regarding the wildlife and fish inputs to habitat suitability modeling for the effort. Fisheries staff served on the Framework Development Team to oversee and inform the development of the master plan. The 2012 Louisiana's Comprehensive Master Plan for a Sustainable Coast received unanimous legislative approval in the 2012 Louisiana Legislative Session. The Master Plan has outlined and will guide the state's coastal restoration and protection initiatives for the next five years. In addition, LDWF staff worked on the formulation and development of a number ongoing coastal restoration and protection projects.

LDWF staff also takes part in the deliberations of the Caernarvon and Davis Pond Interagency Advisory Panels. These groups advise the state about effects of operations, and possible changes in operations of these two freshwater diversion structures.

LDWF fisheries staff participates in the Environmental Work Group deliberations of each year's priority project list (PPL). The Environmental Work Group evaluates up to 11 projects per year for final recommendation to the Coastal Wetlands Planning, Protection and Restoration Act Technical Committee for funding of engineering and design.

Fisheries staff review coastal use, consistency, and 404 permit applications for possible impacts to fish resources and fish habitats. In 2011, staff have reviewed and commented on slightly over 1250 permit applications.

Seismic Monitoring

The LDWF Seismic Section was created in 1939 specifically to protect oysters, fish, shrimp, and other wildlife from the effects of seismic exploration. Seismic exploration uses energy waves to generate a profile of sub-surface reflective layers that help define potential oil and gas traps. The energy waves can be produced by explosives detonated below the ground, by air guns that emit a burst of air at the surface of water bodies, or by large vibrating pads placed on the surface. These projects can occur in sensitive wetlands, water bodies, and uplands. Seismic agents monitor geophysical companies to protect Louisiana's fish and wildlife resources by ensuring compliance with LDWF seismic rules and regulations. During 2011, the Seismic Section monitored 24 projects throughout the state.

Freshwater Diversion Monitoring

Louisiana has a number of freshwater diversion structures in place, the largest of which are the Caernarvon and Davis Pond structures. LDWF Fisheries staff monitor effects of both diversions on the fish and wildlife populations in the Breton Sound and Barataria basins respectively, as well as, participate in planning efforts by the Caernarvon and Davis Pond Interagency Advisory Panels. In 2011, the major diversions were not operated during the high flood event in order to help mitigate river flooding in areas such as Lafitte.

Caernarvon Biological Monitoring

The structure consists of a five-box culvert with each culvert measuring 15 square feet, and is

capable of allowing a maximum discharge of 8000 cubic feet per second (cfs). Caernarvon was completed in 1991. Operations management of the structure is assigned to the Coastal Protection and Restoration Authority of Louisiana (CPRA).

Davis Pond Biological Monitoring

The Davis Pond structure consists of four iron-gated 14' x 14' box culverts built into the Mississippi River Levee. The structure was completed in 2002, but construction and alteration projects continued through 2009 as engineers addressed flooding issues in the ponding area. Davis Pond has a maximum discharge capacity of 10,650 cfs. Operations management of the structure is assigned to the Coastal Protection and Restoration Authority of Louisiana (CPRA).

Research Program

Fisheries Research Lab

The Fisheries Research Lab (FRL), located in Grand Isle, has a primary mission to conduct the research required to manage Louisiana's marine, estuarine, and freshwater fisheries. The laboratory is made available for the use of other LDWF and non-LDWF entities engaged in fisheries research, management, enforcement, coastal restoration, and marine education. This facility also serves as a field station for Coastal Study Area III in the Barataria Bay estuarine system. The laboratory supports the monitoring of the Freeport Sulfur Mine Reef for the Louisiana Artificial Reef Program, Elmer's Island Wildlife Management Area (WMA), and a local operations center for LDWF enforcement agents.

In 2011 the Fisheries Research Laboratory was still engaged in aspects of *Deepwater Horizon* oil spill response, especially dolphin and sea turtle strandings as part of the Unusual Mortality Event (UME). Although oil spill emergency response is still a priority at FRL, the LDWF Fisheries Research Laboratory is again shifting into its primary mission of researching aspects of fisheries biology.

Research projects conducted in 2011 included:

South East Area Monitoring and Assessment Program (SEAMAP)

Southeast Area Monitoring and Assessment Program (SEAMAP) is a cooperative state, federal, and university program designed for the collection, management, and dissemination of fishery-independent biological and environmental data of the coastal waters (state and EEZ) off the Southeastern United States. For the past 32 years SEAMAP has collected data on fish stocks that are managed by either state or federal governments. Collection activities include: summer and fall groundfish/shrimp trawl survey, spring and fall plankton survey, vertical line survey, and bottom longline survey. Environmental conditions (e.g. wind speed, current direction and speed, water temperature, salinity, chlorophyll, etc.) are recorded via CTD and onboard monitoring equipment. At the onset of 2011, LDWF reprogramed its SEAMAP sampling scheme with the addition of the bottom longline and vertical line surveys to the already existent groundfish/shrimp trawl and plankton surveys. Vertical line and bottom longline projects were initiated in early 2011 with project development, gear design, and construction. The first sampling cruises for both began in August of 2011.

- **Groundfish/Shrimp Project –** The groundfish/shrimp project was designed to map the species assemblage of demersal animals in the Northern Gulf of Mexico. In 2011 groundfish/shrimp surveys consisted of a summer (June) and fall (October) cruise, each of which sampled 24 stations between the 35 – 120ft depth contours off the Louisiana coast. For station selection, NMFS generates a list of potential stations and then LDWF personnel choose 29 of these sites, 24 primary and 5 of which are back-up stations. Stations are bordered by depth (5 to 20 fathoms), and latitude (between -89°W and -91°W). Groundfish/shrimp demersal trawl surveys are conducted using a standard SEAMAP 42ft demersal balloon otter trawl towed for 30 minutes. Samples and sub-samples are weighed, counted, measured, and recorded.

- **Plankton Project** - LDWF performed two plankton surveys in 2011 in conjunction with NMFS as part of SEAMAP. Plankton samples were collected on the groundfish/ shrimp project cruises to gather data on early life history stages (eggs and larvae) of marine organisms at seven stations. Both LDWF and NMFS collect plankton samples in uniform time frames using a 60cm bongo and single neuston net (1x2m). Bongo nets are dropped to the seafloor, or 200m max, and brought back to the surface resulting in a vertical transect sample of plankton in the water column. The neuston net is pulled along the surface of the water at 0.5m submerged depth for 10 minutes. All of the LDWF collected plankton samples are brought to the lab, transferred to ethanol, and turned over to NMFS. NMFS then sends subsamples to the Polish Sorting Center for analysis and retains the remainder of the samples in its plankton library.

- **Vertical Line Project** – The vertical line project was designed to map the spatial and temporal distribution of economically important recreational and commercial reef fish through the comparison of populations at various depth strata, habitat types, (petroleum production platforms, artificial reefs, natural bottom). In addition, the project analyzes an assessment of hook selectivity. Sampling commenced in August of 2011, with subsequent trips in September and December of that year and with sampling continuing into 2012. The sampling area, -89°W and -91°W, is divided into three zones, (eastern, central, and western) with three corridors in each zone. The sampling scheme consists of each zone being sampled quarterly. A longitudinal point is randomly selected within each corridor and sites are selected along the longitudinal sampling line, with a tolerance of (+/-) three minutes of a degree. Additionally, sites are further divided into three depth strata, (60 – 120ft, 120 – 180ft, 180 – 360ft) each of which is sampled based on percent of possible targets from each (60%, 20%, 20% respectively). Targets consist of three site types, (artificial reef, natural bottom, petroleum production platform) each of which is sampled based on its percent occurrence within the sampling strata (23%, 3%, 74% respectively). At each site three bandits are deployed, with each bandit utilizing a different hook size; 8/0, 11/0, or 15/0 hooks. Baits are soaked five minutes, retrieved, and catch data recorded. The FRL took an active role in writing the adopted manual governing SEAMAP Vertical Line Sampling.

- **Bottom Longline Project** – The bottom longline project was designed to map the spatial and temporal distribution of benthic-feeding recreational and commercial fish species. The first bottom longline survey was conducted in August of 2011, with subsequent sampling cruises in September and October of that year and continuing into 2012. The sample area (-89°W and -91°W) is divided into three zones, (eastern, central, and western) each of which is sampled two to three times annually with one sampling cruise a month between March and October. Within each zone a longitude and depth, between 2 and 100 fathoms, is randomly selected. During each three to four day sampling cruise, up to sixteen sites are sampled. Gear consists of a one mile long mainline of 900lb mono with 100 ganglions of 730lb mono with 15/0 Mustad circle hooks. The line is allowed a soak time of one hour before it is retrieved. All animals are measured, weighed, and all sharks are sexed. Protocol follows the SEAMAP Bottom Longline Manual.

Data from all SEAMAP sampling cruises, including real-time shrimp from the summer cruise, were entered, verified, and uploaded to the SEAMAP data management system by the close of 2011. SEAMAP data are available by request, as are the various SEAMAP publications, including environmental and biological atlases of the Gulf of Mexico for each year from 1983 through 2011.

More information about SEAMAP is available at the GSMFC Web site: http://www.gsmfc.org.

Red Drum Aging Study

Sampling of offshore adult red drum began in 2011. Updated life history parameters are necessary for accurate population assessments. Adult red drum were sampled via hook and line, bottom longline, and vertical line, on a monthly basis in 2011, with sampling continuing into 2012. Once fish are caught and brought to the dock, biological parameters are recorded. Otoliths are removed for aging, and ovaries are removed for histological and fecundity analysis. Data are entered into the Fisheries DMS.

Near-Shore Monitoring

The near-shore waters of the Gulf of Mexico within the 5-40 fathom contour comprise the habitat of many of Louisiana's commercially and recreationally important species such as brown and white shrimp, red drum, red snapper (*Lutjanus campechanus*), and Gulf menhaden, among many others. Near-shore sampling will provide fishery-independent monitoring and assessment data essential to the management of Louisiana's marine fisheries. Fishery-independent information is that which is collected without direct reliance on statistics reported by commercial or recreational sectors. Because vast areas have been closed to the fishery dependent sector, this commercial and recreational data may not be a reliable source for assessing the status of fisheries.

Assessment and modeling analyses of most Gulf species require extensive nearshore surveys of critical life stages and habitat requirements (e.g., water quality). Information obtained from coordinated, extensive fishery-independent surveys of living marine resources, such as shrimp, groundfish, reef fish, and other key recreational and commercial species will be used to manage these species. Spatial and temporal distribution and abundance of fishes in relation to measured environmental and oil impacts will also be utilized by LDWF biologists to make management recommendations. Where possible, historic data collected from Southeastern Monitoring and Assessment Program (SEAMAP) administered by NOAA/NMFS will be used as baseline population and community data.

Sample Locations

Waters near-shore to the Louisiana coastline will be divided into three zones: the Western Zone, the Central Zone and the Eastern Zone. Each zone will be approximately 90-120 miles wide and at water depths between 5 and 40 fathoms. The geographic boundaries of each zone are listed below (see Figure 1).

Eastern Zone: 88°0'0'' W -- 89°59'59'' W
Central Zone: 90°0'0'' W -- 91°59'59'' W
Western Zone: 92°0'0'' W -- 93°59'59'' W

Each zone will be demarcated by four sample corridors corresponding to 30-minute longitudinal intervals within the zone boundaries. One longitudinal transect will be selected at random within each of the sample corridors. The pool of available transects from which to choose in each corridor will be lines of longitude separated by a distance of one minute (0°1'0'').

Sample Site Selection

Zones, transects within sample corridors, and the starting corridor will be selected at random. Once a zone is selected, a transect line of longitude within each of the corridors will be selected at random. The initial sample will begin at the chosen transect within either corridor 1 or 4. Sampling in the chosen zone will proceed in a systematic fashion from either corridor 1 to 4 or from corridor 4 to 1. The next time a particular zone is sampled, it will be sampled in reverse order. This is to ensure that each corridor within the zone is sampled during day and night periods.

Sample Frequency

A different zone will be sampled monthly, such that each zone will be sampled quarterly during the year. During one year, a total of 48 transects will be sampled. Transect sampling will be conducted along a line of longitude. A sample will be collected at each of eight depth strata along the transect line. Depth strata will be at increments of five fathoms. The first depth strata will be at five fathoms along the transect line, and the last depth strata will occur

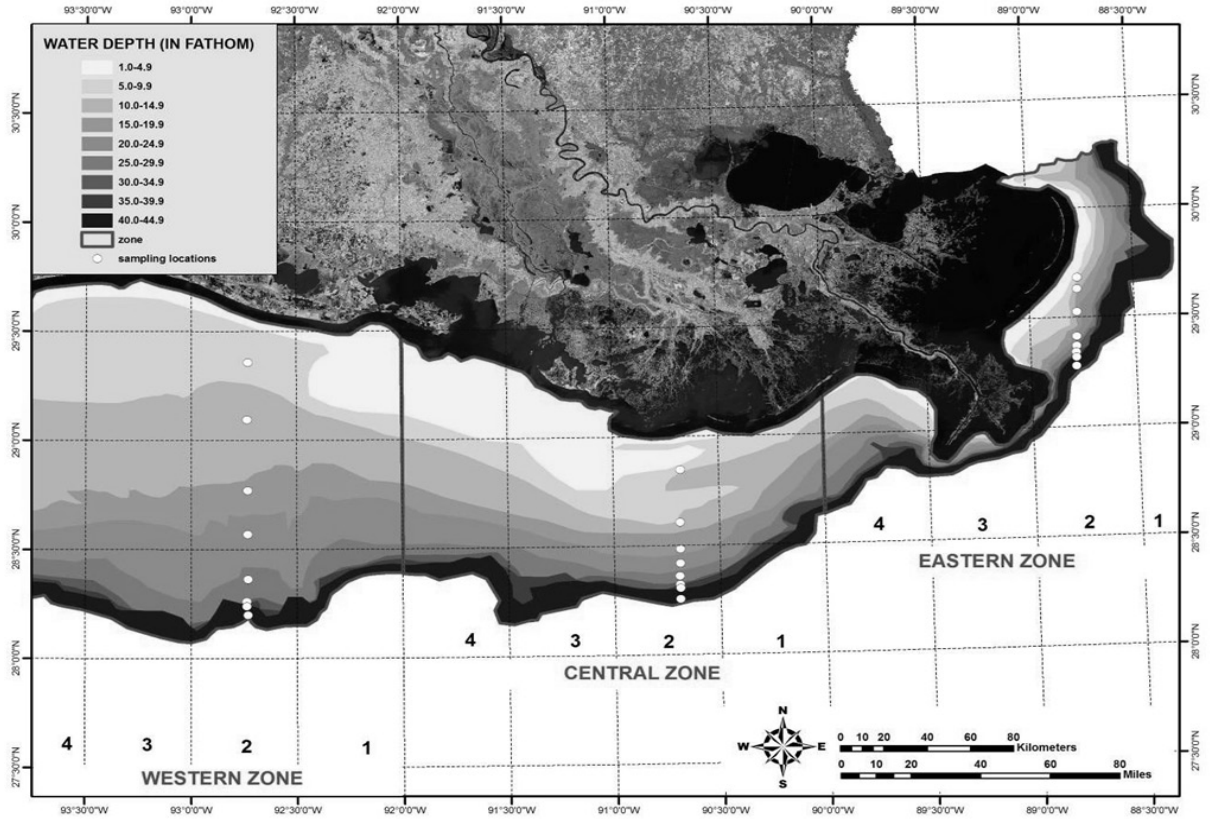

Figure 1. The Louisiana near-shore sampling zones (Eastern 1-4, Central 1-4, and Western 1-4) and the associated depth strata.

at 40 fathoms. Thus, the total number of samples that will be collected in a given year will be 384 (48 transects X 8 depth strata).

Biological Sampling

Biological sampling will be conducted with one vessel outfitted with a 42' semi-balloon trawl. One 30-minute tow will be conducted on the seafloor at each of the depth strata mentioned above. Finfish, shrimp, and crab species will be sampled by the trawls. All individuals captured by the trawl will be identified to species and counted. A random subsample of 50 individuals will be measured for total length and weighed. Adult individuals of commercially and recreationally important species will be sexed (e.g., red snapper, grouper spp.), and their degree of sexual maturation will be determined.

Environmental Data Collection

In situ measurements of water characteristics will include water temperature, salinity, dissolved oxygen, chlorophyll, Secchi disc depth, and Forel-Ule color. Sampling depths will occur at the surface, mid-water, and bottom. Water measurements and samples will be taken in conjunction with each biological sample. Additional measurements and more frequent sampling may be required depending on the type of survey. A CTD (Conductivity-Salinity- Temperature-Depth meter) will be used to collect temperature, salinity, and dissolved oxygen. The preferred chlorophyll sampling method is extraction. Water samples can be collected with water collection bottles. Chlorophyll concentrations will be analyzed at the Fisheries Research Laboratory in Grand Isle using spectrophotometery. Dissolved oxygen is measured with *in situ* D.O. sensors, onboard the vessel with D.O. meters (laboratory probe), or by a titration method. Secchi depth is measured with a standard white, 30 cm diameter Secchi disc. Water color measurements are made by use of the Forel-

Ule color comparator. When a CTD is unavailable, hydrocasts with water collection bottles will be used to collect water samples for measurement of the parameters identified as minimal. Sampling depths will be determined by electronic depth finders. When salinity cannot be determined at sea, water samples will be collected and returned to the LDWF Fisheries Research Lab for later analysis.

Tarpon (*Megalops atlanticus*) DNA

This non-invasive tagging technique is partnered with Florida Fish and Wildlife Commission. Anglers are requested to participate in collecting DNA samples from tarpon prior to their release. Individual markers will be identified and fish can be traced if recaptured.

Biodiversity and Relative Abundance of Fish at Artificial Reefs and Corresponding Upright Oil Platforms

The purpose of this study is to characterize species assemblages associated with active standing petroleum production platforms, which few studies have looked at in the Northern Gulf of Mexico despite the high occurrence of platforms. This project, due to start in May 2011, was delayed due to personnel and equipment being otherwise occupied with *Deepwater Horizon* oil spill-related activities. Surveys will begin in 2012 and will consist of two types of sampling: roving surveys and point-count surveys, performed by scientific divers. Both surveys will be conducted in 15ft increments from a depth of 105ft to the surface. Three structures have been selected as replicates and will be surveyed quarterly beginning in spring of 2012.

Research Hatchery

In 2011, a recirculating tank system consisting of four 2,375gal, 10.5ft x 4ft tanks were designed and installed at the Grand Isle FRL. Using filtered bay water, this closed system provides over 10,000 gallons of parameter controllable water. This system will be used to determine the best conditions for growth of various fish species, as well as for holding, growth, and tag retention studies. Also in 2011, six fiberglass 165gal, 10.5ft x 30in x 12in raceway tanks were installed as an "open" tank system. The raceway set up, with the ability to pump a constant supply of bay water through the system, makes for an ideal set-up for sorting, handling, or holding species for study. In 2011, the raceways were used to "set" oyster larvae on cultch material prior to deployment into Barataria Bay.

In 2011, the micro-hatchery lab installation was completed at the FRL with the aim of producing artemia and rotifers as "first feed" for species reared at the FRL as well as supplemental food for the holding and display systems. A reverse osmosis deionized (RODI) system was installed capable of producing up to 300 gallons of laboratory grade, 18 mega ohm water/day. RODI water is circulated throughout the two hatchery rooms for use in cleaning, calibration of instruments, and mixing of synthetic sea water for the FRL's holding, display, and organism production tanks. A synthetic saltwater production system was installed consisting of two 16gal tanks, UV sterilizers, 5 micron filters, and fluidized bed bio-filters. Eighteen 2L sepatory funnels were installed into shelves to be used as hatching vessels able to produce approximately 35 million *Artemia nauplii* per day. The use of many small funnels allows for daily adjustments in total production based on daily need, and/or spacing of hatching throughout a 24 hour period. Twelve, 5 gal tanks allow for the continuous culture of rotifers, with each tank culture containing over 16 million rotifers, with the ability to enrich rotifers, via feeding, in order to deliver the optimum nutrients required by the various potential species being held or cultured throughout the FRL.

In addition:

- Fisheries Research Lab biologists investigated fish kills throughout coastal Louisiana.
- Disperse oyster larva and set spat on cultch sites and inshore artificial reef sites.
- Public calls and/or biologist observations required collection of water quality data and fish mortality information.
- Biologists responded to dolphin, whale, and sea turtle stranding calls throughout coastal Louisiana.

Working with the Office of Fisheries, FRL personnel collected shrimp, crabs, and finfish tissue samples

following a strict protocol developed by the Food and Drug Administration (FDA) and National Oceanic and Atmospheric Association (NOAA). Samples were forwarded to the Pascagoula NOAA Lab for further testing. Results from tissue samples provided necessary information the Secretary needed to determine recreational and commercial fishery openings.

Marine Boating Access

Access, Opportunity, and Outreach also creates, enhances, and restores Louisiana's inventory of public boating and fishing access sites. Access sites, such as marinas, boat launches, and fishing piers serve as doorways to the state's natural resources. In a cooperative effort, LDWF assists local government entities requesting financial assistance in the development and construction of boating and fishing access facilities. To accomplish this, LDWF obligates a portion of its federal funding and Sport Fish Restoration (SFR) funds to match up to 75% of the total costs of these projects. This program funds both freshwater and saltwater projects including the construction of boat ramps, parking areas, docks, bulk heading, and fishing piers. A total of 99 projects are complete to date, and another 7 are in various stages of either planning or construction.

Tax revenues from these sites provide economic benefit to the state from consumer use by owners and recreational users. Not strictly limited to site selection and construction oversight duties, the Office of Fisheries also works in concert with local municipalities, media channels, and landowners in the marketing and promotion of the sites.

Sport Fish Utilization of Artificial Reefs vs. Open Water Habitats (F-130-R)

The objective of this project is to quantify the effects of habitat enhancement, in the form of addition of artificial materials (small artificial reefs and submerged-aquatic vegetation, SAV) meant to improve nursery function, on the structure of the fish communities, food webs, and marsh pond ecosystems. This project utilizes a Before-After-Control-Impact study in marsh ponds near Empire, Louisiana. Sampling includes empirical sampling for species identification, tissue analyses of samples collected during fieldtrips on caloric content, isotopes, and stomach content, DIDSON hydro-acoustic data analysis, and Radio-Frequency Identification (RFID) array to observe movement, and fidelity of PIT-tagged fishes. All samples have been taken and processed for the project. Analyses of the collected data are currently underway and will be completed in the following year.

Fisheries and Habitat Assessment of Bayou St. John (F-131-R)

City Park is a public park located in the heart of New Orleans. It features two historical waterways and a set of manmade lagoons that connect to Lake Pontchartrain. Bayou St. John, Bayou Metairie and the lagoons have an estuarine influence, yet are still fresh enough to harbor freshwater fishes. The objectives of this project are to reestablish water flow through the Bayou St. John complex to improve water quality and fisheries habitat through plantings and shoreline alteration, and to determine habitat utilization by sport fish. Preliminary analysis indicates that the sonic-tagged red drum reintroduced to the system avoid the southern portion of Bayou St. John and are associated with open or moving water in areas closer to Lake Pontchartrain. Also, City Park conducted shoreline planting projects for fisheries habitat improvement and purchased a water quality monitoring system. A series of eight water quality monitoring stations have been installed along Bayou St. John and real-time data is being collected.

Assessment of Louisiana's Marine Finfishes (F-97)

High quality data for the stock assessment for various species are essential for making management decisions. This project will determine the spawning ratio of the major recreational saltwater finfish in order to comply with legislative mandates that regulatory action be taken when the Spawning Potential Ratio falls below 30%. The goal is to ensure that the stocks of these finfish are not over-fished. The spawning potential ratio will be determined using age, growth, and fecundity. LSU will assist with the analysis of samples. Marine Fisheries sampling crews obtain otoliths from important marine fish. Additional work is added as needed to address age, growth, and reproductive biology of selected finfishes to support stock assessment efforts. This project

started on July 1, 1999 and is ongoing.

Evaluating Sport Fish Use of Created Wetlands in the Atchafalaya Delta (F-107)

The objective of this project is to evaluate the sport fish use of submerged aquatic vegetation (SAV) and mudflat habitats in the Atchafalaya Delta. During this year, sampling was preformed for the second SAV growing season, dormant season, and the early SAV growing season. Samples have been fully processed from all sampling trips. After analyzing all trip samples, results showed that both vegetated habitats showed higher nekton densities than unvegetated for most species. In addition, most species showed little to no preference between vegetation habitats.

Identifying Essential Fish Habitats in Barataria Bay (F-106)

The objective of this project is to develop a better understanding of the relationship between wetlands habitats and fisheries productivity in Louisiana, and the efforts to maintain and restore both. Several studies have been performed to help achieve this objective including a Before-After-Control-Impact study with data collected by LDWF in Breton Sound, Mean Trophic Level Index in the Gulf of Mexico, multivariate analyses relating nekton biomass distributions to habitat characteristics, DIDSON hydro-acoustic data analysis, and tissue analyses of samples collected during fieldtrips on caloric content, isotopes, and stomach content, and to model the effect of the diversion using Ecopath with Ecosim software. Analyses of the five most abundant species in each Coastal Study Area (CSA) has begun to determine species biomass distribution.

Marine Sport Fish Tagging Study (F-124)

This project will develop an alternative estimate of red drum escapement through a tagging study using a diverse partnership among fisheries scientists and volunteer anglers. Angler education is an important component of this project. LSU is a funding and research cooperator. This project started on July 1, 2004 and is scheduled to continue through 2013. In 2011, over 3,300 red drum were tagged and released and 204 red drum were reported as recaptured.

Louisiana Aquatic Outreach (F-136-EO)

Through outreach efforts, LDWF advises beneficiaries on stewardship and best practices in preserving the unique nature of the state's natural resources. Via a strong presence at youth recreational events, industry related expos, and other state sponsored events, LDWF strives to align its efforts with the desires of citizens and foster a community sense of resource and habitat stewardship.

The Aquatic Outreach Program is designed to inform the public about the SFR Program to show that it is a vital funding source for aquatic access, resource enhancement, and management projects in Louisiana. LDWF participated in 50 public events throughout the year to inform attendees of the department's various SFR projects and the importance of purchasing a fishing license. An assortment of printed materials was distributed at these events, as well as a SFR brochure, designed specifically to highlight the funding cycle and projects SFR funding supports.

The Aquatic Outreach Program developed an informal, five question survey given to the public at the Bassmaster Classic in February of 2011. Four hundred sixty-seven surveys were completed and half of the responders were male, between the ages of 41-49. Ninety percent of all responders ranked their fishing experience in Louisiana over the last two years as "Good to Excellent". When asked, "What information would you like to see the fisheries outreach program present at future events?" most (nearly 50%) wanted more information on fishing access/where to fish and kids' programs/youth events.

Through participation in outreach events and distribution of educational materials, the Aquatic Outreach Program message reached over 212,000 Louisiana citizens.

Environmental and Habitat Disaster Recovery

The Office of Fisheries strives to maintain Louisiana's abundant fishery resources and its commercial and recreational opportunities by seeking and efficiently implementing federally funded programs to aid the recreational and commercial fishing industries in recovery from

natural and man-made disasters. Since Hurricane Andrew in 1992, the Office of Fisheries has received continual federal appropriations to assist the commercial and recreational fishing industries during times of declared disasters and aid these industries in recovery from the devastation. The recovery efforts include repairs to state fish hatcheries, building of artificial reefs, and grant assistance awarded to vital fishing and boating access points.

Emergency Disaster Relief Program (EDRP) 1

In response to the hurricanes of 2005, Congress authorized its first fishery disaster relief in June 2006 (Public Law 109-234). On Aug. 25, 2006, the U.S. Department of Commerce announced the issuing of a grant to the GSMFC to aid Louisiana, Mississippi, Alabama, Texas and Florida in rebuilding fisheries. The National Oceanic and Atmospheric Administration (NOAA) granted funds to GSMFC for further subgrant to the Gulf Coast states. Louisiana's subgrant awards are: OR-RRR-020-2006-01 entitled "Reseeding, Rehabilitating and Restoring Oyster Reefs" (Job 1); OB-SGR-021-2006-01 entitled "Rehabilitating Oyster Bed and Shrimp Grounds" (Job 2); and CR-M-022-2006-01 entitled "Cooperative Research to Monitor Recovery of Gulf Fisheries" (Job 3).

Following the passage of Hurricanes Katrina and Rita, fishermen from across the coast formed the Louisiana Fishing Communities Rebuilding Coalition and identified funding priorities for the recovery of Louisiana's commercial and recreational fisheries. Priorities including debris removal and the evaluation of the status and health of natural resources are addressed by this congressional appropriation.

Projects were designed to be auditable and accountable, and to include local fishing communities and parishes or other local entities to best use local resources. General planning meetings were held among project staff on a regular and continuing basis throughout the planning and implementation period. Scoping and planning meetings were held with state and federal agencies and representatives of the fishing industries to identify needs and opportunities.

Job 1: Reseeding, Rehabilitation and Restoration of Oyster Grounds—Subgrant OR-RRR-020-206-01

Native Stock Oyster Hatchery

Louisiana State University has begun operation of an experimental oyster hatchery at the LDWF Fisheries Laboratory on Grand Isle, Louisiana. Due to the BP oil spill, the hatchery was used as an experimental area for oil-eating microbes rather than as an oyster hatchery in 2010. Using funds provided by the Emergency Disaster Rehabilitation Program (EDRP – Hurricane Katrina/Rita disaster), LDWF provided a $500,000 grant to LSU to develop an oyster hatchery to provide increased amounts of seed oysters to the oyster industry and the public oyster seed grounds.

Oyster Lease Data and Records Management

A contract to develop a data and records management system for the Oyster Lease Survey Section has been issued to Aero-Metric. After months of working with State Purchasing, three scanners were purchased - a large format book scanner, a medium book scanner and a bulk scanner.

Biological Monitoring of Existing Cultch Plants

Biological monitoring of the cultch plants has continued through 2010. During the annual stock assessment sampling on the public oyster seed grounds in July 2010, sample results suggested that the 2009 cultch plants were successful. Availability estimates based upon biological sampling ranged from 89.9 to 998.2 barrels per acre (one barrel = two sacks).

Job 2: Rehabilitating Oyster Bed and Shrimp Grounds—Subgrant OB-SGR-021-2006-01

Underwater Obstructions/Wet Debris Removal

With the approval of GSMFC, funding for this task was re-directed to implement cooperative research programs that enhance LDWF's ability to monitor recovery of Gulf of Mexico fisheries.

Debris Removal

Approximately 440 square miles (110 four-square mile grids) of the state's shrimp fishing grounds have been surveyed and cleared of hurricane debris

at a cost of $4.081 million. Activities under this task have been completed.

Coastal Habitat Rehabilitation and Enhancement

Two projects are being conducted by the LSU AgCenter:

- Use of Bio-Engineered Reefs for Shore Protection in Coastal Louisiana: Evaluation of Shore Protection and Ecosystem Trade-offs (contracted to LSU AgCenter) - This project compares the effectiveness, sustainability, and ecosystem effects of bio-engineered oyster reefs for shoreline protection along eroding medium and low energy sheltered shorelines. Shell oyster reefs were created in Caillou Lake (Sister Lake) in the Terrebonne Basin. The experimental design consists of different reef configurations in medium and low energy sites along the lake shore. In addition, off-bottom oyster racks are also deployed. Data collected at these sites measured: oyster growth rate; cumulative mortality; incidence of *Perkinsus marinus* and MSX infections; oyster condition; spat recruitment and settlement; nekton biomass; relative shoreline position; vegetation; soil percent organic matter; and chlorophyll. The goal is to evaluate the effectiveness of bio-engineered reefs as shoreline protection measures. The project is in its third year, and a contract is in process to extend the time period through June 2012.

- Evaluating the effect of marsh management structures on nekton utilization of salt marshes: A novel approach using DIDSON acoustic imaging technology (contracted to LSU AgCenter) - This project examined the effects of water control structures on nekton movement using dual-frequency identification sonar (DIDSON) acoustic imaging technology. The project specifically investigated the role of tide stage, diel periodicity and season on fine scale temporal and spatial patterns of nekton movement through water control structures in salt marshes. The project examined a site in Hopedale, Louisiana and several sites on Calcasieu Lake. The goal is to enhance our understanding of how fish move through these water control structures in the hopes that the findings may lead to development of structures that allow for greater movement. Findings of the Hopedale portion of the study are reported in:

  Kimball ME, Rozas LP, Boswell KM, Cowan (2010) Evaluating the effect of slot size and environmental variables on the passage of estuarine nekton through a water control structure. Journal of Experimental Marine Biology and Ecology 395:181-190.

Data Management System Improvements

LDWF issued an RFP in June of 2009 for the creation of a new Data Management System (DMS). Work on this new data management system began in July of 2010, with the full dissection of the existing system, documenting form and functionality for migration into the new DMS. The DMS has been implemented and refinements to certain processes continue.

Job 3: Cooperative Research to Monitor Recovery of Gulf Fisheries—Subgrant CR-M-022-2006-01

Fishery-Independent Monitoring of the Gulf Fishery Stocks

LDWF contracted with the University of New Orleans to collect and enter fishery-independent data within the Lake Pontchartrain system. Sampling is conducted using standard LDWF protocols at six stations located throughout Lake Pontchartrain and include sampling for both finfish and crustaceans. These data are being used by LDWF to evaluate and manage the recovery of the estuarine fisheries following Hurricanes Katrina and Rita. These data are also being used to establish a new "baseline" to further assess any changes within this important area. Data continue to be used to assess assemblage linkages with abiotic variables as well as to examine any changes directly associated with the closure of the Mississippi River Gulf Outlet.

Developing a Commercial Menhaden Bait Industry in Louisiana

The supply of menhaden bait is a crucial component of the commercial fishing industry throughout Louisiana. The last menhaden bait supplier in Louisiana went out of business following Hurricane Katrina in 2005. Ensuring the availability of a Louisiana-based menhaden supplier is an essential component of the commercial fishing industry's recovery.

The department issued a press release in February, 2011 to accept applications for grant fund development of a commercial menhaden bait supply for Louisiana fishermen. The deadline to submit an application was March 15, 2011. LDWF reviewed all applications for the most developed business plans, competitive amounts of working capital, and experience for the purpose of establishing a locally harvested menhaden bait operation that will offer a continual supply of bait throughout the year. After reviewing all applications, LDWF awarded grants to JB Bait Company, LLC and Louisiana Bait Products, LLC. In April 2011, both businesses signed a cooperative endeavor agreement with the LDWF. The department agreed to pay each business a maximum fee of $1,000,000.00 provided they submit quarterly and/or final reports. The two businesses received their first payment for their detailed business plan.

Quarterly reports throughout the year showed that both companies are behind their originally planned schedules to start fishing, but that significant progress had been made toward resolving many of the issues listed in their initial reports.

As of the end of December 2011, both companies contracted to develop a menhaden bait industry have yet to begin fishing operations citing funding and construction delays, as well as unexpected delays. LDWF conducted a site visit with Louisiana Bait Products and found significant progress has been made towards the goal of fishing. Funding is still short but LDWF is working to find ways to fill the funding gap and have both companies fishing by mid-2012.

SALT Recreational For-Hire Industry Survey

The survey was administered to 591 holders of a 2008 Louisiana resident charter captain license. The survey is designed to collect vital data on the effects of Hurricanes Katrina and Rita and on the current status of Louisiana's charter industry, as well as provide a method of distributing funds appropriated for charter industry relief. Data compiled from the survey will provide a better understanding of the industry status at present, what it needs to survive, the short-term and long-term impacts of the 2005 hurricanes, as well as other factors affecting the industry.

LSU Louisiana SeaGrant completed the administration of the survey and collection of data. They are in the process of analyzing their findings to produce the final report which will fulfill their contractual obligation. Cooperative research payments of $250 were made to those charter captains that participated. In spring of 2011, a final report was provided to the Department. This report was provided to department managers and economist for analysis.

Cooperative Research Surveys to Monitor Recovery of Gulf Fisheries

LDWF developed a $15.7 million cooperative research program to monitor the recovery of Louisiana commercial fisheries impacted by Hurricanes Katrina and Rita in 2005 and Gustav and Ike in 2008. Funding for this program came from a $52.9 million federal fisheries disaster assistance grant from NOAA (NOAA Grant Number NA06NMF4540319) through the GSMFC. LDWF will provide compensation to qualified Louisiana resident commercial fishermen and wholesale/retail seafood dealers who submit completed socioeconomic surveys. These surveys were designed by LDWF economists to capture information on the recovery status of the state's commercial fisheries and fishing industries.

Eligible commercial fishermen and wholesale/retail dealers received information packets during April 2009 including instructions, application forms and a business-reply envelope. Once required forms were returned, participants received an additional packet containing the Cooperative Research

Survey, detailed instructions for completing the survey and a self-addressed business reply envelope to be used in returning the completed survey.

A universe of 4,828 potential participants was identified, including 4,433 commercial harvesters and 395 wholesale/retail dealers. To date, 3,214 participating vendors with complete surveys have received funding. The total funds disbursed from this program are $13,239,821. The department and its contractor have completed scanning software tests to process data. All completed surveys have been scanned. Data is being incorporated into computerized databases.

EDRP2 Program Assistance to Commercial and Recreational Fisheries - Sub Grant ACF-025-2007-02

Much of the activities for this program took place in previous reporting periods. Some activities continued through 2011.

Baitfish Disease Investigations

The LSU School of Veterinary Medicine through the primary investigation of Dr. John Hawke has discovered and documented several new pathogens and important parasites and diseases of Gulf Killifish (*Fundulus grandis*) that have been collected from wild populations, bait shops, and from the cultured populations in research tanks at LSU Aquaculture Research Stations. Research in this area will continue. Dr. Hawke also has developed a PowerPoint presentation in conjunction with this research and is currently working on a brochure in cooperation with LSU AgCenter on Recognition and Management of Diseases and Parasites of the Cocahoe Minnow.

Providing Marine Baitfish to Louisiana Anglers

In the past year, under the primary investigations of Dr. Chris Green and Julie Anderson of the LSU AgCenter, School of Renewable Natural Resources, progress has been made in developing the cooperative research partnerships to collaborate with parties interested in various aspects of Gulf Killifish culture and holding for the live marine baitfish market. These partnerships have involved the Rockefeller Refuge of the Louisiana Department of Wildlife and Fisheries and associated private Louisiana entities. Data books that include subsections for collaborators entailing initial culture parameters have been completed. Workshops highlighting new research findings were conducted in the fall across the coastal region. A Cocahoe Minnow production manual is scheduled for publication next year.

Marina Database Update

LDWF worked in cooperation with LSU to continue marina data collection statewide to aid in the redesign of the existing static marina, boat launch, and commercial facility database created by LOSCO into an updatable database. When complete, the database will be made available to the public online and will provide information on marinas, boat launches, and commercial facilities such as operational status, location, ramp information, etc.

Hatchery Repairs and Fish Stocking

LDWF completed reconstruction of 15 one quarter acre ponds in 2011 and is working towards renovations of its Beechwood facility. Booker Fowler has also started planning for a final 10 pond renovation project.

Deepwater Horizon Activities

Fishery Openings/Closings

Currently, less than 0.5% of state inside and outside territorial waters remain closed to commercial fishing and certain recreational fishing activities due to the continued presence of oil from the *Deepwater Horizon* oil spill disaster. These closures occupy a portion of the birds foot delta of the Mississippi River which remains closed to commercial fishing, and portions of the Barataria Basin centered around Grand Terre Island and Bay Jimmy/Bay Batiste which remain closed to commercial fishing and all recreational fishing except for recreational and charterboat angling.

Tissue sampling for seafood safety

Since May 2010, the Louisiana Department of Wildlife and Fisheries has continued to test and analyze seafood coast wide on a regular, ongoing basis. In March 2011, LDWF formalized these efforts with the Department of Health and Hospitals (DHH), the Department of Agriculture and Forestry, and the Department of Environmental

Quality (DEQ) to create the Louisiana Seafood Safety Plan. The state sampling plan collects and tests samples from inshore species, near shore reef fish, and pelagic species along with corresponding water and sediment samples.

To date, 1203 statewide samples have been taken for seafood monitoring—(134) blue crab, (344) shrimp, and (725) finfish. All of these samples tested below the U.S. Food and Drug Administration's (FDA) levels of concern for polycyclic aromatic hydrocarbons (PAHs) and dispersants as established in response to the *Deepwater Horizon* oil spill.

LDWF has also entered into a cooperative agreement with NOAA and the U.S. FDA, to analyze samples taken in areas proposed for reopening after closures for the presence of PAHs and dispersants. Both state and cooperative NOAA/FDA sampling programs test seafood for the same levels of PAHs and dispersants as established by the FDA. In addition to the Seafood Safety Plan samples, 134 composite tissue samples have been taken for the NOAA/FDA reopening protocols. All of those samples tested below the FDA-established levels of concern.

Habitat Issues

LDWF Fisheries staff are actively assisting with the *Deepwater Horizon* oil spill Natural Resource Damage Assessment (NRDA) to determine impacts to Louisiana's natural resources and the human use of those resources. NRDA workplans are available online at http://losco-dwh.com/viewworkplans.aspx. Some of those workplans are designed to assess damages for fish, marine mammals and turtles, oysters, submerged aquatic vegetation (SAV), benthic habitats, and shoreline (including marsh and mangrove vegetation).

LDWF continues to receive and investigate all reports of stranded marine mammals and sea turtles as part of the ongoing NOAA Unusual Mortality Event of 2010. These reports are received from members of the public, local government officials, and natural resource advisors still working out on barrier islands and beaches. Where logistically possible and appropriate depending on state of decomposition, sea turtle and marine mammal carcasses are recovered for necropsy to be performed by a veterinarian.

Response for marine mammals and sea turtles for the Deepwater Horizon Spill Incident was initiated the first week of May 2010. Since that time, LDWF and other entities have investigated over 576 total marine mammal and sea turtle strandings and incidental captures throughout the entire coast of Louisiana including offshore. Of these animals, the following are included:

-249 marine mammals (including dead and live animals)
-327 sea turtles (including dead and live animals)

LDWF is the lead stranding response organization in the State of Louisiana, and continues to collect and sample these animals following established protocols while maintaining everything collected under a formal chain of custody.

Data Management

Since the *Deepwater Horizon* oil spill, more than 5,800 requests for trip ticket landings have been processed to assist with commercial fishermen's claims. After BP announced that it would require certified copies of trip ticket data from LDWF, the Department started receiving multiple sets of trip tickets from previous years, 2008 and 2009 in particular. All late submissions were thoroughly reviewed and forwarded to LDWF Enforcement for investigation. Multiple citations have been issued and several arrests for fraud have been made to date. Investigations are still continuing.

Inshore/Nearshore Sampling

In response to the need for information to assess the status of living marine resources in inshore waters, and in the shelf waters off of Louisiana, LDWF implemented a long-term independent monitoring program funded by BP in October 2010. Inshore sampling done under the independent monitoring program in response to the *Deepwater Horizon* oil spill is based upon LDWF's existing sampling program, and includes the addition of new stations and the incorporation of a stratified random sampling design. LDWF is also conducting nearshore sampling as part of the independent

monitoring program in order to generate fisheries-independent data on the species composition of groundfishes and shrimps found in the coastal waters of the Northern Gulf of Mexico as well as track environmental parameters. Sampling occurs monthly year round and employs a stratified random sampling scheme.

Economic Disaster Relief for Louisiana Due to Hurricanes Gustav and Ike

All activities for this program have been completed in prior reporting periods, through 2010.

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES

William W. Walker, Executive Director

Marine Fisheries Management

Objectives

Marine fisheries projects and activities coordinated through the Office of Marine Fisheries included:

- Design and initiate projects to collect and analyze data required for population dynamics estimates and other fisheries management projects;
- Develop scientifically-based management recommendations;
- Monitor the condition of fish stocks and the fisheries that depend upon them;
- Provide information transfer and liaison activities with regional fisheries management entities and others;
- Provide technical support to the Mississippi Commission of Marine Resources (MCMR) in developing fishery management plans, amendments, stock assessments, and technical analysis;
- Provide a state representative to serve on fisheries related boards, committees, panels, etc. as required; and
- Provide administrative services, general maintenance, locate funding sources, and other fisheries management support services as required.
- 2011 consisted of working closely with federal and state agencies, local fishermen, and seafood dealers on hurricane recovery efforts through the Emergency Disaster Recovery Program, designed to assist in the recovery and monitoring of the Mississippi seafood industry.

Status

During 2011, public notice was given to open and close commercial seasons for shrimp, oyster, blue crab, king mackerel, red snapper, red drum, and large coastal sharks. Regional management activities included membership on the GSMFC's TCC Artificial Reef Subcommittee, TCC Blue Crab Subcommittee, TCC Data Management Subcommittee, Oyster and Arenarius Technical Task Forces, Menhaden Advisory Committee; Commercial/Recreational Fisheries Advisory Panel, Technical Coordinating Committee, and State/Federal Fisheries Management Committee.

Grant documents and proposals were prepared to secure funding for fisheries management projects under the Sports Fish Restoration Act, the Cooperative Fishery Statistics Program, the Interjurisdictional Fisheries Act and liaison with Gulf of Mexico Fishery Management Council.

Shellfish Management Program

Objectives

Oysters, as sessile filter feeders, are more susceptible to influences of environmental conditions than mobile species. Accordingly, landings change dramatically from year to year. In addition to rainfall fluctuations, upland pollution can leave abundant supplies of oysters unsuitable for harvest. During the oyster season and throughout the year, field-sampling trips are made to oyster reef stations to collect water samples for fecal coliform analysis. Reef areas are opened and closed based on the level of fecal coliform in the water column, at the time of sampling. Oyster reefs in certain areas close after significant rainfall, or river stage events, until water quality significantly improves. Multiple stations are sampled in each reef area and clean samples must be obtained from each area before the area reopens for harvest. Throughout the year, water quality samples are obtained to properly classify shellfish-growing areas.

The Shellfish Sanitation Program is one of the most labor-intensive efforts of the department, requiring almost daily, routine water quality sampling and laboratory analysis for fecal coliform bacteria. The data are used to classify oyster-growing waters in accordance with guidelines from the National Shellfish Sanitation Program (NSSP) and to provide justification to reopen oyster reefs following closures.

For areas classified as "approved," the geometric mean fecal coliform level, most probable number (MPN) cannot exceed 14; no more than 10% of the samples taken can exceed 43 MPN. Additionally, the FDA specifies minimum sampling frequencies at each of nearly 170 sampling stations in the Mississippi Sound. Approved areas are those in which water quality does not degrade at any rainfall level. Areas classified as "conditionally approved" are subject to frequent openings and closures, due to rain or river stage. Along with water quality monitoring, other work performed on the reefs included revitalization efforts such as reef turnover, oyster relaying, and planting cultch material.

Key Responsibilities

- Administer Emergency Disaster Recovery Programs I&II;
- Maintain program compliance with the Interstate Shellfish Sanitation Conference NSSP;
- Map Mississippi oyster reefs;
- Survey potential cultivation and cultch planting sites;
- Cultivate oyster reefs;
- Planting of cultch material and management;
- Assess reef areas;
- Participate in the Natural Resource Damage Assessment (NRDA) with MDEQ and NOAA for Mississippi oysters due to the BP oil spill.

Status

The oyster season opened in January 3, 2011 and ended May 12, 2011 and oyster harvesters landed 30,852 sacks. Mississippi had a very limited oyster season for tonging only that opened October 24th and closed October 29th. There 1 trips, 65 sacks harvested.

Oyster harvesting waters are divided geographically into eight major areas. Through daily monitoring these areas may open and close according to the management plan criteria. Potential cultivation and cultch planting sites were surveyed. A scannable oyster trip ticket was fully implemented and oyster check stations were computerized.

Major Accomplishments

- The spring 2011 cultch plant was postponed due to the Bonnet Carré' Spillway opening. However we had a fall cultch plant that consisted 59,345 cubic yards of oyster shell and limestone. The material was deployed August 2, 2011 through September 19, 2011.
- The Deer Island restoration project provided 500 additional bags of oyster shells strategically placed adjacent to Deer Island to prevent erosion.
- The oyster reefs are continuously being monitored and assessed to determine the status of the resource. This includes the I.J. quarterly samples, 60 station intensive sampling and reef specific samples.

Shrimp and Crab Management

Objectives

The Shrimp and Crab Bureau managed the state's commercial and recreational shrimp and crab fisheries. Cooperation and coordination with adjoining state marine fisheries agencies as well as regional and federal fishery authorities were integral to the success of shrimp and crab management activities. The program included monitoring and research of the shrimp and crab fisheries, coordination of the Mississippi Crab Task Force, issuing scientific collection permits, inspecting and licensing the live bait shrimp fishery, installing and maintaining constant water quality recorder instruments, coordinating Wallop-Breaux grants with the U.S. Fish and Wildlife Service, and overseeing the Derelict Crab Trap Recycling Program. These fisheries are managed by setting seasons, gear regulations, and other management measures. Shrimp and crab biologists worked cooperatively with federal agencies including the NMFS, USFWS, GSMFC, GMFMC, and USGS.

Cooperating state agencies and organizations included University of Southern Mississippi's Center for Marine Science; Mississippi Department of Environmental Quality; Mississippi Department of Wildlife, Fisheries, and Parks; Mississippi State University Cooperative Research and Extension Service, as well as neighboring state marine resource management agencies. In 2010, the

Shrimp and Crab Bureau also cooperated on grants with the National Fish and Wildlife Foundation as well as the Fish America Foundation.

Key Responsibilities

- Long-term monitoring of shrimp populations in order to make management recommendations. Nearly 300 trawl samples were collected as part of the shrimp-monitoring program. Data collection included monitoring surface and bottom hydrological parameters at each station (salinity, temperature, and dissolved oxygen).
- Inspection of live bait shrimp operations and compilation of harvest and sales reports. The Live Bait Program included monthly compilation of Confidential Dealer Reports and licensing and inspecting live bait facilities. A trip ticket program was developed to improve data collection for this fishery.
- The Mississippi Crab Task Force was supported to allow various user groups to provide input and voice concerns. Since 2008, the task force has worked closely with the regional Diamondback Terrapin Work Group and began voluntarily placing TED gear in their traps, as well as encouraging other commercial and recreational crab trap fishermen to address potential incidental catch of this species of concern.
- Development continued on constant recorder instruments across the coast for real-time hydrological monitoring. Real time data of water temperature, salinity, and stage from ten Mississippi Sound sites were available on the MDMR web site.
- Issuance of Saltwater Scientific Collection Permits. Recipients of Special Permits must first submit an application and, once determined worthy of merit and the permit issued, a complete report of collection or harvesting activity must be submitted to the MDMR. Saltwater scientific collection permits were issued in a manner to protect Mississippi's marine resources while allowing legitimate research and development. Twenty-five Special Permits have been issued over the past year.
- Coordination of Sport Fish Restoration grants continued.
- The Derelict Crab Trap Recycling Program included recording the numbers of traps and area collected as well as documented ghost fishing (capture of animals other than crabs). There were a few derelict traps collected in 2011 to date, over 18,500 derelict traps have been collected and recycled along the Mississippi Coast, mainly through cooperation with crab fishermen and the USM Gulf Coast Research Laboratory. As a result of theses intensive derelict trap removal and recycling efforts, the program again received the First Place EPA Gulf Guardian Award.

All fisheries benefited from two on-going five- year NOAA funded Emergency Disaster Recovery Programs. Hurricane Katrina recovery and monitoring for the shrimp and crab fisheries continues in the wake of Hurricane Katrina with most projects completed or near completion. Cooperative seafood industry and MDMR activities administered under this grant include shrimp and crab recovery, cooperative monitoring, and storm-related derelict crab trap removal efforts.

Artificial Reef Management

Objectives

- To update coordinates and orientation of past artificial reef material deployments within Mississippi's marine waters and adjacent federal waters;
- To provide the MDMR web administrator with acquired coordinates of reef material, reef orientation, and maps and charts so that a portion of the web page can be created for the fishing community to access this information;
- Identify areas conducive to artificial reef development and enhancement both near shore and offshore within the framework of Mississippi's Artificial Reef Plan;
- Monitor artificial reef development in Mississippi's marine waters and adjacent federal waters; and
- Obtain artificial reef material from state,

federal, and private entities through donations.

Status

The Artificial Reef Bureau has been working with local contractors to get donated concrete material (concrete culverts, concrete rubble, and concrete light pole anchors) delivered to the Gulfport and Hancock County staging site.

- 36 gill nets conducted on inshore artificial reefs.
- Continuing to add to Katrina Key.
- Side scan in six oyster reefs zones.
- Side scan seven offshore artificial reef sites.
- Pass Christian Key 54 deployments, 16,637 tons of concrete rubble completed on October 24, 2011.
- Nine Deployments, 19,800 tons of concrete culverts.

The Mississippi Artificial Reef Rigs to Reef Program is currently working with a petroleum industry representative on a project in the main pass area south of Mississippi. Reef permits were obtained and the deployment should begin this summer.

Mississippi has 16 permitted offshore reefs encompassing approximately 16,000 acres of water bottom. These reefs range in size from one acre to 10,000 acres. To date, the material used for offshore reefs consists of concrete rubble, Goliath Reef Balls, Florida Limestone Pyramids, steel hull vessels (including barges), oil/gas platforms, and armored personnel carriers. Mississippi permitted 67 near shore artificial reef sites. These reefs were located inshore so fishermen can take advantage of the fish that inhabit these reefs. The materials of the near shore reefs consist of limestone, crushed concrete, concrete rubble (when water depth allows), and oyster shells. Nearshore reefs were deployed at strategic times of the year when optimum oyster spat will settle for future growth of the reef. Two methods used to monitor and update coordinates and orientation of past artificial reef material deployments were side scan sonar (used primarily offshore) and sounding with a pole (primarily inshore). Thirteen of the 16 artificial reef sites located offshore Mississippi and adjacent federal waters and two of the 67 inshore artificial reefs were surveyed using sidescan sonar. Thirty-four inshore reefs were verified using pole sounding. All coordinates obtained from sidescan sonar and soundings are listed on the MDMR web site and available to the public. Maps are also available upon request.

Finfish Management

Staff worked closely with appropriate federal and state agencies, various user groups, and the public. They strived to promote, conserve, and regulate these fisheries based on the best available biological, social, and economic data. Finfish fisheries dependent and independent programs with associated grants were closely monitored to ensure pre-established goals of each project were achieved. In addition to regular duties, finfish staff has worked with state and federal partners to monitor effects of the Deepwater Horizon oil spill.

Marine Recreational Fisheries Statistics Survey (MRFSS)

Objectives

- Conduct the MRFSS Survey in Mississippi for shore, charter, and private modes.
- Provide a timely and reliable database on marine recreational fishing activity.
- Identify notable changes in recreational catch and effort trends.
- Evaluate the long-term implications of management measures.
- Conduct weekly telephone interviews of charter boat operators in Mississippi.

Status

Recreational fisheries information was collected daily in all three modes through the survey. The data were processed, edited, and submitted to the GSMFC. The information provided a continuous standardized database of marine recreational catch, effort, and participation in the U.S. This data provided various fisheries councils the information necessary to make wise management decisions. Pressure estimates were submitted to the GSMFC according to schedule. These estimates, along with historical productivity, were used to estimate the number of assignments needed to achieve a given quota for each month. The MRFSS Program included a telephone survey of the charter boat

fishery and weekly telephone interviews were conducted. The number of telephone interviews was increased on random selection of 40% of the charter boats in Mississippi instead of 10%, as in years past. Data was entered and sent to the GSMFC weekly. The information was used to obtain effort estimates for the charter and head boat sectors.

Marine Commercial Fisheries Statistics

Objectives

- Collect commercial fisheries landings and catch data for Mississippi;
- Collect biological data for selected, commercially important finfish species;
- Obtain boat trip information and biological statistics on migratory pelagic and reef fish such as red snapper, grouper, and amberjack (collect otoliths from red snapper); and
- Expand the trip ticket system.

Status

Fisheries landing data were collected weekly and monthly according to schedule. The data were processed, edited, and submitted to the NMFS in accordance with established data handling procedures. This data is an important part of the fisheries management process, both as an indicator of potential problem areas and as a gauge of the success of existing fisheries regulations and practices.

Information for selected pelagic and reef fish was collected from major landing sites on a monthly basis. The information was submitted to the NMFS for inclusion in its trip information system. Both state and federal fisheries managers utilized these data to properly manage valuable resources.

Biological data were collected for selected, commercially important finfish species from major seafood dealers along the Mississippi Gulf Coast. Some information will be utilized in the development of both state and regional fishery management plans.

Sportfish Tag and Release in Mississippi Coastal Waters and the Adjacent Gulf of Mexico

Objectives

- Continue angler-cooperative tag and release of spotted seatrout in Mississippi coastal waters, specifically to obtain data on the seasonal movement patterns of fish of legal size.
- Continue angler-cooperative tag and release of tripletail and cobia in Mississippi coastal waters and the adjacent Gulf of Mexico, in order to obtain data on seasonal movement patterns.
- Coordinate a series of workshops to provide for the exchange of information, regarding the recreational fishery in Mississippi.

Status

Seasonal movement and growth of spotted seatrout were studied utilizing angler tagged and released spotted seatrout in Mississippi coastal waters. Similar trends of limited movement were observed in recaptured fish as in other years. Seasonal movement and growth of cobia were studied, utilizing angler-tagged and released cobia in the Gulf of Mexico. Future recaptures will supplement these initial data and allow for the analysis of migration trends.

Seafood Technology Program Management

Objectives

- Conduct regulatory inspections of shellfish processing and transporting facilities to determine compliance with state and federal sanitation and health safety regulations;
- Provide technical advice to the Mississippi seafood processing industry to aid in compliance with seafood sanitation and health safety regulations;
- Provide technical advice to the seafood processing industry regarding new technologies and new products that add value, new markets, employment opportunities, and economic enhancement for the seafood industry;
- Provide technical advice to those interested in aquaculture and aid in creating expanded economic and employment opportunities;
- Provide technical expertise in investigating food borne illness reports;

- Undertake research project in line with seafood industry impacts, seafood technical surveys, promotion of Mississippi seafood, seafood safety education, and sanitation training;
- Disseminate information and educate consumers and food handlers in the seafood industry about seafood safety in line with the goals of the Mississippi seafood industry;
- Promote food safety education to the public through participation in public fairs, public meetings, and events;
- Work in collaboration with the public affairs staff to develop and distribute brochures, pamphlets, and fact sheets on proper seafood preparation and handling;
- Work with the MDMR Seafood Marketing Bureau to promote Mississippi seafood products; and
- Provide administrative support to the activities of the office, department, and MCMR.

Status

A total of 6,220 technical assistance actions were provided. Some examples were:

- Technical advice and support inspections for the Mississippi Department of Agriculture and Commerce regarding regulated aquaculture activities;
- Collaborated with the other member state agencies on seafood safety with emphasis on raw seafood handling, risks on eating shellfish, and cooking seafood;
- Inspected Mississippi permitted shellfish processing, storage, and distribution facilities to determine compliance with state and federal sanitation and seafood safety regulations; to provide the public with confidence in Mississippi-inspected seafood products; and to aid in marketing Mississippi seafood products;
- Conducted statewide (24 counties) technical assistance and courtesy visits (114) to seafood retail stores, seafood processing facilities, seafood restaurants, grocery stores, roadside seafood vendors, docks, and marinas to monitor the impact of the oil spill on the seafood industry and perception of seafood safety;
- Distributed brochures, posters, fact sheets, and educational materials on the oil spill and seafood safety;
- Promoted Mississippi and Gulf of Mexico seafood products through distribution of printed materials and "Gulf Safe" brochure updates; and
- Promoted seafood consumption and awareness of seafood safety through public outreach, education, and participation at any seafood festivals, fairs, and events along the coast. Participated in 21 public outreach events all over the state.

Shellfish Sanitation and Health Safety Regulatory Activities

- Inspected Mississippi permitted shellfish processing, storage, and distribution facilities to determine compliance with state and federal sanitation and seafood safety regulations to provide the public with confidence in Mississippi-inspected seafood products and to aid in marketing Mississippi seafood products;
- Participated in the shellfish processing plant regulatory review and evaluation by the FDA;
- Received FDA notification that the Mississippi Shellfish Sanitation Program met NSSP requirements;
- Collaborated with Mississippi State University Coastal Research Extension Service in research surveys on economic impact assessments of the Mississippi seafood industry and seafood surveys;
- Participated in the Gulf and South Atlantic Shellfish Sanitation Conference;
- Attended the Food Safety Month seminar workshop on Food Allergens: "Dealing with Food Allergens: Who's Responsible What you need to know?"

Types and Number of Seafood Facilities Permitted

There were 55 seafood/sanitation processing permits issued which included 19 shrimp, nine crab and twenty seven oyster permits. These 55 permits represent 665 inspected seafood units. Examples

of seafood sanitation and health safety regulatory activities conducted by the Seafood Technology Bureau include: 523 seafood facility inspections, 6225 technical assistance and associated actions including water sample collections of processing plant source water samples for testing. Conducted inspections and associated actions to determine compliance with the following sanitation and seafood health safety regulations:

- Molluscan shellfish sanitation inspections covered under the NSSP;
- Sanitation inspections on seafood species other than molluscan shellfish to aid the industry in meeting compliance conditions when the FDA conducted official inspections;
- Conducted quarterly inspections of all permitted facilities and conducted follow-up inspections as needed, completed re-certification inspections of certified dealers, and issued permits;
- Work with seafood processors to correct deficiencies to meet FDA seafood compliance criteria;
- Work on management criteria and forms for dealers converting selected critical limits and critical control points from under HACCP management to management under standard operating procedures;
- Prepared consolidated report of inspection results for the FDA according to NSSP requirements;
- Provided seafood dealers with copies of the new FDA Guidelines on recall procedures;
- Implemented FDA regulations on product recall procedures;
- Distributed Recall Audit forms and recall flowcharts of product recall procedures to all seafood dealers;
- Developed Hazard Analysis Critical Control Point (HACCP) plans and sanitation forms for use in molluscan shellfish, shrimp, and crab processing facilities and seafood retailers;
- Prepared and distributed letters to molluscan shellfish dealers regarding updated HACCP plans; and
- Participated at the deliberation of issues and resolutions on shellfish sanitation at the Gulf and South Atlantic States Conference.

TEXAS PARKS AND WILDLIFE DEPARTMENT
COASTAL FISHERIES DIVISION

Mike Ray, Division Director

The Texas Parks and Wildlife Department (TPWD) Coastal Fisheries Division is responsible for making management recommendations regarding aquatic resources along the Texas Gulf Coastal Plain, within Texas bays and estuaries, their watersheds, and in state waters of the Gulf of Mexico from the shoreline seaward to nine nautical miles. The estimated value of fisheries within the four million acres of marine habitat exceeds $2 billion.

Coastal Fisheries Division Objectives

Coastal Fisheries long-term vision involves Texas coastal ecosystems that are ecologically healthy and that sustain economic and recreational opportunities for 3.5 million anglers and 10 million outdoor enthusiasts. Coastal fisheries is responsible for making fisheries management, habitat conservation and water resource recommendations that support a coastal resource-based economy valued at more than $2 billion annually. This mission is being accomplished by:

- Maintaining freshwater inflows and instream flows of sufficient quality and quantity to sustain the ecological health of Texas rivers, springs and estuaries
- Managing and conserving the marine environment including ecosystems, resources and habitats, and provide fishing and outdoor recreation opportunities
- Facilitating the collection, computerization, summary, analysis, and reporting of routine monitoring and special study data, conducting research and coordinating cooperative projects, and recommending, implementing, and evaluating fisheries management measures.

Major Program Activities

Assessments for Marine Resource Management

- Provide annual status assessments of finfish, shrimp, crab, and oyster populations and associated environmental conditions within the marine waters of Texas
- Work with user groups of recreational and commercial anglers and others with interest in marine resources to obtain input into resource issues
- Prepare and update long-range management plans for optimal sustainable yield of marine resources will provide consistent economic and sociological benefits to users and consumers of aquatic products while protecting the resource

Stock Identification and Research

- Manage and enhance existing fishery populations through stock identification, life history studies, and genetic and reproductive physiology research
- Coordinate studies to evaluate better methods to conserve and protect non-targeted aquatic species and to determine optimal uses of aquatic resources

Fisheries Enhancement

- Maintain and enhance existing fish stocks in selected marine habitats
- Provide continuous evaluation of the impact of fish stocking on resident populations and fishing success
- Operate marine fish hatcheries in Corpus Christi (CCA Marine Development Center), Lake Jackson (Sea Center Texas) and Palacios (Perry R. Bass Marine Fisheries Research Station)

Artificial Reef Program

- Oversee development and maintenance of artificial reefs off the Texas coast
- Evaluate utilization of artificial reefs by marine species, anglers and divers

Water Resources—Water Quantity Program

- Partner with other state agencies in statewide water planning and provide resource information to Regional Water Planning Groups to implement SB1

(1997), SB2 (2001) and SB3 (2007)
- Provide comments to Texas Commission on Environmental Quality (TCEQ) on water use permits and proposed water development projects in order to minimize potential on environmental flows and fish and wildlife resources
- Conduct geographic analysis of wetlands, salinity and fisheries abundance as part of the freshwater inflow analysis

Water Resources—Water Quality Program
- Provide comments to TCEQ on discharge permits and actions affecting fish and wildlife resources; and work with TCEQ on the implementation of the Total Maximum Daily Load projects
- Coordinate and collaborate with TCEQ and other state agencies on water quality policy and permitting activities that affect fish and wildlife resources

Ecosystem Resources Program
- Provide information to the public on the importance of wetlands to fish and wildlife and provide recommendations to the U.S. Army Corps of Engineers (USACE) to lessen impacts on state water and fish and wildlife resources
- Implement habitat restoration projects within the coastal plain with a goal of restoring and maintaining fish and wildlife habitat
- Respond to spills and pollution incidents that cause mortality of fish and wildlife; pursue civil restitution for the value of the fish or wildlife damaged; and oversee restitution projects conducted by the responsible party
- Coordinate and promote partnerships with local, state and federal entities on research and planning efforts which maintain and restore aquatic ecosystem health and function
- Calculate freshwater inflow needs to ensure that estuaries, wetlands and other coastal resources support healthy and productive fishery resources
- Manage multidisciplinary conservation workgroups with a goal of addressing Harmful Algal Blooms (HABs), freshwater inflows and habitat threats to seagrass habitats
- Assist local communities to conduct hands-on Coastal Expos that raise awareness of the coastal ecosystem to urban and minority populations

Cooperation with Other Resource Management Entities

The Coastal Fisheries Division collaborates extensively with all TPWD Divisions, as well was with many public and private entities in order to perform their mandated functions.

Some federal agencies include: the U.S. Fish & Wildlife Services, U.S. Geological Survey; Environmental Protection Agency, U.S. Army Corps of Engineers, National Oceanic and Atmospheric Administration, U.S. Department of Agriculture, National Marine Fisheries Service, and Natural Resource Conservation Service.

State agencies include: TCEQ, Texas Water Development Board (TWDB), General Land Office (GLO) and Texas Department of Transportation (TxDot).

Commissions and programs include: Gulf of Mexico Fishery Management Council, Gulf States Marine Fisheries Commission, Gulf of Mexico Alliance, Gulf of Mexico Program, Coastal Bend Bays and Estuaries Program, and Galveston Bay Estuary Program.

Other entities include: non-governmental organizations, conservation groups, river authorities, port authorities, industry, county and city governments, and universities.

Resource and Harvest Monitoring

Monitoring the relative abundance of adult fish in Texas bay waters was accomplished using 600-ft gill nets with individual 150-ft sections of three, four, five and six-inch stretched mesh. Bag seines (60 ft/½-in mesh) and trawls (20 ft/1½-in mesh) are used to determine abundance of juvenile and subadult finfish, shrimp, blue crabs, and associated organisms. Oyster dredges (19½ in wide) were used to collect oyster abundance data. Inshore

waters (within 9 nm) were also sampled with trawls. Total sampling effort during FY 2011 included 780 gill net sets; 2,160 bag seine tows; 2,640 bay and Gulf trawls; and 1,200 oyster dredge tows.

Relative abundance of finfish and shellfish in Texas offshore waters is monitored through long-term monitoring programs and a cooperative agreement with the GSMFC. Texas participated in the SEAMAP, a cooperative program between the Gulf States and federal government for collection, management, and dissemination of fishery-independent data and information in the southeast U.S. Data obtained from this sampling effort was used in evaluating the "Texas Closure" management measure of the GMFMC Shrimp Management Plan and to provide information on shrimp and groundfish stocks in the northern Gulf from inshore waters to 50 fm. In fulfillment of SEAMAP requirements, the TPWD collected 240 Gulf trawls in 2011.

Sport landings (private and guided boat) and associated angler activities were derived from on-site creel interviews of recreational anglers at the completion of their trips. Roving trailer and wet slip counts were used to assess relative pressure at sampling sites. Relative pressure was used to determine how often a site should be selected for a survey; higher use sites are surveyed more often than low use sites. A total of 1,049 survey days were spent to estimate landings and pressure of private and party boat fishermen.

Routine collection, editing, summarization, and publication of self-reported commercial landings data continued through a formal cooperative statistics agreement with the NMFS and a FIN Program grant. Landings and value were obtained from commercial seafood dealers through submission of trip tickets. The TPWD collected commercial landings statistics on crab, oyster, finfish, and shrimp.

Crab Trap Cleanup Program

During the 2011 closure held February 18-27, a minimum of 188 volunteers using 73 vessels expended 1,504 man-hours of effort (plus additional TPWD staff time) to remove 1,491 derelict traps coast wide. This effort brings the total number of traps removed since the program began in 2002 to 29,053. Seventy one percent of the traps have been removed from Galveston Bay (40%) and San Antonio Bay (32%) respectively. Additionally, more than 30 donors contributed monies, materials, time, site use, promotional services, and other assistance to help facilitate the program.

Research

The Perry R. Bass Marine Fisheries Research Station (Palacios) provided information and techniques necessary for improvement of Texas fisheries management strategies. Efforts to improve management or restoration of marine species were directed toward research in life history and genetics of important recreational and commercial species. In the past year, genetic studies were completed on alligator gar and southern flounder. Processing of genetic samples from these species was completed, and final reports were drafted for both genetic projects. A cooperative project with NMFS Law Enforcement to identify species of commercially marketed shrimp using DNA sequencing was completed. A genetic study of cold-stunned and killed green sea turtles from the middle Texas coast was completed and a report was drafted. A life history study on gray snapper age, growth, and reproduction was continued. Temperature tolerance studies of juvenile red drum and larval southern flounder were continued and a temperature tolerance study of juvenile spotted seatrout was initiated. Temperature tolerance data were collected and analyzed for all species and reports were drafted for spotted seatrout and red drum studies. Otoliths were collected from red drum and spotted seatrout to estimate age structure of Texas populations and update age-length keys for these fish. A cooperative project with the GSMFC continued to collect age and growth data on commercial and recreational catches of southern flounder, king mackerel, red snapper, greater amberjack, and black drum, red drum, spotted seatrout, gray snapper, vermillion snapper, gray triggerfish, and sheepshead. A routine fishery monitoring project using bag seines and gill nets continued in the Cedar Lakes area near the mouth of the San Bernard River.

Fish Stocking

Efforts continued to spawn and rear marine fish for stock enhancement at the CCA Marine Development Center (MDC) in Corpus Christi, Perry R. Bass Marine Fisheries Research Station (PRB) in Palacios, and Sea Center Texas (SCT) in Lake Jackson. Controlled photoperiod and temperature protocols were used to induce captive broodfish to spawn at the hatcheries. During peak spawning periods, personnel collected 1.5-2 million eggs per day. After hatching, larval fish were transferred to outdoor rearing ponds and grown to a target size of 35-40 mm TL.

During the 2011 fiscal year, a total of 15.9 million red drum fingerlings, 7.9 million spotted seatrout fingerlings averaged + s.e. 34.2 + 0.5 mm TL and 34.0 + 0.7 mm TL, respectively, were released into marine waters for purposes of stock enhancement. A total of 1.2 million red drum fingerlings with a mean size + s.e. of 36.1 + 2.1 mm TL were released into three freshwater reservoirs. Also, a small number (3,823) of southern flounder fingerlings averaged + s.e. 57.5 + 6.0 mm TL were reared at state fish hatcheries and stocked into Texas waters.

Hatchery research included the improvement of southern flounder broodfish procurement techniques, advances in spawning captive southern flounder, gender ID, and investigations of sperm cryopreservation methods. Technical information regarding fish hatchery development was provided to other coastal states in a cooperative effort to enhance coastal marine fisheries.

In addition to stock enhancement, each facility provided public outreach activities. Interpretive displays, touch tanks, and aquaria appeal to visitors. Sea Center Texas welcomed over 56,304 visitors in 2011. The Marine Development Center toured 1,581 visitors, and the PRB satellite pond facility received eight visitors. These facilities, touted as the world's largest red drum hatcheries, represent a unique merger of fisheries science and visitor education.

Habitat Protection

In FY 2011, the Ecosystem Resources Program (ERP) staff continued to play a significant role in initiating and implementing numerous coastal restoration projects along the Texas Coast. The Natural Staff continued to work with Natural Resource Damage Assessment (NRDA) Trustees to provide information for potential projects to for settlement claims for Deepwater Horizon impacts. Project planning continued with the project alternative modeling completed for the Keith Lake Fish Pass Project. The interagency workgroup has selected the preliminary design to move forward to the U.S. Army Corps of Engineers (USACE). This project will lead to the conservation and restoration of numerous coastal habitats including fresh to saline intertidal marsh. TPWD continues to lead a multi-agency workgroup that focuses on developing and implementing restoration projects to ensure the long-term health of marshes in the Salt Bayou system. The portion of the West Bay restoration project associated with the American Recovery and restoration Act (ARRA) was completed during December of 2010. This project restored about 500 acres of intertidal salt marsh (doubling the restored acreage in West Bay) and was completed in less than two years. Additional grant proposals were written to assist a local NGO in the acquisition of the Settegast Road tract on Galveston Island, to restore seven acres of intertidal marsh in Dickinson Bayou, and to implement the Dagger and Ransom Island Restoration Project. During 2011, several projects were notified of receiving grant awards including the Follet's Island Initiative project, Settegast and West Bay Restoration projects.

The Coastal Fisheries and Wildlife Division staff continued to work with partners (TPWD Wildlife staff, Golden Pass Liquid Natural Gas (GPLNG) Terminal, Jefferson County and Ducks Unlimited) to plan for future use of beneficial dredge material. Recent efforts were successful to beneficially utilize 2.7 million cubic yards of dredged material from GPLNG's shipping berth to restore over 1,200 acres of marsh in the J.D. Murphree Wildlife Management Area. Due to the cost savings for GPLNG, this partner has committed to working with TPWD to restore marsh associated with their future dredging cycles. The initial restoration target of 37.5 acres from funds from the NOAA Hurricane Ike grant has been used as the catalyst to capitalize on the needs and efforts of all partners and has the potential to result in over 20,000 acres

restored in the next ten years. Because of the success in these efforts, private landowners are interested in their lands being restored as part of the larger restoration strategy.

Engineering was completed for the Old River Cove shoreline protection project. This joint project between ERP and Wildlife Staff will construct 2,200 feet of rock breakwater and restore five acres of tidal marsh in Sabine Lake. This breakwater will halt erosion that threatens to disrupt the hydrology of the freshwater tidal marshes in the Old River Cover Unit of the Lower Neches Wildlife Management Area. Project construction was completed in FY 2011.

The ERP staff commented on over 220- 198 Section 404/10 permit applications that would impact coastal natural resources. Additional efforts of staff were needed as more Mitigation Banking Instruments were drafted for review by the Interagency Review Team. Currently five, of the approximately 15 mitigation banks proposed, are in this stage of review. Staff continued to work with the Wildlife Division and other land managers to elevate the effectiveness of mitigation projects on department managed and privately held lands. Additional efforts to track other Texas agency comments to TPWD comments on permits was initiated in 2010 in response to the HB 3391 which also resulted in the plans during 2011 to redevelop the current permit tracking database.

Staff participated in various Interagency Coordination Teams (ICT) and IRTs for federal projects administered by the U. S. Army Corps of Engineers (USACE). These projects included Houston-Galveston Ship Channels, Matagorda Ship Channel Improvement ICT, Freeport Channel ICT, Clear Creek Flood Damage Reduction ICT, GIWW-Corpus Christi to Port Isabel ICT, and the Sabine-Neches Waterway ICT. Staff participation provided the primary input for the State regarding the impact to fish and wildlife resources from these projects to the federal government and project proponents.

The Ecosystem Resources Program staff was also involved in numerous planning groups including the Dickinson Bayou Watershed Planning Group, the Gulf of Mexico Alliance, Southeast Aquatic Partnership, and the multi-stakeholder Executive Councils and subcommittees of the local Estuary Programs (Galveston Bay Estuary Program, Coastal Bend Bays Foundation and the Coastal Bend Bay and Estuaries Program). TPWD has played a lead role in the Gulf of Mexico Alliance in establishing regional sediment management as a tool for coastal restoration and maintenance and in changing the federal standard to recognize dredged material as a coastal resource rather than a waste product. Staff participated as part of the Science Coordination Team for the Gulf Coast Ecosystem Restoration Task Force to help develop strategies for restoring the Gulf of Mexico following the Deep Water Horizon event.

Staff continues to work with land trusts and land conservancy organizations working on projects along the coast. These organizations include the Texas Nature Conservancy, Legacy Land Trust, Coastal Bend Land Trust, Scenic Galveston, Galveston Bay Foundation, Trust for Public Land, Friends of Galveston Island State Park, Audubon Texas, Gulf Coast Joint Ventures, and the Conservation Fund. Staff provides technical information, supports biological assessments, and participates in technical advisory committees. These efforts assisted our conservation partners in receiving grant funds to acquire significant land tracts for conservation and outdoor recreation in Galveston, Chambers, and Victoria Counties.

Staff continues to provide coordination and assistance with fish and wildlife assessments due to algal blooms, pollution and 2011 freeze event. During February 2011, a cold weather event impacted about 300,000 fish and stranded over 1,520 sea turtles. This event had fish mortality estimates similar to the freeze event in 1997, except that the majority of the species impacted in 2011 were non-recreational species. Of the sea turtles that were stranded, approximately 230 were recorded as dead. The stranded sea turtles were picked up, held in rehab facilities and then released. The rapid release of sea turtles into warmer Gulf waters was used for this event and was a successful strategy that minimized holding

time, space needed and mortality due to holding. All turtles were green sea turtles except for two (one loggerhead and one hawksbill).

TPWD hosted The Freshwater Inflows: 2010 and Beyond Conference from Feb 8-10, 2010 in Corpus Christi. Digital versions of the conference proceedings were mailed to participants during FY 2011.

TPWD continued hosting the multi-agency Texas Seagrass Monitoring workgroup which is moving forward in refining a proposed statewide seagrass monitoring program. The workgroup continued the process of writing proceedings for the Seagrass Conservation Plan Review Workshop held in 2009. This document will review the progress made in the implementation of the Seagrass Conservation Plan since 1999 and make recommended updates.

TPWD coastal ecologists participated in a wide variety of activities that involve protection and restoration of coastal habitats beneficial to fish and wildlife, including the review of Applications for Permit to introduce fish, shellfish, or aquatic plants into Public Waters of Texas and Coastal Expo events along the coast of Texas.

Artificial Reef Program

The Artificial Reef Program created several new reef sites. It was responsible for maintaining 65 permitted reef sites, eight USCG required permanent marker buoys and two mooring buoys in the Outer Continental Shelf area of the Gulf of Mexico in FY2011. The Program received eight petroleum structures and over $2.5 million in donations. Three of the structures were reefed in place by partial removal, and the other five were towed to existing reef sites. Nine other petroleum donation agreements were signed during FY2011 and are in various stages of completion.

The nearshore reef program gained two new reef sites. The Matagorda (BA-439) permit and Corpus Christi (MU-775) nearshore reef sites were approved by the US Army Corps of Engineers (USACOE). Both sites are 160 acres in size. Plans also continued for the expansion of the George Vancouver Liberty Ship reef (BA-336) from its current 40 acres to 160 acres. An archeology survey was planned for late FY2011 as part of the expansion application to the USACOE. Overall, nearshore reef work included the reefing of 400 open and semi-open pyramid reefs (Florida Limestone Reefs) at SALT (HI-A-85), and over 4,000 concrete culverts at Port Mansfield nearshore reef (S-1047). An additional 191 tons of quarry rock and 21,000 lbs of concrete were reefed at Sabine Reef (HI-117). The Coastal Conservation Association assisted by donating $50,000 to the Artificial Reef Program to assist in the Port Mansfield project.

The reef program continued funding projects through the $1.5 million Coastal Impact Assistance Program grant received last year for several nearshore reefing projects. Three interagency biological monitoring contracts were signed with TAMU-Galveston, TAMU-Corpus Christi, and UT-Brownsville. All three universities will conduct monitoring on nearby artificial reefs.

The TPWD Artificial Reef Program offshore biological monitoring began after a hiatus in FY2010 due to the Deepwater Horizon oil spill in the Gulf which affected the availability of dive vessels. Three three-day dive trips were made by staff in June, July, and August 2011. Scientific divers from other institutions assisted in our monitoring and logged over 528 volunteer hours.

The program reached some of its public relations goals in FY2011 by designing and purchasing a new display booth for use at high profile public events. The display incorporates a backdrop, two kiosks, and a TV monitor. It was first used in March 2011 at the 3rd Annual Decommissioning and Abandonment Conference (for petroleum platforms) for the Gulf of Mexico in Houston. Progress was also made on the design of a new TPWD Artificial Reef website to make it easier for the public to obtain information on the program.

Water Resources

The Water Resources Branch coordinated TPWD non-voting members on each of the seven coastal Regional Water Planning Groups (RWPGs) established under Senate Bill 1. TPWD participates

by providing to the RWPGs information and technical assistance necessary to protect natural resources in those regions. TPWD also reviews and provides comments regarding regional water plan documents and the draft State Water Plan. The third cycle of five-year regional water planning culminated with the adoption of the 2012 Texas State Water Plan on December 15, 2011.

Department staff successfully negotiated a settlement with the Lower Colorado River Authority (LCRA) to minimize adverse effects due to altered freshwater inflows into Matagorda Bay. On April 20, 2011, the Texas Commission on Environmental Quality issued a permit that allows LCRA to capture as much as 853,514 acre-feet of water per year during floods and other high-flow times. Water right permit conditions were included to protect the lower Colorado River and Matagorda Bay. TPWD also participated as a member of LCRA's Water Management Plan (WMP) Advisory Committee. LCRA's Water Management Plan governs how LCRA operates its reservoirs to provide water to cities, rice irrigators and Matagorda Bay. The TPWD has also negotiated a settlement agreement with the Brazos River Authority (BRA) to protect environmental flows in the Brazos River Basin as part of BRA's Systems Operation permit. That matter has been remanded by the TCEQ to the State Office of Administrative Hearings. TPWD is currently working with the BRA and others to draft a Water Management Plan.

In 2007, the Texas Legislature passed Senate Bill 3 (SB3) which established a statewide, stakeholder-driven process to protect environmental flows. The final outcome of the process will be protected environmental flow regimes that will help ensure healthy rivers, streams and estuaries for Texas. TPWD staff has and will continue to provide technical expertise to develop technical guidance and provide support necessary to identify environmental flow regimes adequate to support sound ecological environments. On April 20, 2011, the Texas Commission on Environmental Quality (TCEQ) established by rule environmental flow standards for the Sabine/Neches and Trinity/San Jacinto Basin and Bay Areas. Proposed environmental flow standards for the Colorado/Lavaca and Guadalupe, San Antonio and Mission Aransas Basin and Bay areas were released on March 11, 2012.

In June 2010, the TCEQ adopted a revision of the Texas Surface Water Quality Standards. Staff worked with TCEQ throughout this multi-year process and department comments led to several changes in the final draft that increased protection for sport fish and habitat, including a higher minimum dissolved oxygen level for Oso Bay and the Laguna Madre than TCEQ had originally proposed. A TPWD-TCEQ interagency technical group that was formed in 2000 continued their process to discuss, revise, and implement changes regarding how biological information is used in the Texas Surface Water Quality Standards. Nitrogen and phosphorus levels can impact uses of water bodies, and high levels of nutrients can be harmful to fish and aquatic habitat. To address these impacts, the U.S. Environmental Protection Agency (EPA) has directed the states to develop numeric criteria for nutrients in each state's Surface Water Quality Standards. In 2011, TCEQ presented initial reviews of estuarine nutrient data and anticipates setting estuarine nutrient criteria in upcoming years. TPWD staff will continue to participate in this process to protect sport fish and their habitats.

Department biologists remained actively involved in the Total Maximum Daily Load (TMDL) and Watershed Protection Plan (WPP) processes with TCEQ and the Texas State Soil and Water Conservation Board. The TMDL process is designed to allocate pollutant loads to impaired water bodies from point and nonpoint sources in the watersheds. Watershed Protection Plans are efforts to develop and implement plans to reduce pollutant loads to acceptable levels. In addition, to address the suitability of various water bodies for contact recreation, TCEQ has initiated Recreational Use Attainability Analyses (RUUAs).

Aquaculture remains a significant issue in Texas. Legislation requires that TCEQ, the Texas Department of Agriculture, and TPWD maintain a Memorandum of Understanding (MOU) that ensures agency coordination in all aspects of aquaculture licensing, permitting, and response to emergency situations. TPWD staff efforts

have focused on review of wastewater discharge applications, as well as Texas Department of Agriculture aquaculture licenses, to protect native fish and their habitat. Staff coordinated with TCEQ on revision of the aquaculture wastewater discharge general permit, which was renewed in 2011.

Legislative and Regulatory Changes

Legislative Actions: The Texas 82nd Texas Legislature was in session during 2011. Six bills were passed that affected coastal fisheries management in the state.

1. H.B. 550 amended Parks and Wildlife Code to change the age provision for residents who are exempt from requiring a fishing license from whose date of birth is before September 1, 1930 to January 1, 1931.
2. H.B. 1322 amended Parks and Wildlife Code, to require a person possessing fish in a vessel on tidal waters to hold a fishing license. Consequently, when a vessel is stopped for a water safety inspection and fish are in possession the license requirement could be enforced at that point. This bill would allow game wardens to use their patrol hours effectively to enforce fishing violations.
3. S.B. 810 provides global positioning system coordinates to more accurately define the boundaries of Ingleside Cove Wildlife Sanctuary using modern tools.
4. S.B. 932 amended Section 76.020 (Oyster Shell Recovery and Replacement Program), Parks and Wildlife Code, to allow any suitable cultch material to be used in the coastal waters to maintain public oyster reefs. It also required the Texas Parks and Wildlife Department to sell harvester/shellfish restoration tags, with a fee of 20 cents or an amount set by the Texas Parks and Wildlife Commission (commission). The tag must be affixed to each sack of oysters at the time of harvest and must remain on the sack until delivered to a certified shellfish dealer. Funds generated from the tag will be used to replace suitable cultch material onto public reefs within bay systems along the Texas coast. The bill would also provide the ability for the commission to close and open areas with at least three days of published notice. This would allow for oyster reefs with a low amount of legal market oysters to be closed within a season.
5. S.B. 387 amended Section 76.303 (Sale of Raw Oysters for Consumption Within This State) to provide that any federal regulations that prohibit the interstate transport and sale of oysters that have not been postharvest treated do not apply to oysters harvested from waters of this state and sold and consumed in this state.
6. S.B. 1480 returns the regulation of exotic aquatic plants to a "black list" or "prohibited list" approach. In addition, the bill adjusts the penalties related to possession of an exotic aquatic plant downward to allow lesser penalties for minor violations and amends current law relating to the regulation of exotic aquatic species by the Parks and Wildlife Department, and provides penalties.

The 81st Legislature, Regular Session, 2009, H.B. 3391, which was the Texas Parks and Wildlife Department's (TPWD) Sunset bill, included a provision that required TPWD to move from a "black list" of exotic aquatic plants that are prohibited in this state to a "white list" concept of plants that are allowed. TPWD worked throughout the interim to establish an Exotic Aquatic Plant White List and accompanying rules.

However, after months of deliberation between TPWD and stakeholders, it became evident that the proposal was neither enforceable nor realistic for Texas. Approval of such a measure would have severely impacted the state's economy and the biofuel, nursery, and gardening industries throughout Texas. All stakeholders involved in the "white list" and rulemaking process requested that TPWD return to a "black list" approach. This legislation reflects an agreed upon approach between TPWD and stakeholders.

Texas Parks and Wildlife Commission (TPWC) Rule-making

Several new rules regarding saltwater fishing were approved by the TPWC.

1. Clarified that the use of circle hooks is only required when using natural bait. In 2007, the department restricted the means for taking red snapper to pole-and-line angling using only circle hooks.
2. Clarified the provisions governing the retention of finfish and other aquatic life on board a licensed commercial shrimp boat to explicitly state that only the owner of the commercial shrimp boat or the holder of a commercial shrimp boat captain's license is authorized to retain a catch of finfish or other aquatic life on board a commercial shrimp boat. The amendment would also clarify that the retention limit is an aggregate limit that applies collectively to all persons authorized to retain finfish and other aquatic life aboard a licensed commercial shrimp boat.
3. Implemented Oyster Harvest and Shell Recovery provisions of Senate Bill 932 (SB 932) by adoption of the following rules:
    a. Created a Harvester/Shell Recovery Tag for a cost of $.20 each & require the tag be placed on the outside of each sack of oysters at the time of harvest
    b. Reduced the legal oystering hours from the current sunrise to sunset to sunrise to 3:30 p.m.
    c. Reduced the daily commercial possession limit of oysters from 90 sacks to 50 sacks
    d. Authorized the Executive Director of the department to open and close oystering areas based on upon finding that the area is being overworked or damaged, or the area needs to be reseeded or restocked & require the executive director, in determining the need for a closure of an area, to state the criteria used to determine that a closure is warranted.

NATIONAL MARINE FISHERIES SERVICE, SOUTHEAST REGION
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

Roy E. Crabtree, Regional Administrator

The mission of NOAA Fisheries Service is stewardship of the nation's living marine resources. Through conservation and wise use, these resources and their habitats can be managed effectively and efficiently to maximize the benefit to the nation.

NOAA Fisheries Service administers programs to conserve, protect, and manage living marine resources in a way that ensures their continuation as functioning components of marine ecosystems, affords economic opportunities, and enhances the quality of life for the American public. These programs include services and products to support fishery conservation and management; protected species and habitat conservation; stewardship of international marine resources; law enforcement activities for marine mammals, endangered species, and regulated fisheries; scientific and technical aspects of marine fisheries research; seafood inspection; and more.

The NOAA Fisheries Service Southeast Regional Office (SERO) is located in St. Petersburg, Florida. The regional administrator represents the agency's assistant administrator in working with state conservation agencies, recreational interests, commercial industries, consumers, environmentalists, and the general public. The SERO planned, organized, and implemented marine resource conservation and management through a range of domestic and international programs and provided program planning and evaluation, budgeting, technical and administrative support to regional fishery management councils.

The NOAA Fisheries Service Southeast Fisheries Science Center (SEFSC) is located in Miami and has laboratories in Miami, Panama City, Beaufort, Pascagoula, Stennis Space Center, and Galveston. The SEFSC conducted multi-disciplinary research programs to provide management information to support national and regional programs and to respond to the needs of regional fishery management councils and other user groups. The SEFSC developed the scientific basis required for status of stocks and status of fisheries reports; environmental assessment and environmental impact statements for management plans and/or international negotiations; and pursued research to answer specific needs in habitat conservation, aquaculture, fishery engineering, marine mammals, endangered species, fishery oceanography, food sciences, and fishery economics.

Fishery Conservation and Management

Deepwater Horizon MC252 Oil Spill Rulemaking

By January 2011, NOAA Fisheries Service had reopened all but 1,041-square miles of federal waters immediately surrounding the well head (0.4 % of the Gulf of Mexico federal waters). In addition, in late 2010, NOAA Fisheries Service temporarily closed a 4,213-square mile area north and west of the well head to royal red shrimp fishing because a fisherman caught tar balls while trawling for royal red shrimp. This area was reopened on February 02, 2011. The area directly around the well head was reopened on April 19, 2011.

Gulf Shrimp Fishery

Annual Texas Closure

The annual closure of the shrimp fishery in the western Gulf of Mexico allows brown shrimp to reach a larger (and more valuable) size before harvest, preventing discard and waste of brown shrimp smaller than the preferred market size. For 2011, commercial shrimp fishing in federal waters off Texas was closed May 15 through July 15.

Shrimp Effort Analysis for Possible Closures

The red snapper rebuilding plan requires NOAA Fisheries Service to implement a time-area closure, as needed, to constrain shrimp effort (and associated bycatch mortality of red snapper) to a level less than a specific threshold. This closure is to occur within a designated area of the north-central and western Gulf of Mexico where high juvenile red snapper bycatch occurs. The effort reduction threshold is 74% less than the average

effort expended during the 2001-2003 time frame. In April 2011, NOAA Fisheries Service informed the Gulf of Mexico Fishery Management Council (Gulf Council) that no closure was necessary because 2010 shrimp effort was reduced more than the 74-percent threshold. For 2011, this effort threshold was relaxed to 67%. Effort data for 2011 will be analyzed in early 2012.

Annual Catch Limits & Accountability Measures

The Magnuson-Stevens Fishery Conservation and Management Act of 2006 established new requirements to end and prevent overfishing through the use of annual catch limits (ACLs) and accountability measures (AMs). The Gulf Council needed to establish ACLs and AMs by 2010 for stocks subject to overfishing and by 2011 for most other stocks. The Gulf Council approved the Generic ACL Amendment at its August 2011 meeting. The amendment addressed ACLs and AMs for royal red shrimp, red drum, and numerous reef fish species. NOAA Fisheries Service approved the amendment on December 15, 2011, and published a final rule on December 29, 2011, effective in January 2012.

Reef Fish Fishery

Grouper/Tilefish Individual Fishing Quota (IFQ) Program

NOAA Fisheries Service issued IFQ allocation to 698 shareholders in 2011. For 2011, landings, in gutted weight (gw in lbs) is provided in Table 1.

Red Snapper Individual Fishing Quota (IFQ)

NOAA Fisheries Service issued IFQ allocation to 417 shareholders in 2011, and fishermen landed 3.24 mp gw, or 98% of the 3.3-mp gw quota.

Beginning January 1, 2012, all U.S. citizens or permanent resident aliens were eligible to receive transfers of Gulf of Mexico Red Snapper IFQ shares or allocation. The Gulf Council is considering a provision to require shareholders to "use," as defined by the provision, all or some portion of their allocation, or be subject to losing their shares. The Gulf Council also is considering re-establishing a requirement to possess a Gulf commercial reef fish permit to receive shares or allocation under the program. Therefore, on November 30, 2011, NOAA Fisheries Service published an advanced notice of proposed rulemaking to set a control date of January 1, 2012, for the Red Snapper IFQ Program. This notice informed current and potential future participants that the Gulf Council is considering additional restrictions limiting participation.

Red Snapper Total Allowable Catch (TAC) Increase for 2011

A 2009 stock assessment update projected that overfishing has ended for Gulf of Mexico red snapper, and that TAC could be increased. The Gulf Council's Scientific and Statistical Committee (SSC) recommended acceptable catch levels for 2010 through 2012. Annual TAC increases are contingent on the TAC not being exceeded the previous year. Because of the Deepwater Horizon MC252 oil spill and resulting fishery closures, the recreational sector only harvested 66% of its quota in 2010, thus allowing a TAC increase in 2011. This regulatory amendment increased TAC from 6.945 mp to 7.185 mp for 2011, which resulted in commercial and recreational quotas to 3.66 mp and 3.525 mp, respectively. NOAA Fisheries Service published a proposed rule on February 22, 2011, and accepted comments through March 24,

Table 1. The 2011 Individual Fishing Quota (IFQ) landings, in gutted weight (lbs) by species or species group.

Species (or group)	*Landings*	*Quota*	*(%)*
Gag	318,895	430,000	(74)
Red grouper	4,780,000	5,230,00	(91)
Other Shallow Water grouper	186,951	410,000	(46)
Deep-water grouper	778,728	1,020,000	(76)
Tilefish	386,134	440,000	(88)

2011. The final rule published on April 29, 2011, effective May 31, 2011. The rule also established a June 1 through July 18 recreational fishing season for 2011.

Red Snapper Emergency Rule

In April 2011, the Gulf Council requested the red snapper assessment be rerun using actual landings for 2009 and 2010, because the recreational sector harvested only 66% of the recreational quota in 2010. Based on the results of that rerun, the SSC determined that the 2011 red snapper TAC could be increased from 7.185 to 7.53 mp for 2011. At the June 2011 meeting, the Gulf Council requested an emergency rule to adjust the TAC and provide the entire 345,000 pounds of increased TAC be assigned to the recreational quota for the 2011 season due to the greater economic impacts incurred to the recreational sector in 2010. The emergency rule also provided provisions for reopening the recreational red snapper season after the October 1, 2011, closure date, should this increased quota not be harvested during the established June 1 through July 18 fishing season. NOAA Fisheries Service published an emergency rule in the Federal Register on August 12, 2011, effective September 12, 2011. However, after reviewing the landings data from the recreational red snapper fishing season, NOAA Fisheries Service determined that the adjusted quota was caught during the initial 2011 season and could not reopen the season for additional harvest.

Red Snapper Regulatory Amendment (Revising Fall Recreational Fixed Closed Season and Setting 2012 and 2013 Quotas for Red Snapper)

During 2011, the Gulf Council worked cooperatively with NOAA Fisheries Service to develop a regulatory amendment to eliminate the fixed recreational red snapper closed season of October 1 to December 31, and set the 2012 and 2013 quotas for commercial and recreational harvest of red snapper in the Gulf of Mexico.

Greater Amberjack Seasonal Closure Regulatory Amendment

In December 2010, the Gulf Council submitted a regulatory amendment to establish a fixed recreational season closure during June and July for greater amberjack. NOAA Fisheries Service published a final rule on April 29, 2011, effective May 31, 2011.

In-Season Rule to Implement AMs for the Commercial and Recreational Greater Amberjack 2011 Quotas

Accountability measures for greater amberjack require quota overages to be deducted from the quotas the following year. NOAA Fisheries Service reduced the 2011 commercial and recreational quotas for greater amberjack. The rule, effective April 29, 2011, adjusted the 2011 commercial harvest from 503,000 lb to 313,900 lb and the recreational harvest from 1,368,000 lb to 1,315,224 lb to account for 2010 quota overages. Additionally, the rule announced a closure date for the commercial sector of 12:01 a.m., June 19, 2011, when NOAA Fisheries Service projected the quota would be harvested.

Subsequent analyses indicated 2010 commercial landings were less than previously thought. NOAA Fisheries Service published a follow-up rule on August 19, 2011, to adjust the 2011 commercial quota to 342,091 lb. In addition, because the quota was not caught by the closure date, NOAA Fisheries Service reopened commercial fishing on September 1, 2011, through October 20, 2011, when the remaining quota was projected to have been caught.

Gag Interim Rule

Issues surrounding the 2009 gag stock assessment update were not resolved until the Gulf Council's February 2011 meeting. Therefore, in 2010, the Gulf Council requested NOAA Fisheries Service publish an interim rule that would release 100,000 pounds of the gag quota for the commercial sector, and temporarily prohibit recreational harvest until an open recreational season can be established through Amendment 32. The rule also prohibited the use of red grouper multi-use allocation in the grouper-tilefish IFQ program. The interim rule became effective January 1, 2011. This rule was replaced by another interim rule, effective June 1 that set the commercial quota at 430,000 lb. This rule was extended to cover the remainder of 2011.

Red Grouper Regulatory Amendments

Based on a 2009 stock assessment update, the

Gulf Council developed a regulatory amendment reducing red grouper TAC from 7.57 mp to 5.68 mp for 2011. A final rule created a 4.32 mp commercial quota for 2011, effective January 1, 2011.

Subsequently, another assessment update in 2011 indicated the stock was in better shape than previously determined, and that TAC could be increased. The SSC recommended TAC levels for 2011 through 2015. The Gulf Council submitted a regulatory amendment making these adjustments on August 31, 2011. The final rule establishing commercial quotas, recreational catch targets, and an increase in the red grouper recreational bag limit was published on November 2, 2011, effective immediately. The commercial quota listed in the above table reflects this change.

Reef Fish Amendment 32

Amendment 32 is intended to establish a rebuilding plan for gag. Gag is currently undergoing overfishing and is overfished. Substantial (65-70%) reductions in harvest are necessary to meet the rebuilding targets. Actions in the amendment are also contingent upon consistent regulations being implemented by the State of Florida. The Gulf Council continued to develop this amendment during 2011 for implementation in 2012.

Reef Fish Amendment 34

The Gulf Council is currently developing Reef Fish Amendment 34 to remove the income qualification requirements for the renewal of Gulf of Mexico commercial reef fish permits and to adjust the crew size regulations for dual-permitted vessels while fishing commercially. Current income requirements to obtain or renew a commercial vessel permit for reef fish may no longer be necessary. Maximum crew size regulations stipulate that a dual-permitted vessel without a certificate of inspection is limited to a three person maximum crew size when fishing commercially. The Gulf Council is considering changing this to a four crew member maximum, thereby increasing the safety of commercial diving operations.

Reef Fish Amendment 35

Greater amberjack is overfished and undergoing overfishing. In February 2011, an update stock assessment was completed that indicated the stock is not rebuilding as scheduled in the current rebuilding plan. Based on recommendations from its SSC, the Gulf Council and NOAA Fisheries Service cooperatively initiated development of Amendment 35 to make changes to the rebuilding plan. If approved, it would reduce the allowable catch and establish a commercial trip limit of 2,000 lb for greater amberjack. A public hearing draft of the amendment was completed in December 2011, and the amendment is expected to be approved in early 2012.

Quota Monitoring

- Recreational Red Snapper: Federal waters opened June 1 and closed July 19, 2011. Preliminary estimates of recreational harvest during this open season indicate between 4.4 mp and 4.6 mp were landed, against a quota of 3.87 mp.
- Recreational Greater Amberjack: Preliminary estimates of recreational harvest indicate 1,035,060 lb of the 1,243,184-lb quota (83%), were landed in 2011.
- Commercial Greater Amberjack and Gray Triggerfish: The greater amberjack commercial quota was adjusted in 2011 for a 2010 quota overage. The quota for 2011 was 342,091 lb. Preliminary 2011 landings indicate that 607,653 lb (177% of the quota) was landed by the time fishing was closed on October 20, 2011. The commercial sector has greatly increased its focus on harvesting this species. The Gulf Council began development of Amendment 35, which in part includes a commercial trip limit as a harvest control mechanism. For gray triggerfish, 102,112 lb (96% of the quota) was landed.

Stone Crab Fishery

On September 23, 2011, NOAA Fisheries Service published a final rule in the *Federal Register* to repeal the Fishery Management Plan for the Stone Crab Fishery of the Gulf of Mexico. Because the stone crab plan only covered waters adjacent to Florida state waters and Florida has essentially the same regulations, the Gulf Council determined Florida could adequately manage the fishery. The repeal was effective October 24, 2011.

Spiny Lobster Fishery

Stone Crab Amendment 10

On November 17, 2011, NOAA Fisheries Service approved Amendment 10. A final rule implementing these regulations published in the Federal Register on December 2, 2011, effective in early 2012. The rule established ACLs and AMs for Gulf of Mexico and South Atlantic spiny lobster. The rule also removed four species from the management plan, revised the framework procedure and protocol for cooperation with Florida, modified tailing permit requirements, modified the restrictions on retention of undersized lobsters, and authorized Florida to remove derelict traps in federal waters.

Stone Crab Amendment 11

Amendment 11 is intended to address measures to reduce the impact of the fishery on protected species. Actions included establishing trap line marking requirements and closed areas to protect Acropora coral species. During the fall of 2011, the Gulf Council continued to develop this amendment for implementation in 2012.

Coastal Migratory Pelagic Fisheries: King and Spanish Mackerel, and Cobia

Coastal Migratory Amendment 18

On December 15, 2011, NOAA Fisheries Service approved Amendment 18. A final rule implementing these regulations published in the Federal Register on December 29, 2011, effective in early 2012. The rule established ACLs and AMs for Gulf of Mexico and South Atlantic king mackerel, Spanish mackerel, and cobia. The rule also removed four species from the management plan, established migratory groups for cobia, and revised the framework procedure.

Quota Monitoring Fishing Year 2010-2011

- The Florida West Coast southern subzone closed on February 2, 2011, to commercial gill net fishing for king mackerel.
- The Western zone closed on February 11, 2011, to commercial hook-and-line fishing for king mackerel
- The Florida East Coast subzone closed on February 26, 2011, to commercial hook-and-line fishing for king mackerel.
- The Florida West Coast southern subzone had the trip limit reduced to 500 lb per day of king mackerel on March 8, 2011, and closed on March 23, 2011, to commercial hook-and-line fishing for king mackerel.
- The Florida West Coast northern subzone closed on April 4, 2011, to commercial hook-and-line fishing for king mackerel.
- The Gulf of Mexico did not close commercial fishing for Spanish mackerel.

Quota Monitoring Fishing Year 2011-2012

- The Western zone closed on September 16, 2011, to commercial hook-and-line fishing for king mackerel.
- The Florida West Coast northern subzone closed on October 7, 2011, to commercial hook-and-line fishing for king mackerel.

Protected Resources

The Protected Resources Division is responsible for the conservation, management, and protection of marine mammals, and endangered and threatened species occurring in waters of the southeastern United States, Puerto Rico, and the U.S. Virgin Islands – administering provisions of the Marine Mammal Protection Act and Endangered Species Act for NOAA Fisheries Service, Southeast Region.

Biological Opinions

- Completed a biological opinion for the Bureau of Ocean Energy Management regarding a "Beach Re-nourishment Project" in Longboat Key, Manatee and Sarasota Counties, Florida; analyzing its effects on sea turtles and smalltooth sawfish.
- Completed a biological opinion for the Federal Highway Administration regarding "Widening of I-75 from North of SR-80 to South of SR-78" in Lee County, Florida; analyzing its effects on smalltooth sawfish and its designated critical habitat.
- Completed a biological opinion for the Eglin Air Force Base and the U.S. Army Corps of Engineers regarding a "Redevelopment of Waterside Facilities at Test Area D-84 at Eglin Air Force Base" east of Choctaw, Florida; analyzing its effects on sea turtles, smalltooth sawfish, Gulf sturgeon, and Gulf sturgeon critical

habitat.

- Completed a biological opinion for the "Continued Authorization of Reef Fish Fishing under the Gulf of Mexico Reef Fish Fishery Management Plan."
- Completed a biological opinion for the Mobile District Corps of Engineers regarding the "Construction of a Breakwater" in Harrison County, Mississippi; analyzing its impacts on Gulf sturgeon critical habitat.
- Completed a biological opinion for the Mobile District Corps of Engineers regarding the "Construction of a Municipal Harbor and Re-construction of the Rutherford Fishing Pier" in Hancock County, Mississippi; analyzing its effects on Gulf sturgeon, Gulf sturgeon critical habitat, and sea turtles.
- Completed a biological opinion for the Galveston District Corps of Engineers regarding "Explosive Removal of State Lease Platforms" in the coastal waters of Texas; analyzing the effects on loggerhead and Kemp's ridley sea turtles and designated critical habitat.
- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding "Proposed COE-issuance of Multiple (5) Regulatory Permits for the Dredging of Public Navigation Channels and Canals in Four Geographic Areas" of Lee County, Florida; analyzing its effects on sea turtles, smalltooth sawfish and ESA-designated smalltooth sawfish critical habitat.
- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding "Proposed COE-issuance of Two (2) Regulatory Permits to Authorize In-water Construction Activities" in Port Charlotte, Charlotte County, Florida; analyzing its effects on smalltooth sawfish and smalltooth sawfish critical habitat.
- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding the "Installation of a Concrete Seawall and Cap" in St. James City, Lee County, Florida; analyzing its effects on sea turtles, smalltooth sawfish and ESA-designated critical habitat for smalltooth sawfish.
- Completed eight biological opinions for the Jacksonville District Corps of Engineers regarding projects to "Replace/Repair, or Install Seawalls and caps, and/or Riprap and Associated Activities" in Charlotte County, Florida; analyzing its effects on smalltooth sawfish and smalltooth sawfish critical habitat.
- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding the "Installation of Riprap and Concrete Pavers at an Existing Boat Ramp" in Bokeelia, Lee County, Florida; analyzing its effects on smalltooth sawfish critical habitat.
- Completed three biological opinions for the Jacksonville District Corps of Engineers regarding projects to "Install Concrete Seawalls and Caps" in Lee County, Florida; analyzing its effects on sea turtles and smalltooth sawfish and ESA-designated critical habitat for smalltooth sawfish.
- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding the "Installation of Riprap, Replacement of Seawall Cap and Tie Backs, and Replacement of an Existing Access Walkway" in Lee County, Florida; analyzing its effects on sea turtles, smalltooth sawfish, and smalltooth sawfish critical habitat.
- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding the "Dredging of an Existing Channelized Creek and Basin" in Lee County, Florida; analyzing its effects on sea turtles, smalltooth sawfish, and smalltooth sawfish critical habitat.
- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding "Installation of Riprap, Removal of Black/White Mangroves, and Installation of T-shaped Dock with Boatlift" in Lee County, Florida; analyzing its effects on sea turtles, smalltooth sawfish, and smalltooth sawfish critical habitat.

- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding "Dredging an Existing Navigation Channel to Improve Boat Access" in Charlotte County, Florida; analyzing its effects on sea turtles, smalltooth sawfish, and smalltooth sawfish critical habitat.
- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding the "Construction of a Public Boat Ramp and Associated Tending Piers and an Upland Boat Trailer Parking Facility" in Charlotte County, Florida; analyzing its effects on smalltooth sawfish and smalltooth sawfish critical habitat.
- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding "Improvements and Construction of Blackburn Point Park" in Sarasota County, Florida; and its effects on sea turtles and smalltooth sawfish.
- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding the "Installation of a Concrete Seawall, Removal of Mangrove Shoreline, and the Construction of a Dock" in Charlotte County, Florida; analyzing its effects on smalltooth sawfish and ESA-designated critical habitat for smalltooth sawfish.

Conservation Measures

- Implemented the annual Marine Mammal Authorization Program to approximately 12,653 fishermen in the Gulf.
- Completed the Georgia Department of Natural Resources' ESA Section 6 Cooperative Agreement.
- Completed the Louisiana Department of Wildlife and Fisheries' ESA Section 6 Cooperative Agreement.
- Completed the Mississippi Department of Marine Resources' ESA Section 6 Cooperative Agreement.
- Completed the North Carolina Wildlife Resources Commission's ESA Section 6 Cooperative Agreement
- Completed the South Carolina Department of Natural Resources' ESA Section 6 Cooperative Agreement.
- Completed the Texas Parks and Wildlife Department's ESA Section 6 Cooperative Agreement.
- Completed the Florida Fish and Wildlife Conservation Commission's ESA Section 6 Cooperative Agreement.
- Completed the Alabama Department of Conservation and Natural Resources' ESA Section 6 Cooperative Agreement.
- Issued several authorizations to fish with a Georgia Jumper Turtle Excluder Device to test a method of improving shrimp retention efficiency in waters off northeast Florida and Georgia.
- On June 24, 2011, NMFS published in the Federal Register its intent to prepare an environmental impact statement and to conduct scoping meetings, and made available a scoping document presenting various approaches to addressing incidental bycatch and mortality of sea turtles in the southeastern shrimp fishery (76 FR 37050); the scoping period ended on August 23, 2011. Six public scoping meetings were conducted to discuss recent sea turtle strandings, potential issues within the southeastern shrimp fishery that may relate to these strandings, and potential management alternatives to reduce incidental sea turtle bycatch and mortality in the shrimp fishery: July 12 at Gray, Louisiana; July 12 at Belle Chasse, Louisiana; July 13 at Biloxi, Mississippi; July 14 at Bayou La Batre, Alabama; and July 18 at Morehead City, North Carolina. Due to a large turnout of Vietnamese fishermen and a lack of adequate translation services at the July 13 Biloxi, Mississippi meeting, an additional meeting with full translation services was conducted at Biloxi, Mississippi on July 26.
- Participated in partnership meeting with Florida Fish and Wildlife Commission, NOAA Office of Law Enforcement, and NOAA's Office of General Counsel for enforcement and litigation regarding dolphin feeding issues and strategies in Florida.
- Coordinating with Mississippi/Alabama

Sea Grant on soliciting a Request for Proposals for dolphin/human interaction research in the SER-based on outcomes from above workshop, and development of two Smartphone apps to enhance stranding response efforts and promote responsible marine mammal viewing.

- Planned, implemented, and executed one Dolphin SMART training in Orange Beach, Alabama.
- Evaluated and recognized two additional businesses for Dolphin SMART along southwest Florida Gulf Coast.
- Enhanced Dolphin SMART "proud supporter" program in Alabama, Key West, and Central west Florida coast with approximately 50 Proud Supporters.
- Distributed 24 Protect Dolphins signs and nine Dolphin Friendly Fishing Tips signs to be posted at boast ramps and fishing areas in Florida, Alabama, Louisiana, and Texas.
- Participated in Cape Coral's Burrowing Owl Festival and provided educational information on bottlenose dolphin conservation and the Dolphin SMART program.
- Participated in Sanibel, FL's Ding Darling Days Festival and provided educational information on bottlenose dolphin conservation and the Dolphin SMART program.
- Completed bottlenose dolphin conservation and outreach survey in Panama City, FL to help measure effectiveness of current outreach products and determine if new techniques are needed.
- Ensured effective/successful response to out-of-habitat or entangled animals in Alabama, Texas, Louisiana, and Florida.

Deepwater Horizon BP (DWH/BP) Oil Spill

- Ongoing coordination with Gulf Coast Incident Management Team (GCIMT) under Section 7 of the ESA for ongoing response activities such as Shoreline Clean-up Assessment Team (SCAT) Operations, Orphaned Anchor Retrieval protocols, submerged oil detection and retrieval actions, etc.
- Worked with staff at the GC IMT, state branches (MS, AL, FL), and FWS to resolve conflicts over Best Management Practices (BMPs).
- Worked to ensure that projects potentially affecting NMFS trust resources were being directed to PRD and HCD for our review.
- Review Shoreline Treatment Recommendations (STRs) developed by SCAT and provide signed checklists indicating the relevant BMPs that must be followed.
- Participate in conference calls, as well as review and comment on documents, related to the NFT (no further treatment) protocols the GC IMT is working on for various locations.
- Participate in conference calls, provide input, and submit BMPs and other measures on GC IMT delineation and removal of SOMs (submerged oil mats) in MS, AL, and FL. Worked with the GC IMT to provide inwater BMPs (developed last summer) and additional recommendations that include general harm avoidance measures, vessel strike avoidance measures, protocol for the use of sonar, and protected species take response protocols, which we developed with the help of the Marine Mammal branch.
- Reviewed briefing/options papers (on artificial reefs, oyster restoration, and aquaculture) developed by the NOAA Restoration Center for potential National Resource Damage Assessment (NRDA) early restoration types and provided guidance on section 7 issues.
- Conducted one bottlenose dolphin visual health assessment in Perdido Bay, Alabama.
- Participated in the after action review for the Wildlife Branch of the Unified Command for marine mammal and sea turtle response during the DWH spill.
- Participate in weekly/bi-weekly NRDA Marine Mammal Technical Working Group calls.
- Facilitate Marine Mammal Working group to identify NRDA related needs.
- Drafted and acted as principal investigator

(PI) for two comprehensive NRDA proposals for post-release monitoring of rehabilitated dolphins within the oil spill impact area, and for active surveillance for stranded marine mammals in Louisiana and Mississippi.
- Worked with Marine Mammal Commission on Draft Strategic Science plan for marine mammals in the Gulf of Mexico – as part of the DWH/BP oil spill.
- Participated in multiple coordination calls regarding five incidental takes of dolphins in two separate NRDA sampling projects.
- Reviewed approximately 27 NRDA sampling plans and provided preventative conservation measures to avoid protected species interactions during sampling activities.
- Compiled and submitted an early restoration proposal to reduce bycatch and direct threats to bottlenose dolphins in the Gulf of Mexico.
- Participated and provided marine mammal expertise to the NRDA Public Scoping meeting for Early Restoration Projects.

Habitat Conservation and Protection

Habitat Conservation Division (HCD) personnel in SERO and four field offices strategically located throughout the Gulf of Mexico interact with federal, state, and local officials, private sector, and interested citizens to fulfill federal mandates to conserve, protect, and restore habitats supporting managed fish stocks, protected resources, and healthy ecosystem functions. To accomplish these objectives, HCD applies its authorities to manage and influence the outcome of actions that may adversely affect essential fish habitat (EFH) and other fishery resources and, ultimately, the production of important commercial and recreational fisheries. Activities focused on a suite of actions intended to promote an ecosystem-based approach to management, including:

- Fish and Wildlife Coordination Act and EFH consultations for project and permit reviews involving federal programs;
- Pre and post-application planning and monitoring;
- Federal projects affecting habitat;
- Federal Energy Regulatory Commission consultations;
- National Environmental Policy Act (NEPA) consultations;
- Partnerships and coordination (e.g., fishery management councils and marine fisheries commissions); and
- Science-management coordination and outreach.

The HCD is a member of the state Habitat Advisory Panels established by the Gulf of Mexico Fishery Management Council (GMFMC) and coordinated by the Commission.

HCD staff engage on interdisciplinary planning teams with staff from the Regional Office, GMFMC, and the Southeast Fishery Science Center. These teams, charged with developing fishery management plan amendments and associated NEPA documents, completed the Generic Annual Catch Limits/Accountability Measures Amendment for the Red Drum, Reef Fish, Shrimp, Coral and Coral Reefs Fishery Management Plans in 2011. This amendment also modified fishery management units and associated EFH identifications and descriptions. HCD staff worked with Commission and GMFMC staff in preparing the Final Report Gulf of Mexico Fishery Management Council 5-Year Review of the Final Generic Amendment Number 3 Addressing Essential Fish Habitat Requirements, Habitat Areas of Particular Concern, and Adverse Effects of Fishing in the Fishery Management Plans of the Gulf of Mexico satisfying the five-year review requirement of the Magnuson-Stevens Conservation and Management Act and EFH regulations.

The HCD continued to be intensively involved in activities promoting conservation, restoration, enhancement, creation, and preservation of coastal wetlands, riverine habitats, and nearshore areas utilized by important commercial and recreational fish species. The HCD increased involvement in regional partnerships to leverage resources and capabilities to conserve habitat and promote stewardship. These partnerships include the Southeast Aquatic Resources Partnership (SARP), the Gulf of Mexico Alliance (GOMA),

the Northern Gulf Institute, and the NOAA Gulf of Mexico Regional Collaboration Team. HCD's work with GOMA included:

- Serving as the Federal co-lead to the Habitat Conservation and Restoration Priority Issues Team to ensure all workplan elements and deliverables to the NOAA contract with the Gulf of Mexico Foundation were completed on schedule.
- Working on the GOMA's Regional Sediment Management workgroup.
- Participating in numerous GOMA sponsored meetings and conference calls, as well as the GOMA all hands meeting.
- Participating in the SARP Steering Committee, Science and Data Committee, and the Communications and Outreach Committee as well as numerous SARP-sponsored meetings.

The HCD continued involvement in many BP/ Deepwater Horizon Oil Spill related support activities, including:

- Serving on Shoreline Cleanup Assessment Technology (SCAT) teams.
- Reviewing approximately 80 emergency consultations for shoreline treatment recommendations.
- Developing numerous briefing materials and participating in frequent conference calls.
- Providing project summary documents to the Natural Resources Damage Assessment Team assisting the development of the priority restoration project lists for each Gulf state.

The HCD reviewed and provided comment to the Bureau of Ocean Energy and Management (BOEM) on Supplemental NEPA documents for remaining lease sales in the 2007-2012 Lease Plan for the Western and Central Planning Areas of the Gulf of Mexico. The HCD continued coordination with BOEM Gulf of Mexico Region staff reviewing and updating the Programmatic EFH Consultation for oil and gas development activities in the Gulf of Mexico.

HCD was heavily involved in all aspects of planning for the Gulf Coast Ecosystem Restoration Task Force. HCD staff served on numerous subteams including Sediment Management, Sustainable Storm Buffers, and Coastal Wetland and Barrier Shoreline Habitats. HCD staff were involved in frequent meetings, webinars and conference calls and developing numerous briefing documents in support of these activities. HCD authored draft reports for the Sediment subteam on:

- Increased Use of Interagency Coordination Teams for U.S. Army Corps of Engineers (COE) Federal Projects.
- Interagency Roundtable Meetings to Identify Beneficial Uses of Dredged Material Opportunities.
- The Harbor Maintenance Trust Fund issues;
- Coastal Impact Improvement Program and Gulf of Mexico Energy Security Act Funding issues.
- The Need for Programmatic Review of the COE's Operations and Maintenance Program.
- The Jones Act and the COE's Industry Capabilities Program.
- The COE's Continuing Authorities Program.

The HCD provided consultation services through field inspections, meetings, public hearings, informal discussions, and document review. HCD provided habitat information and EFH reviews in support of fishery management plans, amendments, and other regulatory actions. The HCD also provided recommendations to sequentially avoid, minimize, and offset adverse impacts to EFH and other fishery habitats. Federal fiscal year 2011 accomplishments in the Gulf of Mexico region include:

- Reviewed over 1,462 individual proposals to construct in coastal waters or wetlands.
- Provided pre-consultative technical assistance on 90 projects.
- Provided detailed conservation recommendations on over 161 EFH

consultations initiated by federal action agencies.
- Completed reviews on 36 NEPA actions.
- Participated in other activities associated with mitigation planning and habitat restoration, including providing technical assistance and consultation on the proposed Port Dolphin closed loop liquefied natural gas (LNG) facilities by serving on a technical advisory committee established to develop and implement plans to monitor and mitigate for unavoidable adverse impacts caused by multiple LNG facilities in offshore and onshore locations.

HCD staff have successfully planned many large-scale habitat restoration projects including projects being funded under: (1) Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA); (2) Mississippi Coastal Improvement Program; (3) Southwest Coastal Louisiana Feasibility Study; (4) Louisiana Coastal Area Ecosystem Restoration Study; (5) Greater New Orleans Hurricane Storm Surge and Risk Reduction Project; and (6) the Mississippi River-Gulf Outlet Ecosystem Restoration Study. HCD continues assisting the Corps of Engineers with hurricane recovery and protection efforts by providing technical assistance and expedited reviews of proposed levee and flood control activities, and engaging in long-term restoration planning. HCD engaged in the following activities related to CWPPRA:

- Continued engineering and design activities for the Chenier Ronquille barrier island restoration project, which would create more than 120 acres of dune habitat and more than 250 acres of saline marsh habitat.
- Continued engineering and design activities on the Grand Liard Marsh and Ridge restoration project, which would create more than 300 acres of saline marsh, nourish 140 acres of existing marsh, and create 34 acres of maritime ridge habitat.
- Awarding of a $43M construction contract for the NOAA-led Pelican Island restoration project which is anticipated to restore and create 227 acres of dune and Gulf shoreline and over 350 acres of intertidal saline marsh.
- Sponsorship of four Priority Project List 21 candidate projects under consideration for engineering and design funding.

HCD staff continued to partner with the Galveston Bay Foundation and the National Fish and Wildlife Foundation to implement small landowner living shoreline projects in Galveston Bay and initiated a habitat mapping and prioritization project with the Mobile Bay National Estuary Program and Coastal Services Center. Other major HCD activities included:

- Providing technical support and local expertise to the NOAA Scientific Support Coordinator and the Regional Response Teams during several hazardous material incidents and exercises.
- Working closely with the Florida Department of Transportation throughout the bridge and highway project planning process to minimize project delays and ensure early consideration of measures to conserve NOAA trust resources.
- Participating in ecosystem planning activities through active participation in regional partnerships, including the Mississippi Coastal Improvements Program, Louisiana Coastal Protection and Restoration Program, Louisiana Coastal Area Feasibility Study, Florida's Subcommittee on Managed Marshes, National Estuary Programs in Texas, Louisiana, Mississippi, and Florida, and a variety of similar planning activities.

HCD staff also aggressively engaged in habitat conservation outreach by:

- Conducting poster sessions and making formal and informal presentations at scientific and management meetings.
- Addressing students of all ages in classrooms throughout the region.
- Delivering lectures at constituent meetings and maintaining continuous contact with concerned individuals and organizations.

- Producing reports and brochures for intra- and interagency coordination.
- Responding to requests for information from private citizens, news media, and local, state, and federal agencies.

Cooperative Agreement and Grant Programs

In Fiscal Year 2011, 92 grants and cooperative agreements totaling $29,237,741 were awarded to states, universities, non-profit/profit institutions, and individuals as follows:

- Regional fishery management councils (3): $9,071,213 to conduct fishery management activities in accordance with the Magnuson-Stevens Fishery Conservation and Management Act.
- Southeast Area Monitoring and Assessment Program: $4,218,131funds 13 awards.
- State-Federal Cooperative Fisheries Statistics Program: 10 awards that equal $1,168,661.
- Interjurisdictional Fisheries Program: 11 grants for a total of $703,914.
- Atlantic Coastal Fisheries Cooperative Management Act Program: four awards totaling $728,218.
- Atlantic Coastal Cooperative Statistics Program: six grants for a total of $411,474.
- Marine Fisheries Initiative Program: seven new awards totaling $857,673 and 14 previous multi-year awards totaling $1,201,025.
- Cooperative Research Program: seven new grants totaling $1,326,422.
- Unallied Science Program: eight awards totaling $1,282,059.
- Gulf States Marine Fisheries Commission: $6,237,911 to coordinate activities of the Fisheries Information Network.
- South Carolina Department of Natural Resources: $1,177,060 for work on the Marine Resources Monitoring, Assessment and Prediction program.
- The Bay –Watershed Education and Training program: two previous multi-year awards for a total of $144,461.
- Blue Fin Tuna Research Program: Four new awards totaling $509,519.
- NOAA Recruiting, Training, and Research Program: one award for $200,000.

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

Dr. Steve Bortone, Executive Director

The Gulf of Mexico Fishery Management Council is one of eight regional fishery management councils established by the Fishery Conservation and Management Act of 1976 (now called the Magnuson-Stevens Act). The Council prepares fishery management plans designed to manage fishery resources from where state waters end, out to the 200-mile limit of the Gulf of Mexico. These waters are referred to as the Exclusive Economic Zone, or EEZ.

The Council consists of 17 voting members: the Southeast Regional Administrator of NMFS (or his designee), the directors of the five Gulf state marine resource management agencies (or their designees), and 11 members who are nominated by the state governors and appointed by the Secretary of Commerce. Appointments are three-year terms with a maximum of three consecutive terms. In addition, there are four nonvoting members representing the U.S. Coast Guard, U.S. Fish and Wildlife Service, Department of State, and the Gulf States Marine Fisheries Commission.

The Council meets every two-three months at various locations around the Gulf coast. Prior to taking final action on any proposed rule change, scoping meetings and public hearings are held throughout the Gulf. Public testimony is also heard during the meeting at which final action is scheduled. Proposed rule changes are then submitted to NMFS for further review and approval before implementation.

When reviewing potential rule changes, the Council draws upon the services of knowledgeable people from other state and federal agencies, universities, and the public, who serve on panels and committees.

Panels and committees include Advisory Panels, Scientific and Statistical Committees, Stock Assessment Panels and a Socioeconomic Science Committee.

Advisory Panels (APs)
Panel members include recreational and commercial fishermen, charter boat operators, environmentalists, distributors, seafood dealers, and consumers who are knowledgeable about a particular fishery.

Scientific and Statistical Committees (SSCs)
Committee members include economists, biologists, sociologists, and natural resource attorneys who are knowledgeable about the technical aspects of fisheries in the Gulf and advise the Council on annual catch limits, acceptable biological catch, and other stock conditions.

Stock Assessment Panels (SAPs)
Panel members include biologists who are trained in the specialized field of population dynamics, and who participate in the stock assessment process.

Socioeconomic Committee (SEC)
Committee members include sociologists, anthropologists, and economists who advise the Council of social and economic impacts or conditions.

A review of AP and SSC membership is conducted every two years to fill vacancies on panels and committees. The Council made appointments to these panels and committees in 2011.

FMPs
In 2011, the Gulf Council addressed a variety of issues through the development and implementation of various management plans and amendments.

Shrimp
After hearing an update on the conditions of the Texas shrimp stocks, an economic analysis, and public comment, the Council again recommended maintaining the Texas shrimp closure for 2011. The closure helps protect juvenile shrimp migrating from the bays to the Gulf of Mexico, allowing the shrimp to grow to a larger, more valuable size.

Reef Fish

The Council continued working on Reef Fish Amendment 32 to address gag and red grouper. Public hearings were held around the Gulf of Mexico in May, and additional public hearings were held in early August. The Council took final action during its August meeting.

The Council held scoping meetings for an amendment that considers increasing the crew size limit for dual permitted vessels when fishing commercially, as well as the suspension or elimination of the income requirement for permit renewal. The Council is moving forward with that amendment and final action is expected in early 2012.

A newly created Ad Hoc Red Snapper IFQ Review Advisory Panel was formed, and the first meeting was held in July. The Council received a report from that meeting and, as a result, initiated Reef Fish Amendment 36, which looks at restricting the transfer of red snapper IFQ, and Reef Fish Amendment 37, which will review the Red Snapper IFQ program.

The IFQ program was implemented January 1, 2007 through Amendment 26 to the Reef Fish Fishery Management Plan. The Magnuson-Stevens Fishery Management Act requires the Council to include provisions for the regular monitoring and review of the operations of the program, including determining the progress in meeting the goals of the program and the Magnuson Act, and any necessary modifications of the program to meet those goals, with a formal detailed review five years after program implementation. Consistent with the Magnuson Act, the Council requires a five-year review of the program.

Also related to red snapper, the Council requested a rerun of the red snapper projections. As a result, the Council's Scientific and Statistical Committee determined that the 2011 total allowable catch could be increased by 345,000 pounds. The Council requested that NOAA Fisheries Service develop an emergency rule to suspend the September 30 recreational red snapper closure date and assign the 345,000 pounds to the recreational sector for the 2011 season. The Council also initiated the development of a regulatory amendment to address a red snapper fall season, and approved a draft rule to allow the transfer of red snapper IFQ quota shares and allocation to U.S. citizens and permanent resident aliens beginning January 1, 2012.

A regulatory amendment adjusting red snapper total allowable catch for 2011 was approved and submitted to the Secretary of Commerce for review. The proposed amendment would increase commercial and recreational quotas by slightly more than 100,000 pounds each. The Council also submitted an amendment to remove the September 30 recreational red snapper closure date from the fishery management plan to allow for a potential fall red snapper season if quota remains. This amendment would replace the emergency rule.

The Council developed and took final action on a framework action for greater amberjack in an effort to avoid in-season closures during peak economic fishing months. The action establishes a recreational closed season for amberjack from June 1 – July 31. The Council also continued working on Reef Fish Amendment 35 to adjust the annual catch limit for greater amberjack. The amendment also considers commercial trip limits and season changes, as well as recreational size limits and season changes.

Sustainable Fisheries/Ecosystem Management

The Council took final action on a Generic Amendment for Annual Catch Limits and Accountability Measures. New provisions in the Magnuson-Stevens Act require regional fishery management Councils to develop annual catch limits and accountability measures by 2010 for managed species subject to overfishing, and by 2011 for all other managed species, to ensure that overfishing does not occur.

Finally, the Council continued discussions on sector separation.

Coastal Migratory Pelagics

The Council approved Amendment 18 to the Coastal Migratory Pelagic Fishery Management Plan (FMP) to set the overfishing level, acceptable biological catch, annual catch limits, and annual

catch targets for Gulf Migratory Group king mackerel, Gulf Migratory Group Spanish mackerel & cobia (in the Gulf of Mexico).

Coastal Migratory Pelagics Amendments 19 and 20 are under development, and will address other issues, such as limiting the sale of fish caught under a bag limit, changes to permit requirements, modifying commercial zone boundaries, establishing a transit provision, and requiring vessel zone declarations.

Coral
Under a draft generic amendment to establish annual catch limits and accountability measures, the Council removed octocorals from the Coral Fishery Management Plan.

Red Drum
The Council continued its discussion about a red drum fishery in the Gulf EEZ.

Stone Crab
At the request of the Council, the State of Florida has taken over management of stone crab.

Spiny Lobster
The Council completed and took final action on amendment 10 to the Spiny Lobster fishery management plan to set annual catch limits and accountability measures now required by the reauthorized Magnuson-Stevens Act.

Joint Amendment 11 was initiated to address a Biological Opinion that concludes that spiny lobster trap fishing puts sea turtles, smalltooth sawfish, and staghorn and elkhorn corals at risk.

Aquaculture
The Council received an update on the proposed rule implementing the Aquaculture amendment.

Southeast Data, Assessment, and Review (SEDAR)
The SEDAR process is a three-step process for conducting stock assessments. It consists of a Data Workshop to compile available data, a Stock Assessment workshop to prepare the actual assessment, and an Assessment Review Workshop to provide an independent review of the assessment, conduct additional analyses if necessary, and make recommendations regarding the status of stock and acceptable biological catch levels.

SEDAR activities in 2011 included a review workshop for SEDAR 22 - Yellowedge Grouper and Tilefish, and update assessments for gray triggerfish and vermilion snapper. SEDAR 27 addressed Gulf Menhaden for the GSMFC and Yellowtail Snapper for Gulf Council.

Additionally, two SEDAR Steering Committee meetings took place in April and October.

Data Collection
The Data Collection Committee met to receive a summary report from the Vessel Monitoring System Advisory Panel. The Panel recommended, and the Council concurred, to combine the Ad Hoc Data collection Advisory Panel and the VMS Advisory Panel into a single, standing Advisory Panel. At a subsequent meeting, the Data Collection Committee formed an Ad Hoc Private Recreational Data Collection Advisory Panel to provide guidance to the Council on the collection of private recreational angler data. Mechanisms for implementing head boat electronic reporting were also discussed.

Outreach and Education
The Outreach and Education Advisory Panel met twice in 2011 to finalize a five-year strategic communications plan and discuss outreach methods and opportunities.

Law Enforcement Advisory Panel (LEAP)
The Law Enforcement Advisory Panel (LEAP) met jointly with the Gulf States Marine Fisheries Commission's Law Enforcement Committee (LEC) to consider the status of amendments and other regulatory actions.

The LEAP also met jointly with the LEC to review and approve the 2011-2012 Operations Plan, and to review joint enforcement agreements.

The LEAP met on its own to discuss enforcement compliance issues, future joint meetings with the Council, Joint Enforcement Agency Funding, Inter-jurisdictional Fisheries Program activities,

and Gulf States Marine Fisheries Commission enforcement publications.

Vessel Monitoring System Advisory Panel

The advisory panel met twice. Once to discuss operation, design, and usage of vessel monitoring systems, along with the resulting data from these systems; and to discuss the potential role of vessel monitoring systems in enhanced seafood traceability in the Gulf of Mexico fisheries.

The panel met again to discuss the current and future needs of vessel monitoring systems software, including methods to improve VMS products and services. Technical issues with vessel monitoring systems were considered, including a review of existing procedures to safeguard data from unauthorized use or distribution.

Other

In 2011, Council representatives attended three meetings of the International Commission for the Conservation of Atlantic Tunas (ICCAT) Advisory Committee.

Other meetings include:

- New Council Member Orientation
- Highly Migratory Species Advisory Panel
- International Commission for the Conservation of Atlantic Tunas Advisory Committee
- Council Coordination Committee
- Gulf States Marine Fisheries Commission
- Circle Hook Conference
- National Marine Spatial Planning
- American Fisheries Society
- SAFMC Meetings
- American Society of Ichthyologists and Herpetologists
- Gulf and Caribbean Fisheries Institute
- Annual Catch Limits for Coral Reef Fisheries
- Barotrauma Workshop
- Fisheries and Sustainability Forum
- State of the Gulf Summit

UNITED STATES FISH AND WILDLIFE SERVICE

Roger Schulz, Deputy Assistant. Regional Director for Fisheries in the Southeast

The Fisheries Program of the U.S. Fish and Wildlife Service (Service) has played a vital role in conserving and managing fish and other aquatic resources since 1871. Today, the Fisheries Program is a critical partner with States, Tribes, other Federal agencies, other Service programs, private organizations, public institutions, and interested citizens in a larger effort to conserve these important resources. Reversing the decline of fish and other aquatic species populations in coastal waters requires approved management plans and assessment information to identify, prioritize, and evaluate management actions. In dealing with trust species, the Fisheries Program conducts planning and assessment in cooperation with State, Tribal, and Federal agencies with jurisdiction over these fish stocks. Existing fisheries councils and commissions, such as the Gulf States Marine Fisheries Commissions, the Gulf Fishery Management Council, the Gulf of Mexico Alliance, the Lower Mississippi River Conservation Committee, and the Southeastern Aquatic Resource Partnership help define these priorities.

The Fisheries Program continues to expand its involvement with conservation partners along the Gulf to ensure that habitat and species-based management decisions occur in a science-based, biologically-driven, landscape-oriented, and adaptive conservation framework. Focal species of interjurisdictional fish and other aquatics that are found in coastal waters and rivers flowing into the Gulf would include: striped bass, paddlefish, Gulf sturgeon, pallid sturgeon, alligator gar, and a number of imperiled mussels. The Fisheries Program has a proven track record in working with its Federal and State partners to address fish and aquatic resource needs in the southeastern United States. This is evident by the formation of the Southeast Aquatic Resources Partnership (SARP) in 2001 that pulled together 14 State fish and wildlife agencies, the Gulf and Atlantic States Marine Fisheries Commissions, the Gulf of Mexico and South Atlantic Fishery Management Councils, NOAA Fisheries and the Service.

Partnership Restoration Efforts

Southeast Aquatic Resource Partnership - The National Fish Habitat Action Plan that has been developed through the National Fish Habitat Initiative (NFHI) is a science-based, voluntary, and non-regulatory partnership that will function through the National Fish Habitat Board and a set of regional Fish Habitat Partnerships. For the Southeast Region, the Fisheries Program will deliver this action plan primarily through the Southeast Aquatic Resources Partnership (SARP). SARP developed the Southeast Aquatic Habitat Plan (Plan) which represents a blueprint for the cooperative conservation of Southeastern streams, rivers, lakes/reservoirs, estuaries, and coastal marine habitats to support aquatic resources for sustainable public use. This Plan is the centerpiece of the Fisheries Program's strategy for aquatic habitat conservation and management in the Southeast Region. The Plan guides a Region-wide effort to fulfill the goals set forth in the National Fish Habitat Action Plan. Eight primary objectives have been identified in the Southeast Aquatic Habitat Plan: 1) Establish, improve, and maintain riparian zones; 2) Improve or maintain water quality; 3) Improve or maintain watershed connectivity; 4) Improve or maintain appropriate hydrologic conditions for the support of biota in aquatic systems; 5) Establish, improve or maintain appropriate sediment flows; 6) Maintain and restore physical habitat in freshwater systems; 7) Restore or improve the ecological balance in habitats negatively affected by non-indigenous invasive or problem species; and 8) Conserve, restore, and create coastal estuarine and marine habitats.

Lower Mississippi River Conservation Committee - The Lower Mississippi River Conservation Committee (LMRCC) and SARP provide platforms for landscape conservation efforts to restore aquatic species impacted by climate

change. Fish and mussel populations impacted by climate change will be the focus of funding from the National Fish Habitat Initiative, National Fish Passage Program, and the Aquatic Invasive Species Program. These landscape conservation efforts, both on and off Federal land, should significantly improve the ability of aquatic species to adapt to changing climates and they are likely the key to their survival. The LMRCC and the SARP have the tools in place to fully implement a positive outcome for impacted fish and aquatic populations. Over 240 Lower Mississippi River habitat restoration projects have been identified as part of the multi-State, Service, and U.S. Army Corps of Engineers "Restoring America's Greatest River Plan." The Gulf of Mexico Alliance is a partnership formed between the five Gulf of Mexico states, with Federal agency support, focused on sharing science, expertise and financial resource to better protect the health of the Gulf of Mexico. The Southeast Region's Fisheries Program is the Service's representative on this Alliance.

Anadromous Fisheries Restoration

Striped Bass: Under the Gulf States Marine Fisheries Management Plan (FMP), the Service is working to restore populations of striped bass along the entire Gulf Coast. Anadromous populations of Gulf Coast striped bass historically occurred in most Gulf rivers, but habitat degradation and alteration have led to severe population declines. The goal of this FMP, working with many state partners, is to restore and maintain striped bass throughout the Gulf of Mexico region and to establish self-sustaining populations of striped bass in at least 10 coastal rivers. This species is recognized as being of tremendous economic, social, and recreational consequence.

Project Example:

An updated Draft of the "Apalachicola-Chattahoochee-Flint (ACF) Gulf Striped Bass 5-year Management Plan" is undergoing final edits by the technical committee before being elevated for approval by each appropriate agency signatory. The technical team consists of representatives from the Service, the states of Georgia, Florida, and Alabama. The new plan follows a structured decision making (SDM) framework with new action items which will hopefully lead us in a more scientific way towards determining if Gulf striped bass can be restored in the ACF. Several action items are currently underway, such as: 1) identify and focus on one restoration site per year; 2) monitoring striped bass and Alabama shad movement; 3) determining how much natural reproduction is occurring in the ACF system; 4) searching for natural spawning locations and determining flow needs for eggs; and 5) working to find a graduate student and funding to examine the relationship between forage (clupeids) and juvenile stripers. In addition, the group will meet with a population modeler at the end of summer 2012 in conjunction with the technical committee meeting to further refine the model using best available data. Because recurrent decisions are made on a yearly basis regarding genetic integrity, stocking strategies, and habitat restoration activities, the team recognizes the potential for adaptive management of this valuable trust resource. Efforts are underway to sonar habitat map the Apalachicola River. Detailed and comprehensive mapping of riverine systems can yield valuable information on the location and extent of critical habitat for imperiled species, and enable studies of species habitat associations. This work will benefit listed mussels and the Gulf sturgeon through development of a habitat template for the entire river system.

Gulf Sturgeon - Gulf of Mexico sturgeon is a threatened anadromous species of Gulf Coast river systems. Stocks have been greatly reduced throughout much of its range through over-fishing, dam construction, and habitat loss. The Service shares jurisdiction for the management and recovery of this species with the National Marine Fisheries Service. Service activities focus on addressing high priority action items identified in the Gulf Sturgeon Recovery/Management Plan; including threats to habitat, life history stages, marine movement and habitat use, and projects dealing with population assessments in major Gulf

Rivers using tagging and telemetry.

Project Example:

> Gulf sturgeon were collected and tagged in six Florida panhandle river systems by the Panama City Fish and Wildlife Conservation Office to gather distribution, habitat and movement data and to evaluate recovery. The Yellow River was sampled more intensively this past fall as part of a rotating annual census. The Panama City office also participated in the larger NRDA Gulf sturgeon work plan intended to evaluate the effect of the deepwater horizon oil spill on the species.

Deepwater Horizon Oil Natural Resource Damage Assessment

The Deepwater Horizon oil spill posed grave risks to a number of significant Service resources. Within the impacted area there are 38 federally-listed species protected under the Endangered Species Act, 29 are endangered. There are more than 400 avian species that migrate, winter, or remain resident through the Gulf coastal area. In addition, the Service manages 36 National Wildlife Refuges along the Gulf Coast from Texas to Florida's peninsula that cover nearly three million acres of freshwater, tidal, and terrestrial habitats along hundreds of miles of shoreline. These lands support extensive recreational use and cultural resources as well as fish and wildlife and their habitat. Through the end of the calendar year, some 275 miles of shoreline of Department of Interior lands were impacted to one degree or another by oil, especially at Bon Secour and Breton National Wildlife Refuges, and the Gulf Islands National Seashore.

The Baton Rouge Fish and Wildlife Conservation Office (BRFWCO) represented the Service on the Fish Technical Workgroup (TWG) that conducted Pre-assessment and Assessment phases of injury assessment to fish and aquatic organisms. The work group planned and managed over 18 Pre-Assessment and Assessment Phase work plans to quantify and characterize oiling in marsh edge, sandy shoreline, near shore substrate, and submerged aquatic vegetation habitats. The TWG also conducted organismal injury assessments on oysters, whale sharks, sargassum, and Gulf sturgeon. The plans are in various states of completion and none have developed final injury assessments.

The BRFWCO provided a Project Officer to the work plan to assess injury to Gulf sturgeon. The Mississippi Canyon 252 Pre-Assessment Plan for the Collection of Data to Determine Potential Exposure and Injuries of Threatened Gulf Sturgeon was completed in April of 2011 and the signed copy of the work plan is available at http://losco-dwh.com/viewworkplans.aspx. The plan was conducted by personnel from BRFWCO, the Panama City Field Office and FWCO, and other federal and university contractors and included the deployment of an array of 135 telemetry monitoring stations in the Gulf of Mexico that monitored the movement of over 140 adult Gulf sturgeons. Each fish had a five-year transmitter surgically implanted while they were residing in tributaries during the spill, prior to entering the gulf where they had been isolated from potential exposure to the spill. Blood was drawn from each fish and analyzed by USGS Wetland Science Center in Lafayette, Louisiana for potential evidence of exposure or injury. Initial laboratory analysis of Gulf sturgeon blood showed signs of DNA fragmentation that can be indicative of exposure to hydrocarbons and has been linked to tumor development, cancer, reproductive problems, developmental abnormalities, and suppression of immune systems. This type of genetic damage has also been associated with other environmental issues and is not yet positively linked to the Deep Water Horizon (Mississippi Canyon (MC252)) oil. However, Pre-Assessment findings warranted additional work in the Assessment phase of the NRDA.

The Assessment work plan repeated the same process of collecting blood and implanting telemetry transmitters in adult sturgeon in the fall of 2011 as they left the freshwater rivers to over-winter in the gulf. The total number of Gulf sturgeon tagged in both phases of the NRDA now totals over 300. The initial findings of genetic damage are being evaluated in greater detail with additional laboratory assays to expand the number of metrics used in assessing injury as determined by blood collected from wild fish. Exposure trials

are being conducted at the USGS Science Center in Columbia, Missouri to determine the actual physiological response of sturgeon to MC252 oil. Shovelnose sturgeon are being used as surrogates in exposure to various concentrations of oil, and blood from these sturgeon will undergo the same laboratory evaluation as blood of wild Gulf Sturgeon study animals that were potentially exposed environmentally during the spill period.

The Baton Rouge and Panama City FWCOs are leading a team of scientists to analyze the results of both work plans and the report will be complete and presented to the case managers in December 2012. Preliminary analysis of telemetry data in the Gulf of Mexico has greatly refined previous estimates of how Gulf sturgeons use marine habitats. New assessments of site fidelity and associations with specific river systems are being generated along with spatial assessments of marine habitat use and river-specific habitat dependencies. These data and analyses will be of great benefit to Gulf sturgeon recovery and will provide managers with new and important information from which to base recovery decisions.

Service Coastal Fisheries Restoration/ Assessments

Coastal Program - The Service's Coastal Program, under the direction of Ecological Services, is charged with a mission to protect and recover threatened and endangered species, migratory birds, marine mammals, interjurisdictional fish species, and other species of concern by supporting voluntary restoration, enhancement, management, and protection of high-priority coastal habitats. The Coastal Program works with willing partners to provide technical assistance and to provide and leverage financial support to accomplish habitat improvement projects that benefit Federal trust species and their habitats on both private and public lands. Within the Southeast Region, and specific to the Gulf of Mexico, the Coastal Program has a dedicated office and one or more staff at: Panama City, FL (Florida Panhandle Office); Tampa, FL (Tampa Bay Office); and Vero Beach, FL (South Florida Office).

Contaminants Program - The Contaminants Program works with partners to prevent contamination and maintain healthy ecosystems; identifies contamination that adversely affects the health of fish, wildlife, and their ecosystems; acts as Federal trustee for fish and wildlife injured by contamination; and negotiates settlements from polluters to restore lost resources and their benefits to local citizens.

National Wildlife Refuges - A total of 37 National Wildlife Refuges perpetually protect and manage thousands of acres of coastal wetlands in each of the five Gulf States. These Refuges provide critical nursery habitat for most of the commercially and recreationally important fish and shellfish species in Gulf fisheries. Additionally, most of these Refuges provide access to, and opportunity for, coastal recreational fishing.

Service Habitat Protection and Enhancement

Fish Habitat Program/ Fish Passage Program - The Service's Fish Passage and Fish Habitat Programs have implemented a number of projects to help reverse the decline of fish populations in Gulf coastal waters. These projects will continue to restore valuable wetland and stream habitats within the Gulf coastal geography. Through the National Fish Habitat Action Plan (NFHAP), the States will continue to lead the implementation of the Fish Habitat Action Plan, in cooperation with the Service and other key partners. Efforts are directed at implementing on-the-ground cost-share projects identified by Fish Habitat Partnerships. For the Southeast Region, the implementation of fish habitat projects will be primarily through the SARP. SARP has taken a comprehensive approach to watershed conservation, considering the aquatic flora and fauna within the integrated landscape. SARP, through its partners, conducted cumulative geospatial habitat assessments to help identify the highest priority basins in which to conduct habitat restoration activities. The goal of the Fish Passage Program is to reconnect fragmented fish habitats and thereby restore native fish and other aquatic species to self-sustaining levels.

Project Examples:

The Panama City FWCO has been working with private landowner, Nokuse Plantation, and the Florida Wildlife Commission on the restoration of

Magnolia Creek, a tributary to Lafayette Creek (Choctawhatchee Bay) in Northwest Florida. This restoration effort involves restoration and enhancement of riparian and instream habitat, and includes the removal of fish passage barriers, and installation of fish friendly road crossing structures. To date, three fish passage barriers have been removed, which reconnected about three miles of stream and restored 50 acres of wetlands. In 2012, another fish barrier was removed during the installation of a new bridge access for the Florida National Scenic Trail system, which opened, or re-connected seven additional miles of stream habitat.

The Panama City FWCO is working on an inventory of unpaved road stream crossings and threats assessment for the Chipola River watershed. The threats assessment was conducted via GIS stream data, land cover data, and aerial imagery. Threats to aquatic resources were identified and assessed and a threats model was validated for accuracy. The analyses identified 140 out of 1,810 stream miles as potential threats. This work will enable prioritization of future restoration efforts in the watershed.

Aquatic Invasive Species Program - Invasive species have become a part of the landscape and are expanding in the Southeast. While many are found in Florida, every Southeastern State has at least one exotic species, including aquatic and terrestrial plants and animals. Recognizing the importance of this issue, the Southeast Region has taken a leadership role in raising public awareness of the importance of this issue and implementing appropriate management and control measures, where and when appropriate. Over 150 exotic fish species occur in the Southeast Region. Invasive species, such as zebra mussels, Asian carp, Asiatic clams, Asian swamp eels, purple loosestrife, Eurasian water milfoil, water hyacinths, giant salvinia, apple snails, and hydrilla, to name a few, have been introduced into water bodies in many southern rivers, ponds, and wetlands. As temperatures increase (climate change), more habitat may be available to support these species, and enlarge the area of the Southeast vulnerable to establishment of populations of tropical aquatic invasive species currently restricted to south Florida, which may negatively impact native species. The role of the Southeast Region's Aquatic Invasive Species (AIS) Program is 1) provide leadership in National Invasive Species Act (NISA) implementation, 2) prevent invasive species introductions, 3) protect from and monitor invasive species populations, 4) control/eradicate invasive species, and 5) provide education and outreach to the public and our partners. The Fisheries Program within the Southeast Region currently devotes a portion of one FTE to this effort. Field support to the AIS Program is also provided by various Fisheries field stations.

The Fisheries Program has been an active participant in the Aquatic Nuisance Species Task Force, Gulf and South Atlantic Regional Panel, and the Mississippi River Basin Panel. The mission of the Aquatic Nuisance Species Task Force is to 1) prevent the introduction and dispersal of aquatic nuisance species; 2) monitor, control, and study such species; 3) conduct research on methods to monitor, manage, control and/or eradicate such species; 4) coordinate aquatic invasive species programs and activities of members and affected State agencies; and 5) educate and inform the general public and program stakeholders about the prevention and management/control of these species. The Regional Panels coordinate at the regional and State level on AIS issues.

Federal Assistance to State Resource Agencies

The Service's Wildlife and Sport Fish Restoration Program continued to administer grant funding to the Gulf of Mexico States to conserve, protect, and enhance fish, wildlife, their habitats, and the hunting, sport fishing, and recreational boating opportunities they provide. Funding was made available to the Gulf States through the following grant programs: Sport Fish Restoration Program, State and Tribal Wildlife Grant Program, National Coastal Wetlands Conservation Grant Program, Clean Vessel Act Grant Program, Boating Infrastructure Grant Program, and the Endangered Species program.

Sport Fish Restoration Program - The Sport Fish Restoration Program (SFR) assists State fish and

wildlife agencies with marine and freshwater sport fish management, boating access, aquatic education, and sport fish restoration outreach projects. States utilize SFR funds to conduct surveys on sport fish and their associated habitats and research to determine answers to key questions such as genetic relationships among selected fish populations, life history, angler participation, and other data that provide baseline information to help states manage sport fish and their aquatic habitats. SFR education grants provide funding for States to encourage individuals to conserve aquatic environments and to teach individuals how to enjoy the resources through activities such as fishing or boating. SFR funds are also used to provide public access to aquatic resources through the construction of boating ramps and fishing piers.

State and Tribal Wildlife Grant Program - The State and Tribal Wildlife Grant Program (SWG/TWG) provides funding to States and Tribes for the development and implementation of programs that benefit wildlife and their habitats, including species that are not hunted or fished. Some Gulf Coast States are engaged in sturgeon research and management including tracking, critical habitat identification, and population evaluation. For example, Louisiana will determine fish assemblages and landscape influences in the Pontchartrain Basin in order to update monitoring databases for the SARP and Louisiana Heritage Program. Under the Tribal Wildlife Grant Program, funds have been awarded to several Tribes in the Southeast Region including the Seminole Tribe of Florida, the Miccosukee Tribe of Indians of Florida, and the Poarch Band of Creek Indians. Funds are used to help Tribes better manage their lands for wildlife conservation. Tribes have also used funds to conduct habitat restoration and biological assessments as well as create wildlife management plans with grant funds.

National Coastal Wetlands Conservation Grant Program - The National Coastal Wetlands Conservation Grant Program provides funds to Coastal States to carry out coastal wetlands conservation projects for restoring habitats and acquiring coastal wetland tracts. Funds are used for land acquisition and restoration plans in coastal wetlands habitat and maritime forests to protect fish and wildlife and their habitats. In FY 2011, two grant awards were made available for Gulf Coast projects. Alabama received a grant to purchase wetlands in Heron Bay and Portersville Bay, and Florida received a grant to purchase wetlands near the mouth of the Steinhatchee River.

Clean Vessel Act Grant Program - The Clean Vessel Act Grant Program (CVA) provides funding for States to build pump-out and dump stations for disposing vessel sewage from recreational boats. The program further encourages marina owners to implement clean marina programs and activities that protect water quality. The program also provides funding for States to conduct outreach to boaters, marinas, and the general public about the importance of keeping sewage out of our waters. Currently, there are several CVA projects in the implementation phases. FY 2012 awards have not been released at this time. The following coastal States submitted proposals for funding in FY 2012: Alabama, Florida, and Georgia. In FY 2011, Alabama, Florida, Mississippi, and Louisiana received awards.

Boating Infrastructure Grant Program - The Boating Infrastructure Grant Program (BIG) provides grant funds to the States, the District of Columbia and Insular Areas to construct, renovate, and maintain tie-up facilities with features for transient boaters in vessels 26 feet or more in length, and to produce and distribute information and educational materials about the program. Several BIG projects are active in the Gulf States. In FY 2011, Alabama, Florida, Louisiana, and Mississippi received awards.

Endangered Species Grant Program - The Endangered Species Grant Program provides grants to States to participate in a wide array of voluntary conservation projects for candidate, proposed, and listed species. States can use grant funds to acquire lands and develop habitat conservation plans for species in need.

Financial Statements

Gulf States Marine Fisheries Commission
Ocean Springs, Mississippi

December 31, 2011

Gulf States Marine Fisheries Commission
Ocean Springs, Mississippi

Financial Statements

December 31, 2011

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PILTZ, WILLIAMS, LAROSA & COMPANY

CERTIFIED PUBLIC ACCOUNTANTS
A Professional Association

MEMBERS
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Independent Auditors' Report

Board of Commissioners
Gulf States Marine Fisheries Commission
Ocean Springs, Mississippi

We have audited the accompanying financial statements of the governmental activities, each major fund, and the aggregate remaining fund information of Gulf States Marine Fisheries Commission as of and for the year ended December 31, 2011, which collectively comprise Gulf States Marine Fisheries Commission's basic financial statements as listed in the table of contents. These financial statements are the responsibility of Gulf States Marine Fisheries Commission's management. Our responsibility is to express opinions on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards,* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and the significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinions.

As described in Note A, Gulf States Marine Fisheries Commission prepares its financial statements on the modified cash basis of accounting, which is a comprehensive basis of accounting other than accounting principles generally accepted in the United States of America.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position-modified cash basis of the governmental activities, each major fund, and the aggregate remaining fund information of the Gulf States Marine Fisheries Commission, as of December 31, 2011, and the respective changes in financial position-modified cash basis, thereof for the year then ended in conformity with the basis of accounting described in Note A.

In accordance with *Government Auditing Standards*, we have also issued our report dated July 27, 2012 on our consideration of Gulf States Marine Fisheries Commission's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Governmental Auditing Standards* and should be considered in assessing the results of our audit.

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and budgetary comparison information and corresponding notes on pages 3 through 8 and 21 and 22 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standard Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise Gulf States Marine Fisheries Commission's basic financial statements as a whole. The accompanying schedule of expenditures of federal awards which is presented for purposes of additional analysis as required by U.S. Office of Management and Budget Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*, and is also not a required part of the financial statements. The schedule of expenditures of federal awards is the responsibility of management and was derived from and relate directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated, in all material respects in relation to the financial statements as a whole.

Piltz, Williams, LaRose + Co.

Certified Public Accountants

Biloxi, Mississippi
July 27, 2012

Section I

Management's Discussion and Analysis

Management's Discussion and Analysis

This discussion and analysis of the Gulf States Marine Fisheries Commission's (the Commission) financial performance provides an overview of the Commission's financial activities for the year ended December 31, 2011. Please read it in conjunction with the Commission's basic financial statements and notes to the financial statements, which are found in Section I.

Using This Annual Report

This discussion and analysis is an introduction to the Commission's basic financial statements, which comprise three components: 1) the commission-wide financial statements, 2) governmental fund financial statements, and 3) notes to the financial statements. This report also contains other supplementary information in addition to the basic financial statements.

Commission-Wide Financial Statements (Reporting the Commission as a Whole)

The commission-wide financial statements are designed to be similar to private-sector businesses in that all commission activities are consolidated. These statements combine fund financial resources with capital assets and long-term obligations. The notes to financial statements provide detailed support to individual balances and classes of transactions found in the various statements. The required and other supplemental information (see Section III) provides information about the Commission's operating activities as compared to its budget, as well as certain other schedules required by *Government Auditing Standards*.

The Statement of Net Assets-Modified Cash Basis reports on all of the Commission's assets and liabilities, with the difference between the two reported as net assets. You can think of the Commission's net assets as one way to measure the Commission's financial health, or financial position. Net Assets are divided into the following two basic categories: Net assets invested in capital assets, net of related debt and net assets unrestricted and available for spending. Over time, increases or decreases in the Commission's net assets are one indicator of whether its financial health is improving or deteriorating. The Statement of Activities-Modified Cash Basis measures the annual change in the net assets displayed on the Statement of Net Assets-Modified Cash Basis. Assets and liabilities are measured using current values. One notable exception is capital assets, which are stated at historical cost less an allowance for depreciation

Net assets – net assets may serve over time as a useful indicator of government's financial position. In the case of the Commission, assets exceeded liabilities by $772,043 as of December 31, 2011. As of December 31, 2010, assets exceeded liabilities by $569,652.

Of the Commission's net assets, $244,121 (32%) reflects its investment in capital assets (e.g. land, buildings, mobile equipment, furniture and equipment, and leased property under capital leases, less any related debt used to acquire those assets that is still outstanding). The Commission uses these capital assets to conduct its programs; consequently these assets are not available for future spending.

The following table presents a summary of the Commission's net assets for the year ended December 31, 2011 and 2010.

	December 31, 2011	2010
Current assets	$ 432,907	$ 307,930
Noncurrent assets		
Post Employment Health Plan investment account	97,261	97,625
Property and equipment, net of accumulated depreciation	244,121	179,040
Total noncurrent assets	341,382	276,665
Total assets	774,289	584,595
Current liabilities	2,246	14,943
Net assets		
Investment in capital assets, net of related debt	244,121	179,040
Unrestricted	527,922	390,612
Total net assets	$ 772,043	$ 569,652

Changes in net assets – The Commission's total revenues for the year ended December 31, 2011 were $30,529,503. The total cost of all programs and services was $30,327,112. The Commission's total revenues for the prior year ending December 31, 2010 were $43,036,144; and the total cost of all programs and services were $44,513,186. The following table represents a summary of the changes in net assets for the year ended December 31, 2011; and the prior year, in comparison, for the year ending December 31, 2010:

Financial Statements

December 31, 2011

	December 31, 2011	December 31, 2010
Revenues		
General revenues		
Member state appropriation	$ 157,500	$ 90,000
Council activities	35,000	35,000
Other income	890	500
Interest income	874	918
Dividend income	2,001	-
Rent income	5,040	7,200
Post employment health plan revenue	-	17,648
Registration fees	13,990	15,370
Gain (loss) on sale of assets	-	550
Unrealized gain (loss) on investments	(2,390)	8,089
Program revenues		
Collection & dissemination of recreational and commercial fisheries information network	6,224,946	6,091,176
Interjurisdictional fisheries management	238,909	253,756
Coordination of recreational fisheries programs	207,900	190,162
Collection & dissemination of fishery-independent data and information	220,086	336,911
SEAMAP Supplemental	17,017	42,768
Review and formation of habitat information	60,904	51,358
Study of aquatic nuisances	84,352	57,914
Fish and wildlife support services	48,731	70,824
Emergency disaster recovery program I	11,635,137	27,090,832
Emergency disaster recovery program II	5,131,760	8,312,325
Aquaculture planning in the Gulf of Mexico	-	24,628
Economic data program	383,150	306,040
Oil disaster recovery program	2,052,686	28,890
Stock Assessment Enhancement	4,011,020	3,285
Total revenues	30,529,503	43,036,144
Expenses		
Programs	30,189,170	44,319,233
General and administrative	137,942	193,953
Total expenses	30,327,112	44,513,186
Change in net assets	202,391	(1,477,042)
Net assets, beginning	569,652	2,046,694
Net assets, ending	$ 772,043	$ 569,652

Fund Financial Statements (reporting the Commission's major funds)

The fund financial statements provide information about the major individual funds. A fund is a fiscal and accounting entity with a self-balancing set of accounts that the Commission uses to keep track of specific sources of funding and spending for a particular purpose.

The Commission's basic services are reported in the funds, which focus on how money flows into and out of those funds and the balances left at year-end that are available for future spending. The fund financial statements provide a short-term view of the Commission's general operations and the basic services it provides. Fund information helps determine whether there are more or fewer financial resources that can be spent in the near future to finance the Commission's programs. These funds are reported using the cash basis, which measures cash and all other financial assets that can readily be converted to cash. The Commission's funds include the General and Special Revenue funds.

Notes to the Financial Statements

The notes provide additional information that is essential to a full understanding of the data provided in the Commission-wide and fund financial statement. The notes to the financial statements are a required part of the basic financial statements.

Budgetary Highlights

The Commission establishes its budget to reflect financial conditions such as increases and decreases in operating revenues and expenses, and also to increases, decreases and availability of federal funding for operating and capital needs. As noted in the notes to the financial statements, it is the practice of the Commission to prepare its budget on the modified cash basis of accounting.

Capital Asset Administration

At the end of the current year ending December 31, 2011, the Commission had $244,121, net of accumulated depreciation invested in facilities, equipment and automobiles. This amount reflected a net increase (including additions, deletions and depreciation deductions) from the prior year of $65,081. As of December 31, 2010, the Commission had $179,040 invested in facilities, equipment and automobiles, net of accumulated depreciation.

Long-Term Debt

At the end of the current fiscal year, the Commission had no outstanding debt as all obligations were satisfied. The Commission has encountered no problems in obtaining financing as needed.

Significant Transactions

In September 2006, the Commission was selected by the National Marine Fisheries Service (NMFS) to administer a program that authorized $127.7 million for the Emergency Disaster Recovery Program (EDRP I). The program focused primarily on the assessment and restoration of the marine fishery resources that were damaged by the multiple disasters of 2005. Conditions for the use of the $127.7 million required that not less than $38 million be used for oyster rehabilitation; and that not less than $7 million be used for cooperative research. The remainder was to be used as deemed necessary by the respective states for habitat restoration of other appropriate resource recovery efforts, as approved by the funding agency. The funds were to be used for projects that were approved by the funding agency in the years 2006-2011. A no-cost extension was approved in April 2012 to extend the project until August 2012.

Further assistance for the Gulf States was provided by Congress in 2007, with a second appropriation in the amount of $85 million for additional Emergency Disaster Recovery Program (EDRP II). The Commission was selected by the National Marine Fisheries Service (NMFS) to administer this program. The objective of this program is to provide assistance to impacted fishermen and fishery related industry. The intent of this appropriation was not only to provide opportunities for relief to those businesses, industries and individual commercial fishermen who lost income as a result of the disasters of 2005, but also to add further impetus in the stabilization of the Gulf of Mexico fishing heritage and its resulting contributions to the Gulf economy. The funds were to be used for projects that were approved by the funding agency in the years 2006-2011. A no-cost extension was approved in April 2012 to extend the project until August 2012.

Again, in September of 2010, in the aftermath of the Deep Water Horizon oil disaster in the Gulf of Mexico, Congress appropriated an additional $15 million to aid in fisheries recovery. This program focuses primarily on “re-marketing” Gulf products in response to negative perceptions of the quality and availability of Gulf seafood brought on by the closure of Gulf waters for nearly five months. Specific actions currently being implemented include the establishment of a Gulf of Mexico Seafood Marketing Coalition to develop intermediate marketing strategies and long range plans aimed at regaining Gulf market shares and increasing product prices. It also involves third party certification of the sustainability and quality of Gulf products, the facilitation of a web based marketing program for use at the producer level, and expanded seafood testing opportunities to continually provide “Gulf Safe Seafood” assurances. The Oil Disaster Recovery Program (ODRP) will be funded by GSMFC via contracts with States, NGOs, State Health and Educational Institutions and where necessary professional service agencies through August 2015.

Also, during the year 2010, the Stock Assessment Enhancement Program (SAE) was created in response to the BP Deepwater Horizon disaster. Congress allocated $10M to conduct an expanded stock assessment of the fisheries of the Gulf of Mexico. Such expanded stock assessment shall include an assessment of the commercial and recreational catch and biological sampling, observer programs, data management and processing activities, the conduct of assessments, and follow-up evaluations of such fisheries. The funds ($6.15M) were appropriated to the Commission via a cooperative agreement in October 2010 and will be used to fund a variety of activities including state trip ticket operations, menhaden port sampling, implementation of for-hire logbook

program and expansion of fishery-independent sampling in the Gulf of Mexico. These activities will be conducted from 2011 to 2015.

Economic Expectations

The Commission receives the majority of its revenue from the administration of contracts and grants related to fisheries resource management. The Commission expects continued growth in these services. Most costs associated with administering these agreements have been reasonably stable (allowing for inflation). The Commission has been working diligently to moderate these costs where possible. The Commission's prudent use of resources continues to position it well in providing services to its customers and member states of Texas, Louisiana, Mississippi, Alabama, and Florida.

Requests for Information

This financial report is designed to provide a general overview of the Gulf States Marine Fisheries Commission's finances for all those with an interest in the Commission's finances. Questions concerning any of the information in this report or requests for additional information should be addressed to the Staff Accountant, Gulf States Marine Fisheries Commission, 2404 Government Street, Ocean Springs, Mississippi 39564.

Financial Statements

Gulf States Marine Fisheries Commission
Statement of Net Assets - Modified Cash Basis
December 31, 2011

Assets	Governmental Activities
Current assets	
Cash in bank	$ 432,907
Noncurrent assets	
Post employment health plan investment account	97,261
Property and equipment, net of accumulated depreciation	244,121
Total noncurrent assets	341,382
Total assets	774,289
Liabilities	
Current liabilities	
DHHS payable	125
Payroll taxes payable	290
Section 125 cafeteria plan payable	1,831
Total current liabilities	2,246
Net assets	
Investment in general fixed assets, net of related debt	244,121
Unrestricted	527,922
Total net assets	$ 772,043

See Notes to Financial Statements.

Gulf States Marine Fisheries Commission
Statement of Activities - Modified Cash Basis
For the Year Ended December 31, 2011

Functions/Programs	Expenses	Charges for Services	Operating Grants and Contributions	Net (Expense) Revenue and Change in Net Assets Governmental Activities
Primary government:				
Programs				
Collection & dissemination of commercial and recreational fisheries information	$ 6,210,413	$ -	$ 6,224,946	$ 14,533
lnterjurisdictional fisheries management	236,221	-	238,909	2,688
Coordination of recreational fisheries programs	193,375	-	207,900	14,525
Collection & dissemination of fishery - independent data and information	217,242	-	220,086	2,844
SEAMAP supplemental	17,210	-	17,017	(193)
Review and formation of habitat information	60,392	-	60,904	512
Study of aquatic nuisances	43,842	-	84,352	40,510
Fish and wildlife support services	71,969	-	48,731	(23,238)
Emergency disaster recovery program	11,630,997	-	11,635,137	4,140
Emergency disaster recovery program II	5,128,226	-	5,131,760	3,534
Economic data program	379,831	-	383,150	3,319
Oil disaster recovery program	1,990,735	-	2,052,686	61,951
Stock assessment enhancement	4,008,717	-	4,011,020	2,303
Total	30,189,170	-	30,316,598	127,428
General and Administrative				
Local administration	102,942	19,030	157,500	73,588
Council activities	35,000	-	35,000	-
Total	137,942	19,030	192,500	73,588
Total primary government	$ 30,327,112	$ 19,030	$ 30,509,098	201,016
General revenues				
Other income				890
Interest income				874
Dividend income				2,001
Unrealized gain (loss) on investments				(2,390)
Total general revenues				1,375
Change in net assets				202,391
Net assets, beginning				569,652
Net assets, ending				$ 772,043

See Notes to Financial Statements.

Gulf States Marine Fisheries Commission
Statement of Assets, Liabilities and Fund Balances-Cash Basis
Governmental Funds
December 31, 2011

	General Fund	Special Revenue Funds: RECFIN/ COMFIN Fund	Special Revenue Funds: EDRP Fund	Special Revenue Funds: EDRP II Fund	Special Revenue Funds: SAE Fund	Special Revenue Funds: Other Funds	Total Governmental Funds
Assets							
Current assets							
Cash in bank	$ 432,782	$ -	$ 55	$ 70	$ -	$ -	$ 432,907
Noncurrent assets							
PEHP investment account	97,261	-	-	-	-	-	97,261
Total assets	$ 530,043	$ -	$ 55	$ 70	$ -	$ -	$ 530,168
Liabilities							
Current liabilities							
DHHS payable	$ -	$ -	$ 55	$ 70	$ -	$ -	$ 125
Payroll taxes payable	290	-	-	-	-	-	290
Section 125 cafeteria plan	1,831	-	-	-	-	-	1,831
Total liabilities	2,121	-	55	70	-	-	2,246
Fund Balances							
Fund balance - assigned for post employment health plan	97,261	-	-	-	-	-	97,261
Fund balance - unassigned	430,661	-	-	-	-	-	430,661
Total fund balances	527,922	-	-	-	-	-	527,922
Total liabilities and fund balances	$ 530,043	$ -	$ 55	$ 70	$ -	$ -	$ 530,168

See Notes to Financial Statements.

Gulf States Marine Fisheries Commission
Reconciliation of the Governmental Funds Statement of Assets, Liabilities and Fund Balances - Cash Basis to the Statement of Net Assets - Modified Cash Basis
December 31, 2011

Total fund balances - governmental funds	$	527,922
Amounts reported for governmental activities in the statement of net assets - modified cash basis are different because:		
Capital assets used in governmental activities are not financial resources and therefore are not reported in the funds, net of accumulated depreciation		244,121
Total net assets - governmental activities	$	772,043

See Notes to Financial Statements.

Gulf States Marine Fisheries Commission
Statement of Revenues, Expenditures and Changes in Fund Balances - Cash Basis
Governmental Funds
For the Year Ended December 31, 2011

		Special Revenue Funds					
	General Fund	RECFIN/ COMFIN Fund	EDRP Fund	EDRP II Fund	SAE Fund	Other Funds	Total Governmental Funds
Revenues:							
Member state appropriation	$ 157,500	$ -	$ -	$ -	$ -	$ -	$ 157,500
Other income	890	-	-	-	-	-	890
Interest income	874	-	-	-	-	-	874
Dividend income	2,001	-	-	-	-	-	2,001
Rent income	5,040	-	-	-	-	-	5,040
Grant income	-	6,224,946	11,635,137	5,131,760	4,011,020	3,348,735	30,351,598
Registration fees	13,990	-	-	-	-	-	13,990
Unrealized gain (loss) on investments	(2,390)	-	-	-	-	-	(2,390)
Totals	177,905	6,224,946	11,635,137	5,131,760	4,011,020	3,348,735	30,529,503
Expenditures							
Personal services and benefits	47,167	455,649	76,395	26,116	87,281	870,512	1,563,120
Professional services	460	5,500,297	11,530,302	5,082,105	3,904,025	1,939,181	27,956,370
Other purchased services	24,391	207,298	18,177	15,293	12,484	355,790	633,433
Supplies and materials	1,596	47,169	6,124	4,712	4,927	80,333	144,861
Capital outlay	860	11,369	4,341	3,534	2,303	72,002	94,409
Totals	74,474	6,221,782	11,635,339	5,131,760	4,011,020	3,317,818	30,392,193
Excess (deficiency) of revenues over (under) expenditures	103,431	3,164	(202)	-	-	30,917	137,310
Other financing sources (uses)							
Interfund loans	33,879	(3,164)	202	-	-	(30,917)	-
Net change in fund balances	137,310	-	-	-	-	-	137,310
Fund balance - beginning	390,612	-	-	-	-	-	390,612
Fund balance - ending	$ 527,922	$ -	$ -	$ -	$ -	$ -	$ 527,922

See Notes to Financial Statements.

Gulf States Marine Fisheries Commission
Reconciliation of the Governmental Funds Statement of Revenues, Expenditures and Changes in Fund Balances - Cash Basis to the Statement of Activities - Modified Cash Basis
For the Year Ended December 31, 2011

Net changes in governmental fund balances	$ 137,310
Amounts reported in the statement of activities are different because:	
Governmental funds report capital outlays as expenditures. However, the statement of activities - modified cash basis reports depreciation to allocate those expenditures over the life of the assets. Capital assets purchased amounted to $94,409 and depreciation expense amounted to $29,153.	65,256
Proceeds from the sale of assets are reported in the governmental funds as revenues, but only the gain or loss on the sale of assets is reported in the statement of activities - modified cash basis.	(175)
Change in net assets of governmental activities	$ 202,391

See Notes to Financial Statements.

Note A – Summary of Significant Accounting Policies

Operations – The Gulf States Marine Fisheries Commission was formally created with the consent of the 81st Congress of the United States granted by Public Law 66 and approved May 19, 1949. Congress authorized an interstate compact relating to the better utilization of the fisheries of the Gulf of Mexico. Parties to the agreement are the states of Alabama, Florida, Louisiana, Mississippi and Texas. The Commission's office is centrally located in Ocean Springs, Mississippi.

The Commission receives and expends such sums of money as shall from time to time be appropriated for its use by the participating governing authorities, and makes application for and receives and expends funds available under appropriated Federal Programs. The Commission may also receive and expend funds from any other sources not "prohibited by law".

The financial reporting entity – Gulf States Marine Fisheries Commission is a quasi-governmental corporation governed by a 15 member board. The Commission has no reportable component units.

Basis of accounting – The accompanying financial statements have been prepared on the modified cash basis of accounting. That basis differs from generally accepted accounting principles because the Commission has not recognized balances, and the related effects on earnings, of grant receivables from third party agencies and of accounts payable to vendors.

The Commission reports the following major governmental funds:

General Fund – This is the Commission's primary operating fund. It accounts for all financial resources of the Commission, except those required to be accounted for in another fund.

RECFIN/COMFIN Fund – This is the fund that is the Commission's program to collect, manage, and disseminate statistical data and information on the commercial and recreational fisheries of the Gulf of Mexico.

Emergency Disaster Recovery Program (EDRP) Fund – This is a program fund through which Federal Fisheries Disaster funds appropriated by Congress are distributed to assist the Gulf States in the restoration of damaged marine resources and to provide assistance to impacted fishermen.

Emergency Disaster Recovery Program II (EDRP II) Fund – This is an additional program fund through which Federal Fisheries Disaster funds appropriated by Congress are distributed to assist the Gulf States in the restoration of damaged marine resources and to provide assistance specifically to impacted commercial fishermen; small business and industry; domestic product marketing; and, seafood testing.

Stock Assessment Enhancement (SAE) Fund – This program provides funding to conduct enhanced stock assessments of the fisheries of the Gulf of Mexico. Such enhanced stock assessments include an assessment of the commercial and recreational catch and biological sampling, observer program data management and processing activities, the conduct of assessments and follow-up evaluations of such fisheries.

All other governmental funds not meeting the criteria established for major funds are presented as other governmental funds.

Additionally, the Commission reports the following non-major governmental fund types:

Special Revenue Funds – Special revenue funds are used to account for the proceeds of specific revenue sources that are restricted for specific projects or programs. The funds' principal revenue sources are grants and contracts from various federal and member state agencies.

Basis of Presentation – The Commission's basic financial statement consists of government-wide statements, including a statement of net assets and a statement of activities, and fund financial statements, which provide a more detailed level of financial information.

Government-wide Financial Statements:

The Statement of Net Assets and Statement of Activities display information about the Commission as a whole. They include all funds of the reporting entity. Governmental activities generally are financed through taxes, intergovernmental revenues and other nonexchange revenues.

The Statement of Net Assets presents the financial condition of the governmental activities of the Commission at year-end. The Government-wide Statement of Activities presents a comparison between direct expenses and program revenues for each function or program of the Commission's governmental activities. Direct expenses are those that are specifically associated with a service, program or department and therefore clearly identifiable to a particular function. Program revenues include charges paid by the recipient of the goods or services offered by the program and grants and contributions that are restricted to meeting the operational or capital requirements of a particular program. Revenues, which are not classified as program revenues, are presented as general revenues of the Commission with certain limited exceptions. The comparison of direct expenses with program revenue identifies the extent to which each governmental function is self-financing or draws from the general revenues of the Commission.

Fund Financial Statements:

Fund financial statements of the Commission are organized into funds, each of which is considered to be separate accounting entities. Each fund is accounted for by providing a separate set of self-balancing accounts that constitute its assets, liabilities, fund equity, revenues and expenditures/expenses. Funds are organized into one major category: governmental. An emphasis is placed on major funds within the governmental category.

Fixed assets – Fixed assets are recorded at actual cost. Contributed assets are reported at the estimated fair value at the time received. The Commission has adopted a policy of capitalizing assets with an acquisition cost of $5,000 or more. Depreciation is computed on the straight-line method over the estimated useful lives of the underlying assets.

Investments – Investments in equity securities with readily determinable fair values and all investments in debt securities are measured at their fair market value in the Statement of Net Assets–

Modified Cash Basis. The unrealized gain or loss on investments is reflected in the Statement of Activities–Modified Cash Basis.

Income taxes – The Commission is exempt from income taxes as a governmental entity and is classified by the Internal Revenue Service as a governmental organization.

Long-term liabilities – Long-term liabilities are the unmatured principal of notes or other forms of noncurrent or long-term general obligation indebtedness. Long-term liabilities are not limited to liabilities from debt issuances, but may also include liabilities on lease-purchase agreements and other commitments. Long-term liabilities should not be reported as liabilities in governmental funds; but should be reported in the governmental activities column in the government-wide Statement of Net Assets.

Equity classifications

Government-wide Financial Statements:

Equity is classified as net assets and displayed in three components:

1. Invested in capital assets, net of related debt – Consists of capital assets including restricted capital assets, net of accumulated depreciation and reduced by the outstanding balances of any bonds, mortgages, notes or other borrowings that are attributable to the acquisition, construction or improvement of those assets.

2. Restricted net assets – Consists of net assets with constraints placed on the use either by (1) external groups such as creditors, grantors, contributors, or laws or regulations of other governments; or (2) law through constitutional provisions or enabling legislation.

3. Unrestricted net assets – All other net assets that do not meet the definition of “restricted” or “invested in capital assets, net of related debt”.

Fund Financial Statements:

Governmental fund equity is classified as fund balance. Fund balance is further classified as nonspendable, restricted, committed, assigned, or unassigned.

Estimates – The preparation of financial statements in conformity with the modified cash basis of accounting requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from these estimates.

Note B – Concentration of Credit Risk

The Commission has maintained bank accounts at one financial institution. The account balances at December 31, 2011 may be shown as follows:

Description	Carrying Amount	Bank Balance
Regular accounts	$ 432,907	$ 438,283

The bank balances at December 31, 2011 are categorized as follows:

Amount insured or collateralized with securities held by the Commission or its agent in the Commission's name	$ 250,000
Uncollateralized, or held by the pledging financial institution's trust department or agent in the financial institution's name	188,283
Total bank balance	$ 438,283

Note C – Investments

Investments:

Except for nonparticipating investment contracts and for participating interest-earning investment contracts and money market investments that had a remaining maturity at the time of purchase of one year or less, investments are reported at fair value which is based on quoted market price. Nonparticipating investment contracts such as repurchase agreements and nonnegotiable certificates of deposit are reported at cost. Participating interest-earning investment contracts and money market investments that had a remaining maturity at time of purchase of one year or less are reported at amortized cost.

Investments made by the Commission that are included on the statement of net assets are summarized below. The investments that are represented by specific identifiable investment securities are classified as to credit risk by the categories described below:

Category I – Insured or registered or for which the securities are held by the Commission or its agent in the Commission’s name.

Category 2 – Uninsured and unregistered for which the securities are held by the broker or dealer’s trust department or agent in the Commission’s name.

Category 3 – Uninsured and unregistered for which the securities are held by the broker or dealer, or by its trust department or agent but not in the Commission’s name.

Investment Type	Category 1	Category 2	Category 3	Reported Amount	Fair Value
Van Kampen Inter Corp Invt 45, 5 shares		X		$ 5,288	$ 5,288
Invesco VK Equity & Inc Fund A, 8,499.807 shares		X		70,718	70,718
Lord Abbett Short Dur Inc Fund C, 4618.585 shares		X		21,107	21,107
Cash		X		148	148
Totals				$ 97,261	$ 97,261

Note D – Property, Plant and Equipment

The Commission's land, depreciable property and equipment may be stated as follows:

	Balance 12/31/10	Additions	Deletions	Balance 12/31/11
Restricted				
Vehicles	$ 84,670	$ -	$ -	$ 84,670
Office equipment	672,264	94,409	175,974	590,699
Totals	756,934	94,409	175,974	675,369
Unrestricted				
Land	20,000			20,000
Buildings	182,817			182,817
Office equipment	28,975			28,975
Totals	231,792	-	-	231,792
Less accumulated depreciation				
Restricted	717,594	24,583	175,799	566,378
Unrestricted	92,092	4,570		96,662
Totals	809,686	29,153	175,799	663,040
Governmental activities				
Net property and equipment:				
Restricted	39,340	69,826	175	108,991
Unrestricted	139,700	(4,570)	-	135,130
Totals	$ 179,040	$ 65,256	$ 175	$ 244,121

Note E – Retirement Plan

The Commission has a tax sheltered annuity plan for all employees that have been employed for at least six (6) months. The Commission contributes seven (7) percent of each eligible employee's base pay with the amounts being fully vested upon payment by the Commission. The total expense for the year ended December 31, 2011 was $87,237.

Note G – Post Employment Health Benefits

During a prior year the Commission established a post employment health plan for its employees. The plan is available to any employee with at least ten (10) years of service, but less than twenty-five (25) years.

Upon separation from service 50% of the employee's unused sick leave hours are multiplied by 50% of the employee's hourly pay rate at the separation date to determine a value which will be transferred to a medical savings account

At December 31, 2011 twelve (12) employees would qualify for this benefit. Assuming that all twelve (12) separated from service at that date, and utilizing their current sick leave hours and rates of pay then the computed value is $88,588. During the current year the Commission invested $0 to continue funding this benefit. This investment is shown on the Statement of Net Assets – Modified Cash Basis at its current market value of $97,261.

Any employee with twenty-five (25) years or more of service is provided full health insurance coverage in lieu of the above. This coverage is provided from date of separation until death.

Note H – Risk Management

The Commission is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The Commission carries commercial insurance for these risks. Settled claims resulting from these risks have not exceeded insurance coverage in any part of the past three fiscal years.

Note I – Subsequent Events

Management has evaluated subsequent events through July 27, 2012, the date on which the financial statements were available to be issued.

Section III

Supplemental Information

Gulf States Marine Fisheries Commission
Budgetary Comparison Schedule
For the Year Ended December 31, 2011

	Budget			Actual			Over
	Operating Fund	Grant Funds	Total	Operating Fund	Grant Funds	Total	(Under) Budget
Revenues:							
Member state appropriation	$ 112,500	$ -	$ 112,500	$ 157,500	$ -	$ 157,500	$ 45,000
Other income	-		-	890		890	890
Interest income	-		-	874		874	874
Dividend income	-		-	2,001		2,001	2,001
Rent income	-		-	5,040		5,040	5,040
Lease income			-	-		-	-
Post employment health plan revenue			-	-		-	-
Grant income		13,460,502	13,460,502		30,351,598	30,351,598	16,891,096
Registration fees	-		-	13,990		13,990	13,990
Transfers in			-	-		-	-
Gain on sale of assets			-	-		-	-
Unrealized gain (loss) on investments			-	(2,390)		(2,390)	(2,390)
Totals	112,500	13,460,502	13,573,002	177,905	30,351,598	30,529,503	16,956,501
Personal costs							
Salaries	36,029	1,134,820	1,170,849	36,055	1,093,540	1,129,595	(41,254)
Payroll taxes	2,812	87,190	90,002	1,975	84,047	86,022	(3,980)
Health insurance	4,446	276,421	280,867	3,200	257,066	260,266	(20,601)
Retirement expense	2,522	78,865	81,387	5,937	81,300	87,237	5,850
Post employment health plan expense	-	-	-	-	-	-	-
Totals	45,809	1,577,296	1,623,105	47,167	1,515,953	1,563,120	(59,985)
Maintenance/Operations							
Facilities	-	7,200	7,200	-	5,040	5,040	(2,160)
Office supplies	6,590	79,695	86,285	524	79,179	79,703	(6,582)
Postage	800	20,365	21,165	306	11,632	11,938	(9,227)
Travel - committee	-	327,176	327,176	64	244,387	244,451	(82,725)
Travel - staff	18,350	105,626	123,976	7,148	71,835	78,983	(44,993)
Telephone	3,000	47,000	50,000	383	28,288	28,671	(21,329)
Office equipment	-	123,619	123,619	860	93,549	94,409	(29,210)
Copying expense	2,001	43,150	45,151	566	34,696	35,262	(9,889)
Printing expense	1,200	12,995	14,195	42	8,636	8,678	(5,517)
Meeting costs	18,000	61,000	79,000	11,541	65,018	76,559	(2,441)
Subscriptions & dues	3,000	1,800	4,800	1,559	988	2,547	(2,253)
Automobile expenses	6,000	11,425	17,425	159	9,122	9,281	(8,144)
Insurance	2,050	28,049	30,099	577	24,738	25,315	(4,784)
Maintenance	1,900	159,891	161,791	772	135,149	135,921	(25,870)
Professional expenses	700	163,511	164,211	460	4,105,351	4,105,811	3,941,600
Contractual	-	10,636,324	10,636,324	-	23,850,559	23,850,559	13,214,235
Utilities	1,200	26,130	27,330	353	18,035	18,388	(8,942)
Janitorial	1,300	28,250	29,550	256	15,564	15,820	(13,730)
Courtesies	600	-	600	1,737	-	1,737	1,137
Carryover expense	-	-	-	-	-	-	-
Totals	112,500	13,460,502	13,573,002	74,474	30,317,719	30,392,193	16,819,191
Excess of revenues over expense	$ -	$ -	$ -	$ 103,431	$ 33,879	$ 137,310	$ 137,310

Budgetary Comparison Schedule

(1) Basis of Presentation

The Budgetary Comparison Schedule presents the original adopted budget, the actual data on the cash basis, and variances between the budget and the actual data.

Gulf States Marine Fisheries Commission
Schedule of Expenditures of Federal Awards – Cash Basis
For the Year Ended December 31, 2011

Federal Grantor / Program Title	Catalog of Federal Domestic Assistance	Federal Expenditures
U.S. Department of Interior		
Aquatic Nuisance	15.608	$ 44,224
Sports Fish Restoration Program	15.605	194,906
Total U. S. Department of Interior		239,130
U.S. Department of Commerce		
Interjurisdictional Fisheries Management Plan	11.407	238,024
Recreational Fisheries Information Network (RECFIN) and Commercial Fisheries Information Network (COMFIN)	11.434	6,221,781
Economic Data Program	11.434	383,150
Southeast Area Monitoring and Assessment Program (SEAMAP)	11.435	236,441
Emergency Disaster Recovery Program	11.454	11,635,339
Emergency Disaster Recovery Program II	11.454	5,131,760
Habitat Conservation	11.463	60,858
Stock Assessment Enhancement	11.472	4,011,020
Oil Disaster Recovery Program	11.477	2,052,686
Total U. S. Department of Commerce		29,971,059
Total expenditures of federal awards		$ 30,210,189

Note A - Basis of Presentation

The accompanying Schedule of Expenditures of Federal Awards (the Schedule) includes the federal grant activity of the Gulf States Marine Fisheries Commission under programs of the federal government for the year ended December 31, 2011. The information in this Schedule is presented in accordance with the requirements of OMB Circular A-133, *Audits of States, Local Governments and Non-Profit Organizations*. Because the Schedule presents only a selected portion of the operations of the Commission, it is not intended to and does not present the financial position, changes in net assets or cash flows of the Commission.

Note B - Summary of Significant Accounting Policies

Expenditures reported on the Schedule are reported on the cash basis of accounting. Such expenditures are recognized following the cost principles contained in OMB Circular A-87, *Cost Principles for State, Local and Indian Tribal Governments*, wherein certain types of expenditures are not allowable or are limited as to reimbursement.

See Independent Auditors' Report.

Section IV

Reports on Compliance and Internal Control

PILTZ, WILLIAMS, LAROSA & COMPANY

CERTIFIED PUBLIC ACCOUNTANTS
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Sam J. LaRosa, Jr., CPA (Retired)
William S. Thompson, CPA (Retired)
Gene M. Clark, Jr., CPA (Retired)

Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

Board of Commissioners
Gulf States Marine Fisheries Commission
Ocean Springs, Mississippi

We have audited the financial statements of the governmental activities, each major fund and aggregate remaining fund information of Gulf States Marine Fisheries Commission as of and for the year ended December 31, 2011, which collectively comprise Gulf States Marine Fisheries Commission's basic financial statements and have issued our report thereon dated July 27, 2012. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States.

Internal Control Over Financial Reporting

In planning and performing our audit, we considered Gulf States Marine Fisheries Commission's internal control over financial reporting as a basis for designing our auditing procedures for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of Gulf States Marine Fisheries Commission's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of Gulf States Marine Fisheries Commission's internal control over financial reporting.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or combination of significant deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be deficiencies, significant deficiencies, or material weaknesses. We did not identify any deficiencies in internal control over financial reporting that we consider to be material weaknesses, as defined above.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether Gulf States Marine Fisheries Commission's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

This report is intended solely for the information and use of the Commission, management, others within the organization, and federal awarding agencies and pass-through entities and is not intended to be and should not be used by anyone other than these specified parties.

Piltz, Williams, LaRoe + Co.

Certified Public Accountants

Biloxi, Mississippi
July 27, 2012

PILTZ, WILLIAMS, LAROSA & COMPANY

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Independent Auditor's Report on Compliance with Requirements That Could Have a Direct and Material Effect on Each Major Program and on Internal Control Over Compliance in Accordance with OMB Circular A-133

Board of Commissioners
Gulf States Marine Fisheries Commission
Ocean Springs, Mississippi

Compliance

We have audited Gulf States Marine Fisheries Commission's compliance with the types of compliance requirements described in the U.S. Office of Management and Budget (OMB) Circular A-133 *Compliance Supplement* that could have a direct and material effect on each of its major federal programs for the year ended December 31, 2011. Gulf States Marine Fisheries Commission's major federal programs are identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs. Compliance with the requirements of laws, regulations, contracts and grants applicable to each of its major federal programs is the responsibility of Gulf States Marine Fisheries Commission's management. Our responsibility is to express an opinion on Gulf States Marine Fisheries Commission's compliance based on our audit.

We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and OMB Circular A-133, *Audits of State, Local Governments, and Non-Profit Organizations*. Those standards and OMB Circular A-133 require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about Gulf States Marine Fisheries Commission's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion. Our audit does not provide a legal determination on Gulf States Marine Fisheries Commission's compliance with those requirements.

In our opinion, Gulf States Marine Fisheries Commission complied, in all material respects, with the compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended December 31, 2011.

Internal Control Over Compliance

Management of Gulf States Marine Fisheries Commission is responsible for establishing and maintaining effective internal control over compliance with the requirements of laws, regulations, contracts, and grants applicable to federal programs. In planning and performing our audit, we considered Gulf States Marine Fisheries Commission's internal control over compliance with the requirements that could have a direct and material effect on a major federal program to determine our auditing procedures for the purpose of expressing our opinion on compliance and to test and report on internal control over compliance in accordance with OMB Circular A-133, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of Gulf States Marine Fisheries Commission's internal control over compliance.

A *deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. A *material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identity all deficiencies in internal control over compliance that might be deficiencies, significant deficiencies, or material weaknesses. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses, as defined above.

This report is intended solely for the information and use of the Commission, management, others within the organization and federal awarding agencies and pass-through entities and is not intended to be and should not be used by anyone other than these specified parties.

Piltz, Williams, LaRosa & Co.

Certified Public Accountants

Biloxi, Mississippi
July 27, 2012

Section V

Other Items

Gulf States Marine Fisheries Commission
Schedule of Findings and Questioned Costs
For the Year Ended December 31, 2011

Section 1 – Summary of Auditors' Results

1. An unqualified opinion was issued on the basic financial statements.

2. There were no significant deficiencies in internal control disclosed by the audit of the basic financial statements.

3. The audit did not disclose any noncompliance which is material to the basic financial statements.

4. The audit did not disclose any material weaknesses in internal control over major programs.

5. An unqualified opinion was issued on compliance for major programs.

6. The audit did not disclose any findings that are required to be reported in accordance with Section __.510(a) of OMB Circular A-133.

7. The major programs were: Emergency Disaster Recovery Program I and II – 11.454, Stock Assessment Enhancement – 11.472, Oil Disaster Recovery Program – 11.477

8. The dollar threshold used to distinguish between Type A and Type B Programs was $906,306.

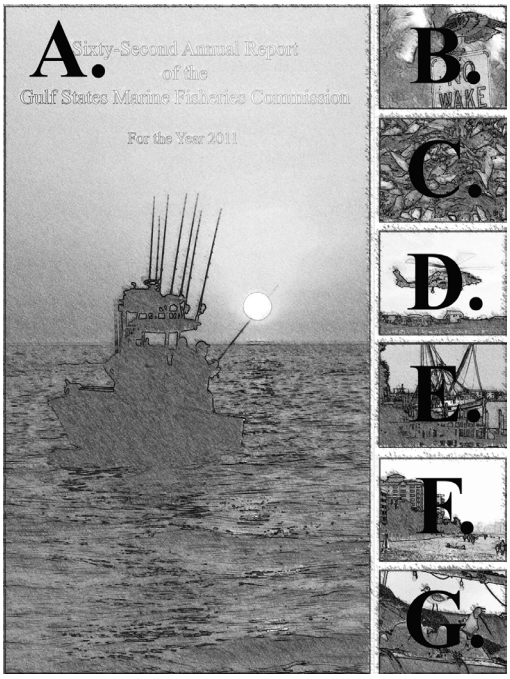
9. The auditee does not qualify as a low-risk auditee.

Section 2 – Findings Related to the Financial Statements

None

Section 3 – Findings and Questioned Costs for Federal Awards

None



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Gulf States Marine Fisheries Commission
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