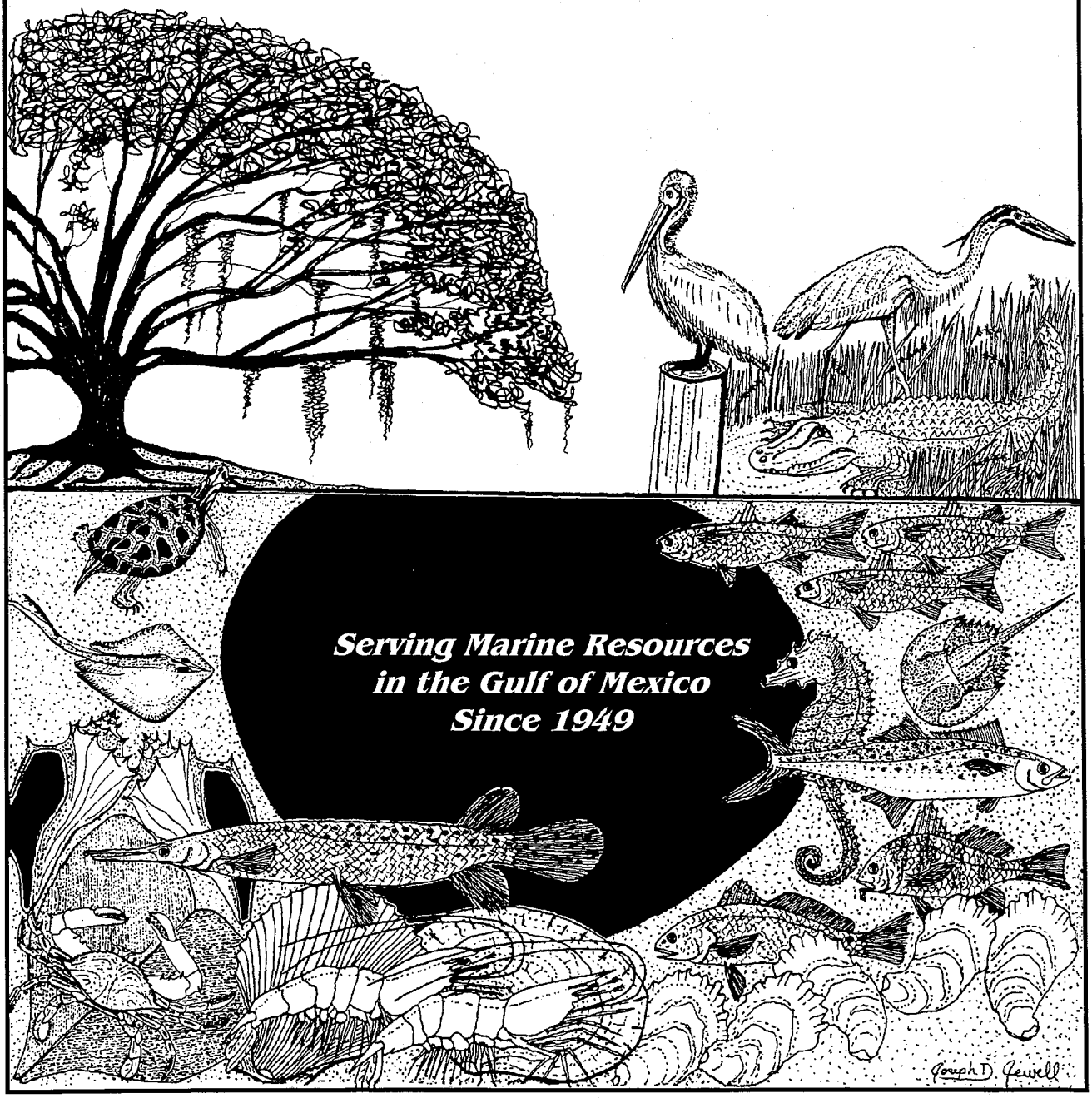
Fifty-third Annual Report
of the
GULF STATES MARINE FISHERIES COMMISSION

For The Year 2002



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

FIFTY-THIRD ANNUAL REPORT
(2002)

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 Recipients

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 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
WINNERS

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

Acknowledgments

In submitting this Fifty-third 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 fifty-three years could not have been possible without such valued assistance. This acknowledgment 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,

Vernon Minton, *Chairman*
Mike Ray, *First Vice Chairman*
Billy Hewes, *Second Vice Chairman*
Larry B. Simpson, *Executive Director*

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Commission Roster

Commission Officers

Chairman: Vernon Minton

First Vice Chairman: Mike Ray

Second Vice Chairman: Billy Hewes

Commissioners

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

ALABAMA

Riley Boykin Smith
Alabama Department of Conservation & Natural Resources
Montgomery, AL

Walter Penry
Alabama House of Representatives
Daphne, AL

Chris Nelson
Bon Secour Fisheries, Inc.
Bon Secour, AL

FLORIDA

Ken Haddad
Florida Fish & Wildlife Conservation Commission
Tallahassee, FL

Jeff Kottkamp
Florida House of Representatives
Cape Coral, FL

William Ward
Tampa, FL

LOUISIANA

James H. Jenkins, Jr.
Louisiana Department of Wildlife & Fisheries
Baton Rouge, LA

Warren Triche
Louisiana House of Representatives
Thibodaux, LA

Frederic L. Miller
Shreveport, LA

MISSISSIPPI

William Walker
Mississippi Department of Marine Resources
Biloxi, MS

Billy Hewes
Mississippi Senate
Gulfport, MS

Walter J. Blessey
Biloxi, MS

TEXAS

Robert L. Cook
Texas Parks & Wildlife Department
Austin, TX

J.E. "Buster" Brown
Texas Senate
Austin, TX

Governor Appointee - Vacant

Staff

Larry B. Simpson, *Executive Director*

Ronald R. Lukens, *Assistant Director*

Virginia K. Herring, Executive Assistant
Nancy K. Marcellus, Administrative Assistant
Cynthia B. Yocom, Staff Assistant
Cheryl R. Noble, Staff Assistant
Madeleine A. Travis, Staff Assistant
Deanna L. Valentine, Data Entry Clerk
Sharon L. Flurry, Data Entry Clerk
Gayle E. Jones, Receptionist

David M. Donaldson, Program Manager
Steven J. VanderKooy, Program Coordinator
Jeffrey K. Rester, Program Coordinator
Joseph P. Ferrer, III, Network Administrator
Gregory S. Bray, Programmer/Analyst
A. Mike Sestak, III, Programmer/Analyst
Douglas J. Snyder, Survey Coordinator
Jason S. Keenum, Accountant

Active Committees

Executive Committee ..... Vernon Minton
Mike Ray
Billy Hewes
Virginia Vail
John Roussel

Law Enforcement Committee ..... Jeff Mayne, Chairman
Larry Young, Vice Chairman

Commercial/Recreational Fisheries Advisory Panel ..... Philip Horn, Commercial Chairman
Vacant, Commercial Vice Chairman
Grey Cane III, Recreational Chairman
Randy Gros, Recreational Vice Chairman

State-Federal Fisheries Management Committee ..... Larry B. Simpson, Facilitator

Derelict Crab Trap Task Force ..... Harriet M. Perry, Chairman

Menhaden Advisory Committee ..... William S. Perret, Chairman

Stock Assessment Team ..... Joe Shepard, Chairman

Striped Bass Technical Task Force ..... Doug Frugé

Technical Coordinating Committee ..... William S. Perret, Chairman
John Roussel, Vice Chairman

TCC Anadromous Fish Subcommittee ..... Doug Frugé, Chairman
Larry Nicholson, Vice Chairman

TCC Artificial Reef Subcommittee ..... Steve Heath, Chairman
Jon Dodrill, Vice Chairman

TCC Crab Subcommittee ..... Tom Wagner, Chairman

TCC Data Management Subcommittee ..... Page Campbell, Chairman
Joe O'Hop, Vice Chairman

TCC Habitat Subcommittee ..... Dale Shively, Chairman

TCC SEAMAP Subcommittee ..... Jim Hanifen, Chairman
Richard Waller, Vice Chairman

GULF STATES MARINE FISHERIES COMMISSION
EXECUTIVE DIRECTOR'S REPORT

Larry B. Simpson, Executive Director

Looking over the year, the Commission's actions ranged from artificial reefs to shrimp economic disaster. In addition to those issues, work continued on regional data collection and management, habitat concerns, Council management, endangered sea turtles, invasive species, and regional research on marine resources. This list is not exhaustive or even complete, but it does give one a glimpse of what the Commission is doing to meet our charge to "promote the better utilization of the fisheries, marine, shell, and anadromous . . . by the development of a joint program for the promotion and protection of such fisheries and the prevention of the physical waste of the fisheries from any cause." In 1978, when I first came to the Commission, maximizing the take of marine fisheries was of highest concern. Now we face a myriad of environmental, ecosystem, economics, and social issues, as well. The recipe for worthwhile work to address these issues is mirrored by our activities in 2002.

This report, as mandated by Congress, documents our crosscutting and robust efforts for the year. Our efforts are coordinated with the marine fisheries commissions in the Pacific and Atlantic and the federal fisheries agencies. I am proud of our contributions, but much is yet to be done. We expect to implement a gulf wide trip ticket system for the commercial fishery to complement the for-hire and recreational data system in place. An otolith manual is in production to help coordinate research entities along the Gulf and East Coasts. Coordinated derelict trap removal in all the Gulf States is being planned and implemented.

Finally, I want to thank the state marine agencies of Texas, Louisiana, Mississippi, Alabama, and Florida for their efforts on behalf of marine resources. With their cooperation and the like-mindedness of our federal partners, we can achieve great things for the living marine resources of the Gulf of Mexico.

MEETINGS/ACTIVITIES OF THE EXECUTIVE DIRECTOR

Gulf States Marine Fisheries Commission Meetings

Cafeteria Plan Meeting with Staff, Ocean Springs, Mississippi – February 2002
Meeting with Commissioner V. Minton (ADCNR), Mobile, Alabama – February 2002
Conference Call on Recreational Management, Ocean Springs, Mississippi – March 2002
GSMFC 52nd Spring Meeting, Biloxi, Mississippi – March 2002
Retirement Plan Meeting with Staff, Ocean Springs, Mississippi – April 2002
State Directors' Meeting, Brownsville, Texas – April 2002
GSMFC 53rd Annual Meeting, Duck Key, Florida – October 2002
Gautier Rotary Club Presentation, Gautier, Mississippi – December 2002

Gulf of Mexico Fisheries Management Council Meetings

Brownsville, Texas – January 2002
Mobile, Alabama – March 2002
Destin, Florida – May 2002
Sarasota, Florida – July 2002
New Orleans, Louisiana – September 2002
Key Largo, Florida – November 2002

Congressional Activities

Meetings with Congressional Delegates & Staff, Marine Resource Issues, Washington, D.C. – January 2002
Meeting with Senator Lott's Staff, Marine Resource Issues, Ocean Springs, MS – April 2002

Other Meetings & Activities

MARFIN Conference, Tampa, Florida – January 2002
Jackson County Bank Symposium, Biloxi, Mississippi – February 2002

Testimony to U.S. Oceans Policy Commission, New Orleans, Louisiana – March 2002
Conference Call, Texas A&M University, Fisheries Management Class, Ocean Springs, Mississippi – March 2002
MARFIN Awards Recommendations, Tampa, Florida – May 2002
Southeast Fisheries Association 50th Annual Meeting, Jacksonville, Florida – May 2002
Conference Call, Recreational Fisheries Quota Management, Ocean Springs, Mississippi – May 2002
Recreational Fisheries Monitoring, San Diego, California – June 2002
Conference Call, Bycatch, Ocean Springs, Mississippi – July 2002
NOAA Strategic Plan Meeting, New Orleans, Louisiana – September 2002
Conference Call, Gulf Shrimp Fishery, Ocean Springs, Mississippi – September 2002
National State Directors' Meeting, Washington, D.C. – December 2002

Southeast Area Monitoring and Assessment Program (SEAMAP)

Jeffrey K. Rester, Program Coordinator

During 2002, SEAMAP operations continued for the twenty-first consecutive year. SEAMAP resource surveys included the Spring Plankton Survey, Reef Fish Survey, Summer Shrimp/Groundfish Survey, Fall Plankton Survey, Fall Shrimp/Groundfish Survey, and plankton and environmental data surveys.

The SEAMAP Spring Plankton Survey took place from April 18, 2002 through May 31, 2002. Samples were taken from 167 stations from the west Florida shelf to the Louisiana/Texas border. 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 NMFS conducted reef fish sampling from April 2, 2002 through May 31, 2002. Using trap videos and fish traps, 324 sites were sampled. The primary purpose of this survey was to assess relative abundance and compute population estimates of reef fishes found on natural reef fish habitat in the Gulf of Mexico.

The overall sampling strategy during the 2002 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 entire survey occurred from June 2, 2002 through July 17, 2002. 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, to aid in evaluating the "Texas Closure" management measure of the Gulf Council's Shrimp Fishery Management Plan, and to provide information on shrimp and groundfish stocks across the northern Gulf of Mexico from inshore waters to 50 fm. During the survey, all vessels took environmental data, including temperature, salinity, oxygen, and chlorophyll at each station.

The Fall Plankton Survey took place from August 28, 2002 through September 21, 2002. Alabama, the NMFS, Mississippi, and Louisiana sampled 109 stations on the west Florida shelf and northern Gulf of Mexico. 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 was conducted from October 12, 2002 through December 5, 2002, from off Mobile, Alabama, to the U.S./Mexican border. Vessels sampled waters out to 60 fm, covering 367 trawl stations, in addition to plankton and environmental sampling. The objectives of the survey were similar to the summer shrimp/groundfish survey.

The NMFS, Mississippi, Alabama, and Louisiana vessels collected ichthyoplankton data at sample sites occurring nearest to half-degree intervals of latitude/longitude. A total of 59 stations was sampled with bongo and/or neuston nets, as encountered along cruise tracks. The NMFS completed 54 ichthyoplankton stations, Mississippi completed two stations, and Louisiana completed three stations.

A major function of the SEAMAP Information System is the processing of catch data from the Summer Shrimp/Groundfish Survey as near-real-time data. Plots of station locations and catch rates of shrimp, squid, and dominant finfish species were prepared and edited at the NMFS Mississippi Laboratories, and processed by the GSMFC for weekly distribution to management agencies, fishermen, processors, and researchers. The SEAMAP real-time plots were produced during the 2002 Summer Shrimp/Groundfish Survey. Seven weekly mailings were produced and distributed to approximately 220 interested individuals. These plots were also available through the SEAMAP home page. Management agencies also received comprehensive data listings showing penaeid shrimp length frequencies, sampling parameters, and environmental conditions.

Data from the 2001 Fall Shrimp/Groundfish Survey were used to produce red snapper real-time plots in January 2002. These plots described research trawl effort and catch rates for juvenile red snapper during the survey. This was the fourth year the plots were produced and distributed to interested individuals.

COOPERATIVE INTERSTATE FISHERY MANAGEMENT IN THE TERRITORIAL SEA OF THE GULF OF MEXICO

Ronald R. Lukens, Executive Director

The Gulf States Marine Fisheries Commission (GSMFC) provided administrative support for "Sport Fish Restoration Administrative Program," FWS Grant Agreement No. GS-96-Segment 5. The GSMFC furnished services, qualified personnel and materials, equipment, and facilities as needed to perform required duties.

During the period covered by this report, the Program Coordinator attended and/or participated in meetings and 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

Revision of Materials Guidelines

The TCC Artificial Reef Subcommittee began work on revising the document entitled *Guidelines for Marine Artificial Reef Materials* beginning during the meeting held in February 2001. That meeting was held jointly with the Artificial Reef Subcommittee of the Atlantic States Marine Fisheries Commission, and it was decided at that time to conduct the revision jointly such that the revised document will be a joint product. The GSMFC Artificial Reef Subcommittee met in July 2001 to begin actual revision of the subject document. Subsequent to that meeting, members and the Coordinator drafted proposed revised language, which was discussed at that time. During the current project year, the Artificial Reef Subcommittee met jointly, again, with the Atlantic States Marine Fisheries Commission's Artificial Reef Subcommittee in March. The majority of that meeting was devoted to revising the subject document. At the close of the year, the revision process was about 99% complete, pending final review, formatting, and addition of graphics. The Subcommittee expects to have a complete final draft prepared for publication during early 2003.

Artificial Reef Database

The GSMFC created a query function which revealed a number of duplicate records that were missed during the first database analysis. Those duplicate records have not yet been deleted, but are identified. Upon completion of the web-based data entry program, the duplicate records will be purged. Currently, the web-based data entry program has been completed for beta testing, and the states will be able to enter their own data into the regional database on a testing basis. In addition, a web-based query system that will allow individuals to run custom queries of the database will be developed.

Other Issues

The Subcommittee continued to work on issues related to the use of MARAD surplus ships for artificial reefs. A recent study by the U.S. Navy revealed that PCB contamination of ships does not exceed EPA standards for human health or environmental compatibility. It is hoped that ships will be made available to the states in the coming year. No progress has been made on adding to the literature database.

ANADROMOUS FISH ACTIVITIES

FMP Revision

The GSMFC Interjurisdictional Fisheries Management Program officially began revision of the Striped Bass Fishery Management Plan (FMP) in January 2001. The Program Coordinator worked closely with the Interjurisdictional Fisheries Management Program Coordinator to accomplish tasks associated with the revision. Several issues have been raised that will affect the FMP, including development of reliable broodstock sources and competitive impacts on other species of stocking striped bass. It is anticipated that the habitat section of the striped bass FMP revision will be significantly amended to include information contained in that document. Completion of the revision is expected during 2003.

FISHERIES HABITAT

In 1996, the U.S. Congress passed significant amendments to the Magnuson-Stevens Fishery

Conservation and Management Act, including provisions to identify, describe, enhance, and protect essential fish habitat (EFH). While the Magnuson-Stevens Act established federal fishery management policies, fisheries habitat is largely located within state jurisdictional waters, a situation which represented the potential for conflict if there was not close coordination between the federal agencies and the states. Important issues involving Habitat Program activities included the development of a regional policy on management of submerged aquatic vegetation, a regional policy on management of wetlands, and development of an annotated bibliography on fishing gear impacts on habitat. The latter document is available on the GSMFC web page (www.gsmfc.org).

The GSMFC Habitat Subcommittee was integrally involved in the development and review of FMP habitat sections under development. The GSMFC Habitat Subcommittee reviewed materials for the Striped Bass FMP and assisted in developing that section.

INVASIVE SPECIES ACTIVITIES

The Program Coordinator continued to work in conjunction with the National Aquatic Nuisance Species (ANS) Task Force and the National Invasive Species Advisory Committee to determine appropriate actions and roles for the GSMFC and its member states to address invasive species issues. In addition, the Program Coordinator worked cooperatively with the Gulf of Mexico Program Invasive Species Focus Team and the ANS Task Force's Gulf Regional Panel to identify invasive species issues associated with coastal and marine waters in the Gulf of Mexico.

During this project year, the Program Coordinator prepared a proposal to the U.S. Fish and Wildlife Service to provide administrative support to the Gulf of Mexico Regional Panel on Aquatic Invasive Species, formed under the National Aquatic Nuisance Species Task Force. That proposal was accepted, and those activities began in September 2002. This was a direct result of the activities funded by this Sport Fish Restoration Administrative Grant.

MEETINGS/ACTIVITIES OF THE ASSISTANT DIRECTOR

January 17-18, 2002	Artificial Reef Public Hearings
January 29-30, 2002	Fishing and Boating Partnership Council Steering Committee on the Fish and Wildlife Service's Strategic Vision
February 5-7, 2002	Annual Morone Workshop
February 13, 2002	Artificial Reef Public Hearings
February 26-31, 2002	Aquatic Nuisance Species Task Force Meeting
March 25-28, 2002	TCC Artificial Reef Subcommittee Meeting
April 16-27, 2002	U.S. Geological Survey Meeting – Invasive Species Web Page & Database
May 5-7, 2002	Invasive Species Advisory Committee Meeting
May 8, 2002	Gulf of Mexico Program Invasive Species Focus Team Meeting
June 12-13, 2002	Gulf of Mexico Program Invasive Species Focus Team Meeting
June 24-28, 2002	Invasive Species Advisory Committee Meeting
July 6-9, 2002	Annual Meeting of the Ichthyologists and Herpetologists Conference – Invasive Species Symposium
August 6-8, 2002	TCC SEAMAP Subcommittee Meeting – Invasive Species Presentation
August 20-23, 2002	Annual Meeting of the American Fisheries Society – Invasive Species Symposium
August 30-31, 2002	U.S. Geological Survey Meeting – Invasive Species Web Page & Database
September 18-21, 2002	Annual Meeting of the International Fish & Wildlife Association
October 8, 2002	Louisiana Artificial Reef Meeting
October 29-30, 2002	HACCP Meeting for Fish & Wildlife Service
October 31-November 1, 2002	U.S. Geological Survey Meeting – Invasive Species Web Page & Database
November 12-16, 2002	Aquatic Nuisance Species Task Force Meeting
November 16-20, 2002	Invasive Species Advisory Committee Meeting

INTERJURISDICTIONAL FISHERIES (IJF) MANAGEMENT PROGRAM

Steven J. VanderKooy, Program Coordinator

The IJF FMP development and review program of the GSMFC continued to provide the Gulf States with quality information and recommendations for interstate management of fisheries. Additionally, this information was used continuously by the states in their respective programs. The IJF Program staff reviewed previously developed FMPs and monitored each state's progress in implementing management recommendations. The State-Federal Fisheries Management Committee (S-FFMC) reviewed these findings at the GSMFC's 53rd Annual Meeting.

During 2002 the IJF Program Coordinator and Staff Assistant were Mr. Steven J. VanderKooy and Mrs. Cynthia B. Yocom, respectively. 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. The repository for papers referenced in the FMPs was expanded as additional information was included; a contractor continued to computerize the repository into a literature 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.

Several publications were produced in 2002. The 2001 Revision to the *Blue Crab Fishery of the Gulf of Mexico, United States: A Regional Management Plan* was made available to the public in March 2002 both in paperback and on-line from the GSMFC website. The 2002 Revision of the *Menhaden Fishery of the Gulf of Mexico, United States: A Regional Management Plan* was approved by the Commission in March 2002 and was made available to the public in July 2002 both in paperback and on-line from the GSMFC website. Finally, the *Proceedings of the Blue Crab Mortality Symposium* was published in late 2001 and distributed on-line through the GSMFC website throughout 2002.

Task force and committee travel was coordinated and supported through the IJF Program and included the Striped Bass Technical Task Force, the Crab Subcommittee, the Derelict Trap Technical Task Force, the Habitat Subcommittee, the Menhaden Advisory Committee, the Commercial/Recreational Fisheries Advisory Panel, and the Law Enforcement Committee.

The Striped Bass TTF met in February, June, and November 2002. The task force spent considerable time developing goals for individual river systems in the Gulf region. Several sections of the FMP revision were drafted and reviewed for these meetings and considerable time was spent editing those sections. It is anticipated that the revision will be complete in 2003.

Individuals from the Crab Subcommittee participated in both the Texas trap cleanup in February and the Alabama trap sweep in June. Information learned from both efforts contributed to the Derelict Trap Task Force's guidelines document. Other issues being addressed by the Crab Subcommittee and the GSMFC involve the proposed reclassification of the Gulf of Mexico crab pot fishery from a NOAA Category III to Category II based on its "interactions" with marine mammals.

The Derelict Trap TTF was formed in October of 2001 by direction of the S-FFMC to continue efforts on derelict trap removal programs in the Gulf. As part of their effort to coordinate with the five state marine agencies and local municipalities, a guidelines document has been drafted which outlines the tasks required to successfully complete a derelict trap removal program. This document will be published through the GSMFC and be available to anyone via the GSMFC website. It will have detailed information on each state's trap removal programs and be useful at all levels of involvement from state legislatures to volunteer organizations and individuals. It is anticipated that the document will be used not only in the Gulf but in all coastal areas where derelict traps occur.

The Otolith Work Group continued final revision to the age-and-growth manual by mail. Several new species were added in support of the enhanced biological sampling being conducted through the Fisheries Information Network (FIN). It is anticipated that the manual will begin the rigorous GSMFC review process in late 2002 and be available in 2003. The publication will be printed "in-house" and will include full-color detail. The three-ring manual will include general and species-specific techniques for processing and ageing fish, will assist in the standardization of techniques used throughout the Gulf of Mexico, and will be an invaluable training tool.

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. Alabama and

Texas provided law enforcement expertise to the Striped Bass TTF and Derelict Trap TTF, respectively. The committee provided continuous updates to rules and regulations, boating safety, and upcoming and recent fisheries events via links available at http://www.gsmfc.org.

The LEC convened monthly conference calls to discuss regional management and subsequent enforcement activity including coordinated "high-contact" events, joint enforcement agreements, and regional training opportunities. Also discussed were pertinent Congressional activities including enforcement coordination, homeland security, and funding. The conference calls allowed the opportunistic discussion of regional issues including Gulf communication protocols, impacts of imports on domestic fisheries, and the use and subsequent bans of chloramphenicol on imported products. The IJF Staff Assistant continued to provide administrative support to all law enforcement activities.

Support and travel were provided to the Commercial/Recreational Fisheries Advisory Panel (C/RFAP) during the reporting period. The panel continued to provide input and review to FMPs in development. The C/RFAP examined and addressed several issues at their meetings which include bycatch issues, state legislation, artificial reefs, and derelict traps in the Gulf of Mexico.

At GSMFC's Spring Meeting, the Habitat Subcommittee met and discussed future outreach projects including the habitat video and adapting the habitat poster into a place mat for use in seafood restaurants. The Habitat Subcommittee also discussed reprinting the habitat poster (originally produced February 2001). The USFWS donated funds for the reprinting.

In June, the Habitat Program Coordinator attended a meeting to review the first draft of the Council's Essential Fish Habitat (EFH) Environmental Impact Statement (EIS). Comments from this meeting were presented to the Council in July. The Council discussed several options and alternatives for designating EFH and habitat areas of particular concern in the EIS. The Council also discussed fishing gear impacts on habitat.

The IJF Program Coordinator participated in several meetings and workshops during the reporting period – the USFWS's Morone Workshop in February, FIN Otolith Training Workshop in July, Marine Mammals Stranding Network Workshop in August, and several meetings with Sea Grant representatives to discuss derelict traps.

For the third year, the IJF Program has entered the NMFS's historic menhaden logs (Captain's Daily Fishing Reports) for the Gulf of Mexico. This effort is being conducted as time and money permit using temporary personnel to computerize historic data currently housed in Beaufort, North Carolina. To date, the 1985-1990 data has been entered; it is anticipated that this effort will be complete in mid 2003. Supervision of personnel has been directed by the IJF Coordinator.

Considerable time has been spent by the IJF Program Coordinator to develop a Gulf menhaden website. The site, to be launched via http://www.gsmfc.org, will be an on-line resource for all available menhaden information in the Gulf of Mexico and addresses basic biology, stock assessment, and the bait and reduction fisheries. It is believed that such a science-based website will assist to dispel persistent "misinformation" currently being provided to the public. It is anticipated that the GSMFC will review and approve the website's content in October, and the official launch will occur shortly after.

Program administration included financial and logistic support for all IJF-related meetings; production, duplication, and distribution of all documentation and correspondence related to the program; and 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. Lastly, 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.*

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.[1] 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 a 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 also 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

[1]The Southeast Region (the Region) includes Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, Puerto Rico, South Carolina, Texas, and the U.S. Virgin Islands.

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, the South Atlantic continues to participate at the work group level, and there is continued participation by staff members from both programs to ensure compatibility and comparability.

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 2002 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 FIN meeting was held in June 2002. Major issues discussed during the meeting included:

- Identification and continuation of tasks to be addressed in 2002 and instruction to Administrative Subcommittee and the Data Collection, Biological/Environmental, Social/Economic, Data Collection Plan, Registration Tracking and ad hoc work groups to either begin or continue work on these tasks;
- Development of the 2003 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 2002;
- 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 2003;
- 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 this 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 FIN/Atlantic Coastal Cooperative Statistics Program (ACCSP) Registration Tracking Work Group met in March 2002 to continue the development of the registration-tracking module, which will provide a unique identifier for vessels, fishermen, and dealers involved in commercial fisheries that is trackable through geographic location and time.
- The FIN Gulf of Mexico Geographic Subcommittee met in March 2002 to consider adding a question to the recreational field-intercept survey concerning use of artificial reefs while fishing.
- Representatives from the Gulf States, GSMFC, and NMFS met in March, June, and October 2002 to review the performance of the MRFSS intercept survey and review and evaluate January-December (2002) catch and effort data.
- The FIN Social/Economic Work Group met in

May 2002 to develop several social/economic data collection projects for funding consideration in 2003.

- The For-Hire Work Group met in June 2002 to review and finalize the economic add-on survey materials such as the trip survey questionnaire, annual survey questionnaire, notification letter, optional form for captains, data sheet for samplers, brochure/FAQ sheet as well as discuss the status of data entry program.
- The FIN Data Collection Plan Work Group met in July 2002 (via conference call) to review the 2002 otolith and length data collection and processing activities and develop sampling targets of priority species for 2003.
- Representatives from the Gulf States, GSMFC, and NMFS met in July 2002 for an otolith processor training workshop. The group discussed various issues including QA/QC standards for otolith processing, development of processor standards, and training protocols. In addition, the group conducted otolith processing for the priority species and reviewed and compared the results.
- The FIN Artificial Reef Work Group met in August 2002 (via conference call) to address the issue of adding a question regarding using artificial reefs while fishing. The group was developed the actual wording of the question and discussed the logistics of adding the question to the intercept survey.
- The State/Federal Fisheries Management Committee met in August 2002 to discuss the finalization of activities for funding for the 2003 FIN cooperative agreement.
- The ComFIN Data Collection Work Group met in September 2002 to begin the development of the discards module for FIN and review of Puerto Rico's commercial data collection activities.
- The Caribbean commercial port samplers met in October 2002 to address a variety of commercial issues. The main topics of discussion were the status of ComFIN, presentation of Caribbean commercial data collected under TIP, discussion of Gulf of Mexico port samplers data collection methods, comparison of Gulf of Mexico and Caribbean sampling techniques and a round table discussions.
- The FIN For-Hire Work Group met again in October 2002 to review of ACCSP For-Hire Pilot Survey results, determination of the best methodology for sampling head boats in the Gulf of Mexico, and other pertinent topics.
- The Gulf of Mexico commercial port samplers met in November 2002 to address a variety of commercial issues. The main topics of discussion were a demonstration of TIP data entry program, status of ComFIN, discussion of bycatch data collection methods, discussion of otolith processing, and review of state and federal data collection methods. In addition, there was a fish ID and sampling allocation workshop.

Operational Activities

Coordination and Administration of RecFIN(SE) and ComFIN 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 Texas (using their methodology), Louisiana, Mississippi, Alabama, and Florida (east and west coasts). The states also conducted weekly telephone calls to a 10% random sample of the Texas, Louisiana, Mississippi, Alabama, and Florida (east and west coasts) charter boat captains to obtain estimates of charter boat fishing effort that will be compared with the MRFSS estimates. 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 Port Sampling in Texas, Louisiana, and Florida - 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, Louisiana, and Florida. This is a continuation of an activity from the previous year.

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 continuation of an activity from the previous year.

Development and Implementation of FIN Data Management System - This task provided for further implementation of a fishery information system for the FIN based on the ACCSP model. This task provided funding for a Data Base Manager who will, in conjunction with the ACCSP, work on developing more data modules for the FIN and ACCSP data management systems. This is a continuation of development of the FIN data management system. In addition, the Data Base Manager will be responsible for transferring Florida, Alabama, Mississippi (oyster only) and Louisiana trip ticket data as well as recreational and biological data into the FIN data management system on an agreed upon schedule. It is the next step for implementing a regional system for FIN.

Trip Ticket Program Development, Implementation and Operation - This task provided for the initiation and development of a commercial trip ticket system for Texas and Mississippi, an activity under the ComFIN. This task provided for development of components for a commercial trip ticket system to census the commercial fisheries landings in Texas and Mississippi 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. Full operation of Louisiana, Alabama, and Florida trip ticket programs continue. GSMFC entered into a contract with Southwest Computer Bureau (SCBI) to provide installation and maintenance of electronic trip ticket programs for Louisiana, Mississippi, Alabama, and Florida. In Mississippi, the state is implementing a trip ticket program, however, was unable to pass legislation that would allow easier collection of data from dealers. Mississippi has continued to implement a program for oyster, bait shrimp, and finfish. Texas continued to evaluate the feasibility of implementing a trip ticket program in their state.

Biological Sampling of Commercial and Recreational Catches - This task provided for the collection of biological data from recreational and commercial fisheries. These data are essential to accurately assessing the status of commercial and recreational species such as red snapper, king mackerel, gulf and southern flounder, and greater amberjack. For the commercial aspects, port sampling will be collecting this information based on established guidelines. For the recreational side, samplers will go to sites and collect the necessary biological data using a modified MRFSS method. This task provides funding for collection, processing, and analysis of these data. The GSMFC provided coordination as well as tracking of the collection and analysis portions of this activity. This is a new activity.

Night Fishing Pilot Survey for Shore Mode in Mississippi - This task provided for the conduct of a pilot survey for developing a night sampling site register on the Mississippi coast for shore mode as well as conducting an intercept survey for night fishing activities. This information is potentially needed in order to improve estimates of recreational fishing catch and effort . The shore fishing mode was the primary target mode for the development of the nighttime site register and intercept survey. The GSMFC/NMFS produced expanded estimates of catch and effort by wave using the existing MRFSS methodology. These estimates will be compared with daytime catch estimates to determine if significant differences exist between day and night fishing activities.

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 2002 via a variety of different methods such as distribution of program documents, presentations to various groups interested in the FIN, and via the Internet:

- FIN Committee. 2002. 2003 Operations Plan for Fisheries Information Network (FIN). No. 107 Gulf States Marine Fisheries Commission, Ocean Springs. 25 pp + appendix.
- FIN Committee. 2002. Annual Report of the

Fisheries Information Network for the Southeastern United States (FIN) January 1, 2001 - December 31, 2001. No. 105 Gulf States Marine Fisheries Commission, Ocean Springs. 16 pp + appendices.

- FIN articles in the GSMFC newsletters.
- Variety of informal discussions occurred throughout the year during ASMFC, GSMFC, NMFS, and other participating agencies meetings and workshops.
- NPS personnel periodically provided information concerning the FIN (meeting notices, available documents, etc.) to the EPA's Gulf of Mexico Program computer Bulletin Board System.
- 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. 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 (www.st.nmfs.gov/st1/recreational/data.html).
- GSMFC has developed a home page that provides programmatic and operational information regarding FIN.

Joint GSMFC/Gulf of Mexico Fishery Management Council Habitat Program

Jeffrey K. Rester, Program Coordinator

During 2002, the Habitat and Crab subcommittees worked together to develop a Gulf-wide derelict trap removal program. The subcommittees worked jointly because the nature of the problem required a coordinated Gulf-wide effort to solve. A report was drafted detailing the problems derelict traps pose and possible solutions to the problems. A web page detailing the problems associated with derelict traps was created and is available on the Commission web site at www.gsmfc.org/derelicttraps.htm.

Texas closed its commercial crabbing season from February 16 through March 3, 2002, in an effort to remove derelict crab traps from state waters. The program coordinator traveled along with representatives from the Mississippi Department of Marine Resources, the Gulf Coast Research Laboratory, and the Louisiana Department of Wildlife and Fisheries to Texas to participate in a coast wide removal day on February 23. First hand experience was gained in organizing and coordinating an event of this magnitude. Prior planning was evident; the event was well organized and ran smoothly. Over 500 volunteers collected over 8,000 traps during the closed period.

On June 15, 2002, the program coordinator traveled with representatives from the Mississippi Department of Marine Resources and the Gulf Coast Research Laboratory to assist in the Alabama Department of Conservation and Natural Resources, Marine Resources Division's Derelict Crab Trap Removal Day. Tides on the 15th were high, but volunteers managed to collect over 350 traps from coastal Alabama waters. Our group of experienced crab trap retrievers collected 169 traps from the Bayou La Batre area.

Along with helping individual states collect derelict traps, the Commission formed a Derelict Trap Task Force that worked on several issues in 2002. The task force helped raise awareness of the derelict trap problem through the Commission web site. Several documents were made available on the Habitat Program web page concerning derelict traps, along with several pages of photos collected from all over the Gulf of Mexico. The task force also formulated guidelines for state removal programs. The guidelines were designed to help states develop removal programs to deal with not only blue crab traps, but also traps from other fisheries. The task force also worked on securing funding for derelict trap removal programs throughout the Gulf of Mexico. In 2002, the Derelict Trap Task Force applied for funding from NOAA's Community-Based Restoration Program for derelict trap removal in 2003 and 2004.

During 2002, the Commission's Habitat Subcommittee also was able to secure funding from the USFWS to reprint the habitat poster originally produced in February 2001. The subcommittee was able to print approximately 90,000 posters. The posters were distributed to schools, interested individuals, and at outreach events around the Gulf of Mexico. The subcommittee thanked the USFWS for their generous contribution.

During 2002, the Gulf of Mexico Fishery Management Council worked to develop their Essential Fish Habitat (EFH) Environmental Impact Statement (EIS). The EIS developed alternatives for designating EFH and habitat areas of particular concern, and more thoroughly discussed the impact of fishing gear on habitat. Two drafts of the EIS were developed in 2002. The first draft was reviewed in June with a second draft completed in October. The Council's three Habitat Protection Advisory Panels met jointly in October to discuss the fishery impacts due to explosive removal of oil and gas platforms in the Gulf of Mexico, methyl mercury in marine fish, and review the Council's second draft of the EIS.

ALABAMA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, MARINE RESOURCES DIVISION

Vernon Minton, Director

The Marine Resources Division (MRD) is responsible for management of Alabama's marine fisheries resources through research and enforcement programs. Three division facilities supported an average of 55 employees of the Administrative, Enforcement, and Fisheries Section during 2002.

SIGNIFICANT ACCOMPLISHMENTS

A program aimed at the elimination of derelict crab traps in Alabama waters resulted in the removal of over 475 derelict traps in summer 2002. This program was the first effort of its kind in Alabama waters and involved four other agencies, five civic groups, and division personnel.

Over 20,000 cubic yards of oyster shell was planted in Portersville Bay in the Mississippi Sound. An existing reef in need of cultch was replenished and an entirely barren bottom was planted to create a new reef.

Enforcement officers continued to improve and expand the Coastwatch Program, training citizens to recognize and report violations of saltwater fishing laws and regulations. Information from Coastwatch members has assisted with 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, 193 citizens have been trained at 30 training sessions held in Mobile, Baldwin, and Jefferson counties. The response to the program continues to be very positive.

The U.S. Department of Commerce appropriations budget for 2002 contained $15 million earmarked for cooperative enforcement initiatives between NOAA Office of Law Enforcement (OLE) and state fisheries law enforcement entities. The division and NOAA OLE entered into a joint enforcement agreement pursuant to the initiative. As part of the agreement, federal dollars were dedicated to increased 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. The ADCNR/MRD enforcement section received $598,000 as part of the agreement. These funds were used to purchase one offshore vessel, and surveillance equipment has been strategically located in coastal Alabama. Additionally, it provided funding to increase patrol hours for officers.

The facilities for red snapper brood fish maturation studies completed last year at the Claude Peteet Mariculture Center (CPMC) resulted in increased production of red snapper fingerlings. Production of these fingerlings by naturally-spawning fish enabled continued cooperative research to occur between the division, Auburn University, Alma Bryant High School, and the Gulf Coast Research Laboratory (Mississippi).

Plans and specifications were formulated for a pumping system and pipeline that will extend from the Gulf of Mexico at the Gulf State Park Pier to the CPMC. This project was funded by Coastal Impact Assistance Program (CIAP) funds. When completed, it will enhance the development of red snapper production at CPMC by providing a year-round supply of high salinity water.

The fourth year of a cooperative project with Auburn University at CPMC resulted in refined techniques for raising shrimp in ponds. These will be used to enhance production of shrimp in the farms of north central Alabama.

SIGNIFICANT PROBLEMS AND SOLUTIONS

A serious controversy existed regarding the use of gill nets along Orange Beach's front beach. The director planned to gather all parties involved to try and work out a just solution to the problem.

The number of crab traps in use in Alabama's estuarine area and the associated derelict traps continue to be a problem. Plans were made to reduce the number of traps in the future along with limiting entry to the fishery. In the meantime, the division initiated a program utilizing volunteers to assist in removing derelict crab traps from Alabama's coastal waters.

The lack of adequate quantities of high salinity, high quality water for rearing marine fish such as red snapper at the CPMC continued to be a problem during 2002. A portion of CIAP monies will be used to construct a pipeline from the Gulf State Park Pier to the CPMC during 2003.

There was a need for authority to allow offenses committed in the Gulf of Mexico (outside state territorial waters) to be heard in state district court. This may be accomplished through amendment of regulation 9-12-4.

Currently, there is no way to track recreational effort expended against marine resources through the use of gig, cast net, recreational crab traps, or spear fishing. These fishing gears need to be added to the recreational fishing license at no additional fee by amending 9-11-53.1 and 9-12-55.2.

Presently, commercial fishermen cannot legally sell fish caught in cast nets or with gigs because of a lack of a commercial license for this activity. A commercial license should be established for these activities.

Personnel needs still exist within the division. The enforcement section managed to hire five new individuals, but two vacancies remain. To reach full capability, these vacancies must be filled. Two existing officers were called into active duty, and two additional may be called within the near future.

ADMINISTRATION SECTION

The Administration Section provided supervision, clerical support, purchasing, and general administrative support for the two operational sections; supervised state seismic activity; and coordinated with other state, federal, and regional agencies on fisheries and environmental matters.

Staff in the section included the division director, nine clerical staff, one custodial worker, and one marine mechanic. Offices were maintained at Dauphin Island and Gulf Shores.

Accomplishments

Over 20,000 cubic yards of oyster shell was planted in Portersville Bay in Mississippi Sound. An existing reef in need of cultch was replenished, and an entirely barren bottom was planted to create a new reef.

Plans and specifications were formulated for a pumping system and pipeline that will extend from the Gulf of Mexico at the Gulf State Park Pier to the CPMC. This project was funded by CIAP funds. When completed, it will enhance the development of red snapper production at CPMC by providing a year-round supply of high salinity water.

Enforcement officers continued to improve and expand the Coastwatch Program, training citizens to recognize and report violations of saltwater fishing laws and regulations. Information from Coastwatch members assisted with 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, 193 citizens were trained during 30 sessions held in Mobile, Baldwin, and Jefferson counties. Response to the program continued to be very positive.

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The 2002 edition of the population information calendar was produced and distributed. Another edition of the children's activity book was printed and distributed to school children throughout the state of Alabama.

An alternative form of trip ticket submission, made available in 2002, was an electronic entry program. This computer program allowed seafood dealers to enter trip information and submit it electronically on a monthly basis.

Future Plans

After consultation with crab fishermen and other affected user groups, plans were developed to address overcapitalization in the crab fishery within Alabama's jurisdiction.

Plans were made to construct boat ramps at Little Billy Boat Hole and to support additional work at the Pier Street ramp in Fairhope during 2003.

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 enforced laws and regulations relating to boat safety and freshwater fishing

and hunting, conducted search and rescue missions, and participated in drug interdiction operations. Officers are cross-trained and deputized as National Marine Fisheries Service, U.S. Fish and Wildlife, and U.S. Customs Agents and cooperatively extensively with these agencies and other federal agencies in the coordination of joint enforcement agreements, 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 17 enforcement officers in the section, ten stationed at Mobile County, six stationed in Baldwin County, and the Chief Enforcement Officer stationed at Dauphin Island headquarters. Five vacancies were filled in 2002, and one additional position for Baldwin County will be filled in 2003.

Accomplishments

Enforcement officers conducted 11,728 hours of boat and shore patrol; 8,386 boat checks; 1,478 seafood shop inspections; 14,374 recreational fisherman checks; and issued 1,191 citations and warnings for illegal activities. Thirty-two percent of the citations and warnings (383) were for violations of recreational fishing laws and regulations. The 342 violations of commercial fishing laws and regulations comprised 29% of the citations and warnings issued. Officers also issued citations and warnings for 383 violations of boating safety laws and regulations, 32 wildlife and freshwater fisheries, and 51 citations for other state and federal laws and regulations. A total of 11,935.5 hours was spent on administrative duties, court attendance, training, and equipment maintenance. Officers worked 416.5 hours with the NMFS interjurisdictional fisheries enforcement program.

Enforcement officers continued to improve and expand the Coastwatch Program, training citizens to recognize and report violations of saltwater fishing laws and regulations. Information from Coastwatch members has assisted with 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, 193 citizens have been trained at 30 sessions held in Mobile, Baldwin, and Jefferson counties. Response to the program continued to be very positive.

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Officers attended training courses on boat handling, criminal investigation, self-defense, supervision, and other state and federal agency law enforcement programs.

Future Plans

Enforcement will continue to develop mechanisms to improve the Coastwatch Program and public outreach efforts to better communicate enforcement efforts and important information.

Procedures will be developed to further enhance Joint Enforcement Agreements with NOAA OLE and assure such agreements are implemented in future years.

Work will continue with the other Gulf States and the NFMS to implement the Gulfwide Strategic Fisheries Enforcement Plan.

FISHERIES SECTION

The activities of this section are directed toward management of commercial and recreational fisheries in Alabama's marine and estuarine waters and involve cooperative efforts with the NMFS in nearshore federal waters in the Gulf of Mexico and with other Gulf of Mexico state agencies to develop cooperative fisheries management programs. These activities are most often funded through federal aid programs of the U.S. Departments of Commerce (NMFS) and Interior (USFWS). Biological programs not covered by federal aid such as fish kill evaluation, oyster management, the preponderance of shrimp management efforts, 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. In addition,

Section personnel comment on all applications for U.S. Army Corps of Engineer permits in the coastal area.

Fisheries facilities consist of the Claude Peteet Mariculture Center in Gulf Shores and the Marine Resources Laboratory on Dauphin Island. Personnel consist of one Biologist V, one Biologist IV, one Biologist III, four Biologist IIs, one Biologist I, five Biologist Aides III, twelve Biologist Aides I/II, one ASA I/II, one by-weekly laborer, and two temporary laborers.

Accomplishments

The third full year of sampling was completed under the cooperative program with the Alabama Department of Environmental Management (ADEM) to integrate the division's assessment and monitoring program with ADEM's water quality monitoring program to allow both organizations to increase the intensity of sampling and improve data collection at little or no increase in cost.

The facilities for red snapper brood fish maturation studies completed last year at the CPMC have resulted in the increased production of red snapper fingerlings. The production of these fingerlings by naturally spawning fish has enabled continued cooperative research to occur between the division, Auburn University, Alma Bryant High School, and the Gulf Coast Research Laboratory.

Plans and specifications were formulated for a pumping system and pipeline that will extend from the Gulf of Mexico at the Gulf State Park Pier to the CPMC. This project was funded by CIAP funds. When completed, it will enhance the development of red snapper production by providing a year-round supply of high salinity water.

The fourth year of a cooperative project with Auburn University at CPMC resulted in refined techniques for raising shrimp in ponds. These will be used to enhance the production of shrimp in the shrimp farms of north central Alabama.

During the year 1,146 fisheries assessment samples were taken, 79 habitat assessments were performed, and 3,959 fishermen were interviewed during creel surveys.

Federal Aid

Wallop/Breaux. Wallop/Breaux funds are administered through the U.S. Fish and Wildlife Service. Funds used from this source by the division were directed toward a creel survey of Alabama's saltwater recreational anglers, production of the 2002 edition of the popular marine information calendar, construction of artificial fishing reefs in the Gulf of Mexico offshore from Alabama and inshore in Mobile Bay, maintaining equipment and facilities in Gulf Shores and Dauphin Island, managing the public artificial reef permits issuing system in the Gulf of Mexico off Alabama, assisting individuals in designing artificial reefs, conducting mariculture research on red snapper, maintaining and enhancing boat ramps for boating access, conducting a study of the attraction of juvenile red snapper to small patch reefs, and testing various offshore artificial reef modules with respect to attractant qualities and durability. An additional project to coordinate all federal aid programs within the division and cooperative with other Gulf States was also funded from this source.

Personnel also revised the Alabama Marine Resources Activity Book which provides an interactive format for educating elementary students about the life cycles and habitat of local organisms.

Adult Finfish Sampling Program. The division began a fishery independent gill net sampling program in July 2001. Its objective was to gather data on adult fish to be used in assessing the status of the stocks of important species. Sampling was conducted through the use of two gill net configurations and a stratified random design. In 2002, 4,827 finfish representing 52 species were collected.

Cooperative Statistics. Federal aid funds for this program were administered by the NMFS and utilized by the division to collect data on commercial shrimp, oyster, crab, and finfish landings. Additionally, information was collected on fish, shrimp, crabs, and oysters. Biological information was collected on blue crabs, striped mullet, flounder, red snapper, and Spanish mackerel. Commercial license information was kept in a computer database.

Southeast Area Monitoring and Assessment Program (SEAMAP). Funds from this program are administered by the NMFS and utilized in Alabama for the development of a long-term fishery-dependent data base on recreationally and commercially important marine and estuarine fishery stocks. This project provided funds to assist in management of the Alabama shrimp fishery and evaluate spawning success and juvenile survival for important recreational and commercial species. It also provides funds for a project to independently assess red snapper population by video camera and fish trap sampling. This study was conducted in Alabama's offshore reef permit areas in

the Gulf of Mexico.

Marine Recreational Fisheries Statistics Survey (MRFSS). All quotas established by the NMFS were met or exceeded in 2002. Division personnel completed 2,510 fishermen interviews. Over 164,400 fish were identified representing 62 species and over 7,300 fish measured. The division continued the vessel directory telephone survey in cooperation with the GSMFC and other Gulf States. This survey greatly improved charter boat fishing efforts. An economic survey was added in July to assist in calculating the value of the charter fishing fleet in the Gulf of Mexico.

Otolith Sampling Program. In January 2002, the division began collecting otoliths (ear stones) primarily from red snapper, greater amberjack, king mackerel, and southern and gulf flounder caught by commercial and recreational fishermen. Otoliths are used to age fish. A total of 2,650 otoliths were collected in 2002.

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 fisheries 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, made available in 2002, was an electronic entry program. A computer program allows seafood dealers to enter trip information and submit it electronically on a monthly basis. Data from the completed trip tickets are scanned into a computer, verified, and edited. Monthly data were sent to the GSMFC and will ultimately be supplied to the NMFS.

Coastal Impact Assessment Program (CIAP). CIAP funds, administered through the lands division of the ADCNR were utilized in a program to remove derelict crab traps from Alabama coastal waters and beaches. The program resulted in the removal of 477 derelict traps during June 2002.

Non-Federal Aid

Alabama Oyster Reef Enhancement. A formally barren bottom and a marginally productive oyster reef in Portersville Bay, Mississippi Sound, Alabama, were planted with a total of 20,000 cubic yards of oyster cultch material to enhance oyster growth and create a new reef in this formally productive section of Alabama waters. Both areas were delineated by pilings and signs for ease of location.

Biological and enforcement personnel worked together to collect data at oyster checkpoints, enabling the development of sound management measures for sustaining the oyster resources. Data collected assisted in increasing the accuracy of assessment of the status of Alabama oyster stocks.

The division also continued the cooperative endeavor with Auburn University and the new Alma May Bryant High School in Mobile County to provide a mariculture training center at the high school. This continues to be a very successful program which expands students' ability to participate in future fisheries.

Personnel maintained and improved the home page for the division which is associated with and accessed through the departmental page at **www.dcnr.state.al.us**. 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.

Future Plans

The Fisheries Biological Section will continue to collect appropriate data and work with recreational and commercial fishermen and other resource user groups to provide division administrators with recommendations for strategies and regulations for management.

Development of mariculture procedures for commercially important marine organisms will continue. This will be enhanced by the completion of a saltwater supply pipeline from the Gulf State Park in Gulf Shores to the mariculture center.

Cooperative projects will continue to be initiated with Auburn University, the Dauphin Island Sea Lab, and the University of South Alabama to investigate artificial reef benefits and red snapper production enhancement.

Inshore assessment and monitoring work will be continued monthly with the addition of new stations in order to provide a more comprehensive depiction of Alabama's marine waters and resources.

Continuation of the complete MRFSS in Alabama including creel of charter boats, private boats, ramps, and shoreline and continued telephone survey to better define effort within the fishery.

An oyster shell planting program in conjunction with research efforts by the Alabama

Marine Environmental Consortium (MESC) will be attempted to gain expanded insight as to the growth rates of oyster spat and the most efficient shell planting methods to enhance spat setting success.

The effort to remove derelict crab traps will continue with an expanded program scheduled for the spring and possibly summer 2003.

FLORIDA FISH & WILDLIFE CONSERVATION COMMISSION

Kenneth D. Haddad, Executive Director

DIVISION OF MARINE FISHERIES

Mark Robson, Director

The major responsibilities of the Division of Marine Fisheries include: (1) development and implementation of marine fisheries management policies, (2) issuance and reconciliation of commercial fishing licenses, (3) angler outreach and marine aquatic resource education, (4) the state artificial reef program, (5) monitoring compliance with the marine fisheries trip ticket reporting requirements though audits of applicable fish house records, (6) administration of the spiny lobster and stone crab effort management (i.e., trap certificate) programs, (7) civil penalty assessments for violations of specified fisheries regulations, and (8) issuance of Special Activity Permits. Highlights of staff efforts in 2002 (i.e., state fiscal year 2002/2003) are summarized below.

It should be noted that during this time period, Dr. Roy Crabtree resigned his position as Division Director to assume duties as Director of the National Marine Fisheries Service Southeast Region. Mr. Roy O. Williams served as Interim-Director of the Division until August 2003, when Mr. Robson, previously Director of the Commission's South Region, started.

Marine Fisheries Management and Policy Development

During the 2002/2003 year, the Florida Fish and Wildlife Conservation Commission passed a rule that requires all imported reef fish to conform to Florida's legal minimum size limits. Swordfish and billfish regulations were approved that require fishermen to possess a federal permit to sell swordfish, that established a recreational bag limit for swordfish, that implemented a swordfish size limit in state waters consistent with federal regulations, and that required recreational anglers to report all non-tournament landings of billfish and swordfish. The Commission approved a rule allowing skimmer trawls for the harvest of food shrimp in Northwest Florida. A new rule for blue land crabs established a closed season, bag limits, allowable gears, and prohibited the harvest of egg-bearing crabs. The Commission approved a ban on puffer fish harvest in five east counties for one year. A commercial vessel limit, a closed season, and a commercial license system for ballyhoo fishermen was developed. The Commission established a closed season for silver mullet on the Atlantic coast, prohibited commercial harvest of silver mullet on weekends during summer and fall, and established a recreational bag limit. Rules closing the blue crab fishery from September 20 to October 4 north of the Suwannee River and seaward of the three-mile line to prevent the use of blue crab traps to target stone crabs prior to the start of the stone crab season, and prohibiting placement of blue crab traps were approved to reduce user conflicts. The Commission also prohibited all harvest of spiny dogfish. New regulations were adopted. Additional regulations were enacted to deter illegal netting and facilitate enforcement of net gear prohibitions. The Commission established a commercial spiny lobster dive permit with maximum bag limits; anyone documenting harvest of lobster by diving during the period July 1, 2001 - June 30, 2003, and not possessing lobster trap tags is eligible to hold this permit. The Commission also approved a rule that allows staff to authorize public and private organizations to retrieve trap debris from shoreline areas and retrieve abandoned traps during closed seasons.

Angler Outreach and Aquatic Resource Education

Staff participated in various types of events where they provided information on fishing license requirements, fishing opportunities, fisheries management projects, the importance of habitat protection for healthy fisheries, and the Sportfish Restoration Program. Eleven fishing shows across Florida gathered over 60,000 anglers who interacted with FWC staff on a wide variety of fisheries-related topics. Four *Ladies, Let's Go Fishing* clinics were held where 419 women interested in learning more about sport fishing and fish resources participated in these two-day events. Panacea, Sarasota, and Fort Walton Beach were new cities added to the statewide Kids Fishing Clinics bringing the total to 14 events. Throughout the year, 4,476 children participated in the clinics and had a positive fishing experience learning about ethical angling and habitat conservation. Participant numbers for the clinics fell slightly from last year due to scheduling changes and inclement weather. The Pigeon Key facility and the Cedar Key Field Laboratory were the backdrop for 1,518 students to learn how to use equipment and sampling methods that

FWC biologists utilize to collect data for fisheries management. Fourteen teacher workshops where 219 teachers were instructed in fisheries management practices and proper specimen collecting methods for classroom learning programs where held statewide.

Artificial Reef Program

A USFWS Federal Aid in Sport Fish Restoration grant of $300,000, in concert with $300,000 in state fishing license revenues, provided funds to 20 local coastal governments and three non-profit organizations for 16 marine artificial reef construction projects and six artificial reef monitoring projects. The construction projects consisted of reefs using designed concrete reef modules, limestone boulders, and scrap concrete materials. The monitoring projects consisted of fish census and deployment verification mapping projects. Once completed, the reef monitoring project successfully ground-truthed scores of public artificial reefs off three counties in Northwest Florida, simultaneously verifying both LORAN-C and DGPS coordinates for reef sites and permit site boundaries. A statewide artificial reef strategic plan was developed with the assistance of a 12 person Reef Advisory Board which met three times during the year. The FWC then held three workshops to get public input on the plan which will go before the FWC Commission next year for approval. The section also worked with Mark Sosin's *Saltwater Journal* to develop a short video on the artificial reef program. The FWC also completed a large reef project in four expansive areas off Northwest Florida using three different types of pre-fabricated reef units placed in 502 distinct patch reefs. The project calls for many of these patch reef locations to remain unpublished to allow direct comparisons of fished versus non-fished artificial reefs.

Marine Fisheries Services

The primary function of this bureau is processing applications for the 24 basic types of commercial saltwater fishing licenses and permits and administering the trap certificate programs. The 2002/2003 stone crab season was the first year trap tags were required on stone crab traps; approximately 1.5 million tags were authorized for use although not all were actually fished. Nine saltwater products wholesale dealers were audited for purchase from unlicensed fishers and compliance with the trip ticket reporting requirements; onsite visits to several wholesale and retail dealers were made to discuss licensing and trip ticket reporting requirements. Seventy administrative hearings were scheduled (68 conducted) in response to a notice of proposed agency action pertaining to denial, suspension, or revocation of a commercial license/permit, allocation of stone crab trap tags or civil penalty assessment. A new position was received, the division's liaison with commercial fishers and saltwater products dealers to resolve problems with license/permit applications and provide information on new regulations and Commission meetings/workshops through direct mailings as well as the Commission's web site. Legislation intended to deter unlicensed sales and purchases of saltwater product through applications of stricter criminal and civil penalties was proposed and subsequently passed; the Legislature also approved definitions of "trap molestation" and "trap theft" that will facilitate application of existing criminal and civil penalties for molestation or theft of spiny lobster, stone crab, and blue crab trap gear.

FLORIDA MARINE RESEARCH INSTITUTE
Gil McRae, Director

Finfish

Gamefish, Reeffish, and Directed Life History Studies

A three-year study on spotted seatrout (*Cynoscion nebulosus*) reproduction in Tampa Bay continued. This study supplements an earlier study conducted on the east coast of Florida and aims at determining age-specific schedules of spawning frequency and batch fecundity, as well as geographically-specific maturity schedules, to refine the accuracy of spawning potential ratios (SPR) estimated for spotted seatrout in Florida waters. Work on the age, growth, and reproduction of Florida pompano (*Trachinotus carolinus*) along the Florida Gulf Coast continued. The objective of this study was to use a less-selective gear to catch pompano in a fishery-independent manner that should yield better estimates of age, growth, and fecundity than previous studies. We continued work on the biology and ecology of reef fishes in southeast Florida. Work on the life history and feeding ecology of yellowtail snapper (*Ocyurus chrysurus*), gray snapper (*Lutjanus griseus*), mutton snapper (*Lutjanus analis*), and lane snapper (*Lutjanus synagris*) is progressing well. A two-year research project on dolphin (*Coryphaena hippurus*) focused on collecting fishery and biological data for stock assessment purposes. A final report and manuscript will be published in peer-reviewed literature.

Baitfish

The annual springtime acoustic survey was conducted during April. This survey was conducted along the west coast of Florida to assess stocks of

important baitfish species such as Spanish sardine, Atlantic thread herring, round scad, and scaled sardine. Work continued to improve the newly-developed Ecopath/Ecosim/Ecospace models of the west Florida shelf. This modeling approach is used to investigate the ecosystem impacts of fishing and/or environmental anomalies on forage species such as sardine/herring species.

Mullet

The directed fishery-independent (trammel net) survey was conducted during September-January. This study monitored changes in the age/size structure of mullet population in Tampa Bay and Charlotte Harbor. Mullet were sub-sampled for aging.

Bivalve Fisheries Research

Bay scallop (*Argopecten irradians*) research continued to focus on assessing biological and environmental factors influencing the depletion or loss of scallop populations in peninsular Florida. Adult abundance and recruitment monitoring continued in estuaries and coastal areas between Pine Island Sound and Pensacola Bay. A federally-funded restoration program continued in the area between Sarasota Bay and Crystal River. The impact of hard clam (*Mercenaria*) aquaculture on the genetics and disease incidence in natural populations was studied. Funding was sought to evaluate potential impacts of shell removal by trawling activities on recruitment of calico scallops.

Crustacean Fisheries Research

The crustacean fisheries research program is comprised of fisheries-oriented biological and ecological studies on economically important crustaceans (shrimps and crabs) and other marine arthropods (horseshoe crab). Work began on a three-year grant that included studies to show (in detail) allowable shrimp harvesting zones in Florida, to gather information on the blue crab fishery, and to study the spawning habits and population genetic structure of horseshoe crab. In various stages of completion are manuscripts on the efficiency of BRDs in skimmer trawls (in review) and roller frame trawls (in preparation). Manuscripts on the genetic stock structure of blue crabs, pink shrimp, brown shrimp, and white shrimp were in review or in press. Manuscripts were prepared on population biology and fisheries biology of stone crabs in northwest Florida. A field study continued on the population biology of stone crabs in the vicinity of Tampa Bay. Assistance was given in the development of *A Guideline for Derelict Trap Clean-up Programs* in conjunction with the GSMFC Derelict Trap Task Force.

Fisheries Genetics Research

The fisheries genetics research program has two principal directions: (1) genetic stock identification of economically important marine organisms and (2) monitoring the effects of FMRI SERF hatchery operations on the gene pools of wild populations supplemented with hatchery-reared organisms and monitoring the success of stock restoration efforts. A work plan for the Fisheries Genetics Program was developed based on needs specified by the FWC.

Laboratory analyses of genetic stock structures of spotted seatrout, sheepshead, yellowtail snapper, mangrove snapper, vermilion snapper, and dolphin fish were nearly completed, and manuscripts that identify the geographic ranges of stocks of these fish species are in various stages of preparation. Laboratory analysis of samples to assess the effectiveness of the bay scallop stock restoration efforts was completed.

Genetic monitoring of the FMRI red drum stock enhancement program continued. A manuscript was developed based on a Master's Thesis in which the genetic diversity of red drum hatchery broods was compared to that of the wild population, parent/offspring identification was conducted, and genetically efficient breeding protocols were recommended. A 9-locus microsatellite DNA genetic tag was used to identify the origin (hatchery or wild) of several thousand red drum captured by various scientific groups and recreational anglers. The principal investigator was invited to serve on a scientific advisory board for a user-group-generated red drum stock enhancement project in Charlotte Harbor. The principal investigator and associate principal investigator were asked to serve on a statewide FWC ad hoc committee to formulate guidelines for genetic management of state-sponsored stock enhancement activities.

Fisheries Statistics

Fisheries Independent Monitoring Program

Fisheries-independent monitoring (FIM) of fishes continued in Tampa Bay, Charlotte Harbor, Indian River Lagoon, Cedar Key, Apalachicola, Northeast Florida, and the Florida Keys. The FIM Program used a systematic sampling strategy to collect fish free from the biases associated with collecting data from recreational and commercial fisheries. Data were

used for numerous stock assessments for several inshore species. Staff 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, as well as studying the fishes from the rivers feeding Charlotte Harbor and Tampa Bay.

Commercial Landings Statistics

Information on the commercial harvest of finfish, invertebrates, and other marine resources (including marine life and live rock used in the aquarium trade and some aquaculture products) was reported by 1,116 wholesale and retail dealers to the Florida Marine Fisheries Information System. There were 252,647 marine fisheries trip tickets submitted to the FWC by wholesale and retail dealers containing information on catch, gear, time and area fished, price, and commercial fishing licenses are reported annually under the mandatory reporting rules. These data are used in stock assessments, for quota monitoring, for design of sampling programs, and for summaries of landings and trips by species, qualification of fishermen for state and federal license endorsements and permits, and determination of participation in fisheries. Many of these data are incorporated into state and federal fishery management plans and stock assessments. In 2002, the commercial fisheries harvest in Florida was over 100.4 million pounds with a dockside value worth over $174.7 million. In addition, there were over 5.1 million organisms and over 250,000 pounds of live rock and live sand collected by marine life collectors worth approximately $2.4 million. Also in 2002 (as in 1999-2001), the reporting of aquaculture-raised saltwater products to the Commission was no longer required, but the data continued to be received and computerized when supplied to facilitate qualification for license endorsements for these fishermen.

Staff supplied the data management systems of the FIN, ACCSP, and NMFS SEFSC with edited trip ticket data from 1985-2002. Recently edited data are supplied periodically (usually every two weeks), and revised data made available.

Biostatistical Sampling

This cooperative state/federal project was designed to obtain fish and invertebrate species length-frequency measurements and fishing trip characteristics (gears used, duration, effort, area fished, etc.) directly through dockside interviews with commercial fishermen. These data were also used to cross-check information reported in the marine fisheries trip ticket program. The commercial port samplers were located in Pensacola, Apalachicola, Cedar Key, St. Petersburg, Port Charlotte, Marathon, Tequesta, Melbourne, and Jacksonville. During 2002, the port samplers measured 80,666 organisms (fish and invertebrates) from 1,207 trip interviews. In addition, field staff involved with sampling recreational fisheries (including head boats) provided over 46,783 lengths and/or weights of fish during 2002. On selected species [primarily reef fish (e.g., groupers, snappers, porgies); pelagics (e.g., mackerels, wahoo); and inshore species (e.g., sciaenids)], the port samplers and recreational fisheries samplers (with the permission of the anglers) take hard parts (primarily otoliths) for age determination. Over 9,006 otoliths or spines were sampled during 2002. On occasion, biologists sample gonads of selected species (mostly from at-sea sampling activities), take additional measurements for use in developing conversion factors, and take tissue samples for mercury and DNA assays. More than 2,787 tissue samples were collected for Mercury testing whereas 1,522 tissue samples were sampled for genetic analysis. Demand for gonad tissue was low: 21 tissue samples were obtained from recreational anglers. The port samplers and head boat samplers were occasionally tasked with at-sea sampling duties or additional duties as required.

Recreational Surveys, License Monitoring, and Statistics

The FWC issued Saltwater Fishing Licenses and computerized all license information. For recreational landings estimates and other types of analyses, data from the NMFS MRFSS was utilized. Florida conducted its portion of the MRFSS survey on both the Atlantic and Gulf of Mexico coasts, and over 32 samplers were employed at field stations around Florida including Jacksonville, New Smyrna Beach, Melbourne, Tequesta, Miami, Marathon, Port Charlotte, St. Petersburg, Cedar Key, Apalachicola, Destin, and Pensacola. Two researchers in St. Petersburg provided coordination for the field sampling and quality assurance for the product. Dockside/shore sampling during 2002 exceeded the base level of sampling normally conducted by the MRFSS for all modes of fishing in Florida. In 2002, we provided a total of 22,221 angler interviews for the Atlantic Coast of Florida (base quota for interviews was 11,498; an increase of 1.93 over base). On the Gulf Coast in 2002, we interviewed a total of 28,114 anglers [base quota for interviews (including 6X for charter boat surveys) was 20,577; an increase of 1.37 over base]. We obtained 39,306 records of available catch of which 31,401 fish caught by recreational anglers were measured for length and weight. The Fisheries Dependent Monitoring

Group also participated in the NMFS Beaufort Laboratory Head Boat Survey and had two samplers (Naples to Cedar Key and Miami to Jupiter) dedicated to this logbook and dockside-sampling program.

Stock Assessment and Population Modeling of Florida's Inshore Species

In April 2002, the assessment group released its annual trends report. This report summarized available commercial and recreational landings, fishing effort, fishery catch rates, fishery-independent sampling effort, and catch-success rates for 133 species/groups during 1991-2001. Detailed narratives were provided on the biology, fishery, and past assessments for 48 popular species in Florida. The assessment group developed stock assessments for bluefish, weakfish, common snook, red drum, Florida pompano, stone crab, and blue crab in 2002. These assessments were made using a variety of analytical methods including age-structured models such as tuned sequential population analysis, separable virtual population analyses, non-equilibrium surplus production models, and modified De Lury depletion models.

Members of the group continued to supply technical advice to other researchers in and out of the FWC and participated on graduate student committees. Members of the assessment group served on several state and federal committees charged with reviewing assessments of marine species in the Gulf of Mexico and along the Atlantic Coast. In 2002, the group participated in the South Atlantic Fishery Management Council's Snapper-Grouper Assessment Group meeting in Jacksonville, the ASMFC Weakfish Technical Committee meeting in May, an ASMFC Atlantic Menhaden Technical Committee in May, and a workshop on data poor assessments for the Gulf of Mexico Fishery Management Council. Presentations describing the findings of the Mackerels Stock Assessment Panel and the Coastal Pelagic Stock Assessment Panel were prepared and given to the Council's Socio-Economic Panel.

Fisheries Stock Enhancement

Stock enhancement of finfish continued to focus on red drum (*Sciaenops ocellatus*) and common snook (*Centropomus undecimalis*) while molluscan enhancement projects targeted queen conch (*Strombus gigas*).

Project Tampa Bay was designed to determine the most cost-effective size hatchery-reared red drum to release to have the desired impact on the fishery. The experimental design was intended to answer the questions of size-at-release, season of release, and release habitat as well as improve the catch rates of red drum by recreational anglers by 25%. In 2002 (the third year of releases) more than 2.33 million fish were released. Releases are scheduled to continue through 2004, and assessment of the impact as well as cost-effectiveness analysis will continue.

A pilot project to develop and evaluate release and sampling strategies for common snook in Sarasota Bay and southern Tampa Bay, begun in 1996, continued through this reporting period. This project is a partnership between Mote Marine Laboratory, the NMFS, and FWC. More than 44,000 hatchery-reared snook have been released, the majority in Sarasota Bay. The goals of this project are similar to the red drum project described above.

The queen conch restoration project, located at the FWC Keys Marine Laboratory, continued through this reporting period. This project, begun in 1990, was designed to assist with rehabilitation of Florida's queen conch stock. Initially, hatchery-reared animals were released in the wild. Currently, wild sexually mature adults are transplanted from near-shore non-spawning populations to the offshore spawning aggregations. Additional information on this project can be found in the South Florida Regional Laboratory portion of this report.

Ecosystem Assessment & Restoration

Environmental Monitoring & Assessment

A statewide estuarine monitoring initiative known as IMAP (Inshore Marine Monitoring and Assessment Program) began sampling in summer 2000 and is funded by the EPA through 2005. IMAP builds on the EPA's Environmental Monitoring and Assessment Program (EMAP) to allow a statistically-valid assessment of ecological condition in Florida's nearshore waters using a set of physical, chemical, and biological indicators. Florida's effort is a single component of a nationwide assessment initiative known as the National Coastal Assessment. These indicators include water quality measurements, fisheries, macrobenthos, and submerged aquatic vegetation community structure, contaminants in sediment and fish tissue, and presence of heterotrophic dinoflagellates in sediments. Preliminary results for 2000-2002 IMAP sampling were summarized in IMAP Annual Reports which are available on the FMRI web site (floridamarine.org).

Coral Reefs & Hardgrounds Monitoring & Assessment

The seventh annual sampling of 43 coral reef sites between north Key Largo and Tortugas Banks was conducted as part of the Florida Keys National Marine Sanctuary Coral Reef Monitoring Project. Significant declines in relative percent coral cover were documented in 1997 and 1998; however, coral cover and species diversity has remained relatively stable since 1999. In 2002, additional sampling protocols were instituted at nine sites to better elucidate cause and effect relationships. Expansion of the Coral Reef Monitoring Project into Broward, Dade, and Palm Beach counties was proposed through FDEP. Eight sites were sampled during 2002 in Dry Tortugas National Park. Coral cover and species diversity was relatively high at several reefs; however, there was no sign of recovery of staghorn coral west of Loggerhead Key. Many colonies of the brain coral *Colpophyllia natans* had been decimated at Bird Key Reef since the prior year's sampling. *Acropora palmata* (inhabiting only one site in Dry Tortugas) appeared to be declining, possibly from a form of disease.

The FMRI provided input and review of monitoring for the Gulfstream pipeline hardbottom habitat mitigation projects in Tampa Bay and offshore in the eastern Gulf of Mexico. The FMRI was subrecipient of funds through the Florida State University from the Gulf of Mexico Fishery Management Council to evaluate the status of six sites in the Florida Middle Grounds studied in the early 1970s. An unusual water column event (referred to as "Blackwater") occurred in spring 2002 on the Gulf of Mexico side of the Keys. High densities of diatoms and phytoplankton were associated with the water mass. Coincidentally, summer sampling documented coral cover loss at two sites within the discolored water mass mapped by satellite imagery. The FMRI coral staff provided technical expertise for review of permit requests for beach renourishment, channel dredging, gas pipelines, and fiber optic cables on the Florida East Coast.

Aquatic Health

The Aquatic Health Group monitored the health of marine fishes throughout the state of Florida. In 2002, 1,444 fish were evaluated for abnormalities, parasites, and disease conditions. Seven hundred and fifty-eight of those fish were red drum evaluated for selected health criteria as part of the multi-disciplinary project, the Project Tampa Bay. Preliminary results suggested that stocked fish resemble wild fish in parasite prevalence and condition factor after release.

The most common species evaluated during the year were red drum, striped mullet, pinfish, and hardhead catfish. The AHG received and responded to 1,050 calls statewide marine fish kill hotline (1-800-636-0511) in 2002. Ninety-one percent of those callers reported fish kills, fish with parasites, other aquatic mortality and disease events, or requested information. Twenty-seven fish kills were investigated by AHG and were primarily related to low dissolved oxygen (40%) and red tide (34%), an estimated 211,516 fish were affected.

Harmful Algal Blooms (HAB)

The Red Tide Monitoring Program, MERHAB 2002: Eastern GOMx Sentinel Program, ECOHAB Grants and Task Force contracts continue to be the primary focus of the HAB Group. The Gulf of Mexico has a long history of HAB events. Of the 5,000 known species of phytoplankton in the world, about 100 are toxic. Although roughly half of these occur in the Gulf of Mexico, *Karenia brevis* has been responsible for most HAB events along the Gulf Coast. For at least the last 50 years, *K. brevis* red tides have been concentrated along the West Coast of Florida. As a consequence, HAB events adversely affect commercial and recreational fishing, tourism, and valued habitats, creating a significant impact on local economies and the livelihood of coastal residents. Monitoring of *Karenia brevis* and other potential HABs in Florida waters increased this year due to environmental concerns in Bishop Harbor and Piney Point as well as puffer fish poisonings from the Indian River Lagoon and the association with *Pyrodinium bahamense.* Due to the latter event, HAB staff worked with the FDA to implement a paralytic shellfish poisoning (PSP) monitoring program. An ECOHAB grant was funded for studying *Pyrodinium* and puffers. Grants were also awarded to monitor ballast water to address the possible introduction of invasive HAB species in the Gulf of Mexico.

The FMRI-coordinated volunteer sampling program improved HAB monitoring around the state. Volunteers submitted over 900 fixed water specimens. Volunteer and state monitoring also led to the isolation of *K. brevis*-like clonal cultures. Staff used these isolates for toxin, genetic, and life cycle analysis. This year, aside from the ECOHAB cruise samples and monthly transects, routine live samples, from state agencies, numbered nearly 1,000. We continued the isolation of dinoflagellate cysts from sediments to aid in *K. brevis* life cycle work.

In 2002/2003, there were sustained red tide blooms in both Northwest and Southwest Florida. These led to long-term shellfish bed closures until the brevetoxin levels in the sampled shellfish meats were

below FDA standards. In order to protect public health, over 100 mouse bioassays were conducted on submitted shellfish meats. Using *in vitro* methods, our labs analyzed over 5,000 water samples, marine tissues, as well as sediment and sea grass samples. Aside from red tide, we investigated other microalgal or phytoplankton bloom formations and events related to possible HAB poisonings, marine mortalities, fish kills, or lesioned fish. The accessibility of data among colleagues, collaborators, and the public has been a long-term goal of ECOHAB, MERHAB, and HABSOS. To this end, work continued on the Historical Red Tide Database. It was cleaned up and restructured. Work was completed on the second edition of the CD and distributed to interested parties. HAB outreach continued this year, largely with improvements to the "Red Tide Website," available at www.floridamarine.org. Among other things, it included the most recent maps of red tide cell (sample) counts from around the state and "Current Status Reports." Dr. Karen Steidinger organized and hosted the Tenth International Conference of Harmful Algal Blooms in October 2002. Over 800 HAB researchers from around the world attended the week-long conference held at St. Petersburg Beach. The FMRI HAB staff presented over 20 posters and abstracts as well as oral presentations. Manuscripts from this conference were prepared for publication. Colleagues visited our laboratory for training while others submitted samples for our analyses or interpretations.

The FMRI administered over two dozen contracts that were recommended by the Florida Harmful Algal Bloom Task Force. It included contracts for: increased survey work and toxin analyses; development of new toxin detection techniques; provision of nutrient analyses related to the ECOHAB project cruises; and evaluating the competitive ELISA versus the mouse bioassay for monitoring brevetoxin in shellfish.

Another continuing HAB project involved a monitoring laboratory operating at the St. John's River. The autonomous instrumentation-sensing platform, MERVIN (MERHAB Autonomous Research Vessel for *In-Situ* Sampling) is deployed there. It is now possible for anyone to access this platform, via an "800" number, for near real time water and atmospheric data. The MERHAB proposal was submitted and funded. Articles on the MERVIN project can be found on the following website: www.merhabflorida.org.

Habitat Assessment & Restoration

The FMRI habitat assessment projects seek to assess the ecological status of coastal fisheries habitats, evaluate trends in coastal ecosysem health, and identify physical and biological factors that influence coastal plant communities. Staff developed ecological and economical sound practices for restoring coastal habitats. Seagrass habitats are the current focus of study due to ongoing declines in distribution and abundance in many Florida estuaries. Although activities are conceptually divided between assessment and restoration, staff within this work group conducted research related to both topics.

Staff participated in habitat assessment research that are (1) assessing the status and trends of seagrass communities in the southeastern Gulf of Mexico, Tampa Bay, and Florida Bay, (2) measuring physical and biological characteristics of seagrass communities to assess ecosystem health, (3) determining the role of the pathogenic slime mold *Labyrinthula* on seagrass mortality, (4) developing a monitoring plan for the threatened seagrass species *Halophila johnsonii*, (5) developing methods to measure those characteristics (ecoindicators) that may be used to document status and trends in the ecological and physiological condition of seagrass habitats, and (6) characterizing benthic habitats in the Tortugas Ecological Reserve.

Staff members participating in habitat restoration research were (1) evaluating newly-developed techniques for mechanically transplanting seagrasses, (2) developing techniques to enhance the recovery rates of propeller scars in turtlegrass meadows, (3) developing tissue-culture techniques to produce seagrass planting units in the laboratory, (4) assisting resource managers in evaluating restoration/mitigation sites and designing restoration plans.

Endangered & Threatened Species

Marine Mammals

Manatee Mortality. During 2002, a total of 305 manatee mortalities were recorded by the FMRI. Of the 305, 31% of the manatee deaths (95) were a result of collisions with water craft. As in years past, the majority of deaths resulted from impact with water crafts and not by being cut by propellers. Deaths resulting from entrapment in water-control structures and navigational locks totaled five. Deaths categorized as "other human-related" accounted from nine deaths during 2002. Human-related deaths are those that are caused by entanglement in man-made structures (i.e., monofilament line, crab traps, etc.), entrapment in culverts and pipes, ingestion of foreign materials, trauma from unknown origin, and others. Deaths of

perinatal manatees (53) comprised 17% of the deaths. Natural-related deaths are those attributed to cold stress, red tide toxicity, infectious and non-infectious diseases, birth complications, and natural accidents and catastrophes. Natural-related deaths (59) accounted for 19% of the total manatee mortalities reported. The majority of carcasses in the undetermined category are so badly decomposed that a cause of death cannot be determined. Deaths in the undetermined category comprised 65 of the total 305.

Manatee Population Monitoring. Three synoptic surveys were conducted in January by FWC staff and partners. Synoptic surveys are two-day winter aerial and ground surveys which encompass all of the known manatee winter habitats in Florida. The second survey, conducted January 21-22, 2003, was the second highest statewide count since the survey began in 1991, with a total of 3,113 manatees sighted. Manatees were counted by 22 teams totaling 28 observers, and 16 pilots from 14 state, federal, and county agencies, as well as research laboratories and universities.

Ecology and Migration. Researchers place satellite and radio transmitters on manatees and attach a floating transmitter housing to the belt. Signals from the satellite transmitters are processed and delivered to FMRI daily via the Internet. Research teams working in the field use the satellite locations to determine general areas where manatees are located and then use the radio signals to find the individual manatees. This year, six state-of-the-art GPS tags were deployed at Apollo Beach. These tags are providing a large volume of movement data on a fine spatial and temporal scale and their use promises to open up a new window into the study of manatee behavior.

Life History & Biology. The FMRI partners with the USGS Sirenia Project and Mote Marine Laboratory to co-manage photo-identification catalog data collected in the southeastern United States. The FMRI had cooperative agreements with Lee County Parks, the National Park Service, the U.S. Army Corps of Engineers, and others to assist with manatee-related photographic and environmental data collection. The West Coast portion of the catalog included more than 9,000 sighting records representing 588 fully photo-documented, scarred manatees.

Geographic Information Systems. Staff working on the MMGIS continued to create numerous manatee spatial data layers including carcass recovery sites, aerial survey locations of manatees and right whales, and locations of animals tracked by satellites. This past year, staff developed or modified computing processes needed to generate data from newly-deployed GPS/PTT satellite tags.

Right Whales

The FMRI conducted aerial surveys of Florida and adjacent waters since 1991 to monitor the seasonal occurrences of right whales. This effort focused on alerting vessels to the presence of right whales within the southeast critical habitat. Right whales are individually distinct, and using photo-identification techniques, researchers can compile life histories of individual whales. All data collected during aerial surveys are incorporated into the FMRI's Marine Resource Right Whale Geographic Information System.

Marine Turtles

Salvage, Rescue, & Necropsy. The FMRI coordinated the Florida portion of the Sea Turtle Stranding and Salvage Network (STSSN), an 18-state program monitored by the NMFS. A total of 1,276 sea turtle strandings were documented in Florida during 2002. By species, there were 685 loggerheads (*Caretta caretta*), 394 green turtles (*Chelonia mydas*), 108 Kemp's ridleys (*Lepidochelys kempii*), 28 hawksbills (*Eretmochelys imbricata*), 31 leatherbacks (*Ermochelys coriacea*), and an additional 30 sea turtle strandings not identified to species.

Population Monitoring. The FMRI monitored sea turtle populations by recording numbers of nests made on Florida beaches, a number proportional to the number of breeding females in the population of each species. Nesting surveys were coordinated through two programs: (1) a statewide survey, which is broad in geographic and seasonal coverage but limited in standardization and detail, and (2) an index survey which is more detailed, has greater consistency, but was more limited in geographic and seasonal coverage. In 2002, 180 survey areas were monitored, comprising 1,284.5 km of beaches. This program documented a total of 62,905 loggerhead nests; 9,201 green turtle nests; and 596 leatherback nests.

Ecology, Life History, Migration. Most research on marine turtles has been conducted on the nesting beach although turtles spend only a small fraction of their lives there. Recovery efforts depend on a broad knowledge of population biology, life history, ecology and migrations. Complicated turtle management efforts necessitate both long-term and international approaches to conservation. Ongoing projects in the Western Gulf Stream, Florida Bay, Bermuda, and Panama involve capturing live animals at sea. Studies targeted four species of sea turtles and

several life history stages, addressed population structure (including natural sex ratios), growth rates, genetic identity, life history, health, diet, habitat preference, and migration.

In July through September 2002, the FMRI captured and released 50 post-hatchling loggerheads in the western Gulf Stream off central Florida. Approximately 10% of these turtles had evidence of tar in their mouths. These data helped describe the importance of certain oceanographic surface features to young sea turtles and helped researchers understand threats to sea turtle survival.

As part of a cooperative research project with the government of Bermuda, 85 immature green turtles were captured with nets, tagged, measured, and released in 2002. Over 2,000 green turtles were tagged as part of this project, ongoing since 1968. The DNA sequence data have shown that one-third of the population of immature green turtles that inhabit Bermuda waters was derived from Florida nesting beaches. Captures of conventionally tagged turtles from this project have documented migrations to feeding grounds in Nicaragua, Cuba, the Dominican Republic, Panama, Venezuela, St. Lucia, and Grenada. This showed the need for international cooperation in research and management of this endangered species.

Information Science & Management

Coastal & Marine Resource Assessment (CAMRA)

Projects of interest:

- Seagrass Conservation Plan & Assistance – through standardization and adoption of best management practices at the state level, local resource managers are being given guidance and assistance to assess the status of seagrass and implement appropriate protection measures tailored for their locality.
- Benthic Habitat Classification Scheme – in coordination with other agencies statewide, staff are creating a statewide habitat classification system that will provide common language for description and consistent inventory reporting of Florida's estuarine and marine benthic habitats.
- Marine Recreational Fishing – aims to identify the portion of the population that participates in the marine recreational fishery. Staff examined how the relationship between the entire population and fishery participants changed through recent history to develop a predictive model that will provide insight to possible changes in recreational fishing, given various future scenarios.
- ArcGIS Internet Map Server – a map server, http://ocean.fmri.usf.edu/mrgis/viewer.htm was developed to service many of the GIS layers stored in the FMRI Marine Resource GIS.
- Habitat Suitability Modeling – continued to use FIM fisheries data and various statistical programs to standardize CPUE for development of predictive GIS models showing distribution of spotted seatrout, pinfish, and bay anchovy by life stages in Tampa Bay and Charlotte Harbor.
- Recreational Boating Characterization – continued working with University of Florida to characterize boating activities to understand the impacts that boating had on the environment and the impacts that development, population growth, and management actions have upon boating.
- Management Characterization – developed a database and web-based analysis tools that act to characterize management in the Charlotte Harbor region.
- Mercury – continued to support the Florida Departments of Health and Environmental Protection with the collection of marine fishes for mercury analysis and interpret analysis for possible DOH health advisories.

Specimen Information Services

SEAMAP larvae were accessioned into the collections; over 300 scientific and educational specimen loan requests were received and provided; more than 400 requests during 2001; 3,689 lots of invertebrates; 502 lots of fishes; and 34,725 lots for information and requests for assistance were answered; and at least 150 public outreach activities were completed. SEAMAP personnel participated in three SEAMAP or SEAMAP related ichthyoplankton cruises.

Members of the SIS group provide QA/QC services to researchers in the FWC and provide technical advice and assistance to researchers in and out of the FWC.

Data Access

The data access group continued its primary mission of designing and implementing the conversion of all the corporate FMRI databases into a common framework that will ultimately allow access by any interested researcher. Important work included the following: (1) created online metadata catalog system to allow all FWC staff to access information on Gulf-wide corporate data sets; (2) shared Gulf-wide commercial fisheries data with other state and federal agencies on a monthly basis; (3) modified harmful algal bloom historical database, GIS application, and CD-

ROM product. This work was used as a foundation for the creation of NOAA's Gulf-wide HABSOS Internet Map Server application; (4) created new SEAMAP ichthyoplankton cruise application to enter and track Gulf biological samples from collection through identification and cataloging.

SOUTH FLORIDA REGIONAL LABORATORY

The spiny lobster program continued to monitor landings and other important fishery components for both commercial and recreational spiny lobster fisheries. Commercial lobster landings were 4.6 million pounds during 2002-2003 fishing season, up from last year's 3.1 million pounds but still well below the long-term average of 6 million lbs. Recreational lobster license holders returned nearly 2,000 survey questionnaires. Responses indicate that 340,000 lobsters were landed during the first month of the regular season. A creel survey was designed to ground truth the mail surveys. Recreational harvesters captured on-average the same sized lobster as do commercial fishers. Interestingly, harvest reported via mail surveys appeared to be slightly greater than observed in the creel survey.

The sixth year of monitoring spiny lobster populations within the marine reserves of the Florida Keys National Marine Sanctuary was completed. The abundance of legal-sized lobsters progressively increased inside the reserve relative to unprotected areas. Additionally, the Western Sambo Ecological Reserve showed a steady increase of large male lobsters indicating that some long-term retention of lobsters within the reserve occurred. Males in excess of 100 mm carapace length comprised approximately 10% of the offshore population inside the reserve.

The queen conch program implemented a stock recovery program by transplanting conch from nearshore sites to offshore breeding aggregations. With the aid of volunteers, over 900 conch were transplanted to offshore aggregations at Looe Key and another 500 conch to aggregations at Eastern Sambo. Monitoring of these transplants has shown that after about six months offshore, the transplanted conch began reproducing. Monitoring continues of larval, juvenile, and adult queen conch abundance throughout the Keys in order to determine the effectiveness of this restoration strategy.

Efforts are shifting in two areas. Larval recruitment processes and oceanographic processes to determine the transplantation sites that are likely to maximize larval recruitment back into the Keys are being explored. A grant was received from the EPA whose objectives will be to determine the causes for the lack of reproduction in the nearshore populations. The grant will be conducted in partnership with researchers at the University of Florida and will focus on endocrine disruption.

OFFICE OF ENVIRONMENTAL SERVICES

Brian Barnett, Interim Director

The Bureau of Protected Species Management (BPSM) is the management component of the FWC's marine mammal and marine turtle programs. The BPSM 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

Marine Turtle Protection Program Staff work for the protection of threatened and endangered marine turtles and their critical nesting beaches, developmental habitat, and foraging habitat along Florida's coast. The state is listed as the lead or a cooperating agency for the implementation of approximately 91 tasks identified in the USFWS and NMFS recovery plans for the five species of marine turtles that occur in Florida. Staff participated in development of the scientific information necessary to guide recovery efforts (research), in review of ongoing and proposed human activities that could impact marine turtles and their nesting and foraging habits (management), and in public education about marine turtles.

Accomplishments

- The marine turtle license plate went on sale in February 1998. To date, approximately 79,893 plates have been sold, generating a total of approximately $4,055,717 in revenue for the state (including vehicle registration fees and renewals).
- Bureau staff managed 13 marine turtle grants, including review and approval of deliverables. Staff also assisted the FMRI in soliciting and reviewing marine turtle grant proposals for 2003-2004.
- BPSM issued approximately 159 marine turtle permits during 2002. Oversight of this program included numerous meetings with permit holders in the field to provide training and technical advice, participation in training workshops, and revision of the FWC's marine turtle permit holder guidelines.
- Staff continued oversight on a $500,000 grant from

the USFWS to Volusia County to develop off-beach parking. Staff monitored captive facilities in the state that rehabilitate marine turtles or hold turtles (loggerhead and non-releasable turtles only) for educational purposes. Staff inspected and approved a new rehabilitation facility in Volusia Country during 2002. Staff participated in the annual Rehab Workshop held at Hidden Harbor Sea Turtle Hospital.

- The Bureau of Protected Species Management continued work with the USFWS on a grant-funded project to minimize lighting impacts to marine turtles. An OPS biologist managed the hatchling disorientation database, contacted local government, and helped formulate appropriate actions to resolve problem lights on Florida's nesting beaches.
- Technical expertise was provided on marine turtle protection during review of the 196 FDEP and other state permits. Staff attended numerous meetings with other agencies and applicants to discuss projects and minimization of impacts to marine turtles. Staff participated in design, implementation, and review of monitoring to assess the impact of permitted activities on marine turtles, their nests, and hatchlings.
- Staff worked with FDEP on development and implementation of updated standard conditions for marine turtle protection during beach cleaning and other special events. A meeting was co-hosted with FDEP for beach cleaners and concessionaires to discuss these conditions.
- Staff participated in a number of educational meetings designed to increase protection for Florida's sea turtle. Staff assisted in the 2002 International Sea Turtle Symposium held in Miami, Florida, where a workshop on lighting impacts was co-hosted. Nest Signs were distributed to designate and protect sea turtle nests.
- A talk was presented during the Florida Beach and Shore Preservation Society's meeting on sea turtle nesting on nourished beaches. Posters were distributed at the 2002 International Sea Turtle Symposium on nearshore hard bottom which is important foraging habitat for juvenile green turtles.
- Staff participated in the FDEP's Coastal Engineering and Technical Advisory Committee development of *Environmental Design of Beach Nourishment Projects in Florida*.
- Staff participated in the Archie Carr Working Group.
- Staff participated in an agency issue team on shorebirds and beach nourishment.
- Staff hosted the 2002 Marine Turtle Permit Holder Workshop, co-sponsored by Mote Marine Laboratory for more than 120 Marine Turtle Permit holders and volunteers.
- Staff participated in various educational activities including development of brochures for different topics involving marine turtles; distribution of brochures to local governments, permit holders, conservation groups, and citizens; distribution of informational booklets; responses to numerous requests for information from interested parties, attendance and participation in coastal-related conferences and forums; participation on committees on marine turtles and their nesting habitat; presentation of slide shows and lectures to groups; updating of the existing web site; and general promotion of the program and its fund-raising activities. Staff developed twelve, colorful marine turtle decals and three posters that depict species that occur in Florida and their marine habitat. Proceeds from the sale of decals, primarily associated with boat registrations, and the sea turtle license plate are used to help fund the agency's marine turtle program.

Manatees

The Bureau of Protected Species Management implements many tasks of the Florida Manatee Recovery Program. The activities are focused on five program areas: (1) development and implementation of county-based manatee protection plans (MPP); (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 manatee habitat, particularly warm water refuges and seagrasses; and (5) outreach activities to provide education and information to the public.

Accomplishments

- The Manatee Plan and Permit Review Section continued the law enforcement outreach by providing laminated speed zone maps, educational materials, and presentations to district meetings and the state law enforcement academy.
- West Coast USCG facilities received training on manatees from FWC and the USFWS. Presentations were made across the state to local FWC offices, USCG Auxiliaries, local power squadrons, and volunteer patrols.
- Staff reviewed and prepared comments on the Volusia and Clay counties' manatee protection plan drafts. Sarasota County applied to receive additional funding in early 2002 to complete the remaining portions of the plan.
- Staff reviewed 362 projects and offered biological

opinions to reduce or eliminate potential negative effects of proposed activities. BPSM reviewed approximately 80% of requests for agency comments; 53% required standard conditions. Six percent were critical reviews that could significantly impact manatees or their habitat.

- Changes to the Brevard County rule were approved by the Commission and adopted. Adoption was delayed by three rule challenges pending before the state division of administrative hearings. The final order was issued April 17, 2002, and dismissed all of the challenges. Two appeals were subsequently filed with the Fifth District Court of Appeals; however, the appeals will not delay the rule from going into effect.
- Staff worked on a zone rule proposals for the Lemon Bay, Turtle Bay, and Peace River portions of Charlotte County. The FWC adopted the zones in September 2002.
- A notice of rule development for manatee protection zones at Warm Mineral Springs and City Island Grass Flats areas of Sarasota County were published in February 2002. The FWC adopted the zones in September 2002.
- A notice of rule development for the Blue Waters area of the Homosassa River in Citrus County was published in February 2002. The FWC adopted the zones in September 2002.
- A notice of rule development for the Jungle Trail Narrows and Vero Beach Power Plant areas of Indian River County were published in February 2002. The FWC adopted the zones in September 2002.
- Separate notices of rule development for the Alafia River in Hillsborough County and Terra Ceia Bay in Manatee County were published in February 2002. The FWC adopted the zones in September 2002.
- A notice of rule development for the DeLeon Springs and Lower Halifax River areas of Volusia County were published in February 2002. After receipt of new aerial survey data, staff were directed to reassess the entire countywide rule. Surveys began in July 2002 and will continue through July 2004.
- A notice of rule development for the Crossroads area of Martin County was published in February 2002. The FWC decided not to propose any amendments to the existing zones in May 2002.
- A notice or rule development for the North Fork of the Loxahatchee River in Palm Beach County was published in February 2002. The FWC decided not to propose any amendments to the existing zones in May 2002.
- Permits continued to be issued for commercial fishing and professional fishing guide activities in Volusia, Brevard, Indian River, St. Lucie, Lee, and Collier counties. In April 2002, one professional fishing guide permit was revoked for multiple citations.
- In May 2002 a permit was issued to allow Mote Marine Laboratory to continue research on manatees and seagrasses in Pansy Bayou. Several permits were issued to allow residents access to waterfront property within various limited-entry areas around the state.
- Contractors and sign work were supervised in Clay County, Doctors' Lake in Duval County, Lake George in Putnam County, and in Collier County.
- Staff continued to participate in the USFWS's Warm-water Task Force to assess the importance, effects, and long-term stability of industrial, natural, and non-industrial warm water sites to manatee populations. The task force provides a forum for industry, government, and public representatives to share current and future concerns and ideas regarding long-term strategy for managing warm water refugia.
- Staff continued to provide *Way of the Manatee* educational kits to teachers in Leon and surrounding counties. The kits were developed to provide a free resource to teachers on a loan basis so that they may educate their students about manatees, habitat protection, and the environment.

FLORIDA DEPARTMENT OF AGRICULTURE & CONSUMER SERVICES

Division of Aquaculture

Bureau of Aquaculture Development

The bureau continued its commitment to encourage the development of aquaculture industry 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 bureau conducted numerous activities including regulatory, administrative, advisory, and technical functions to promote the development of aquaculture in Florida and ensure that aquaculture operations are compatible with the Florida Aquaculture Plan, Aquaculture Certification Program, best management practices, resource management goals, and public health protection. The bureau is divided into four primary program components: (1) aquaculture certification program; (2) sovereign submerged lands aquaculture leasing program; (3) oyster culture and

shellfish resource development program; and (4) technical support (ombudsman, training, technical outreach, and grants).

The bureau was progressive in its support of aquaculture development as a practicable alternative to commercial fishing and conventional agriculture to foster economic development in rural and coastal communities. There were four core programs to offer unique and essential services to this emerging sector of Florida's agriculture community. These programs provided the regulatory framework for aquacultural operations, provided specific farming areas on state-owned submerged land, and provided responsible stewardship for Florida's natural aquatic resources. The Florida Agriculture Statistics Service (2002) reported sales of Florida aquaculture products exceeded $99 million in 2001, an increase of 16% over 1999.

Aquaculture Certification Program. Chapter 597, Florida Statutes (F.S.) established the Aquaculture Certificate of Registration to recognize aqua-farming businesses. Aquaculture 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 identified aquaculture producers as members of Florida's agricultural community and identified aquaculture products produced in the state.

Aquaculture certification is linked to the Best Management Practices Program. Best management practices were 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 bureau certified 1,066 aquaculture facilities during FY2002/2003. Shellfish producers (566 farmers) made up 53% of the certified farms, 219 producer ornamentals made up 21% of the certified farms, 210 food fish producers made up 20% of the certified farms, and the remainder produced live rock, alligators, and bait. Certified farms are found in 62 of the state's 67 counties; the highest number of certified farms occurred in Levy County (21%), Dixie County (10%), and Hillsborough County (10%).

Sovereignty Submerged Lands Leasing Program. The bureau is responsible for the Aquaculture Lease Program under the provisions in Chapter 253, F.S. The bureau administered 685 aquaculture leases containing about 1,675 acres and 79 shellfish leases containing about 1,114 acres. Aquaculture leases are located in Brevard, Charlotte, Dixie, Franklin, Indian River, Lee, Levy, Monroe, Pinellas, and Volusia counties. In response to statutory mandate, the bureau identified tracts of submerged lands throughout the state that are suitable for aquacultural development. Twenty special aquaculture use areas were identified by the bureau and authorized by the Board of Trustees in eight coastal counties including Franklin, Dixie, Levy, Charlotte, Lee, Indian River, Brevard, and Volusia.

The bureau provided technical assistance to the aquaculture industry and identified suitable sites for aquacultural development. The bureau evaluated proposed aquaculture use areas in Collier County. Staff, in cooperation with the Office of Agriculture Law Enforcement, conducted compliance inspections on aquaculture leases to determine compliance with lease agreements.

The Aquaculture Lease Program supported marine aquaculture in a very unique way, and the largest marine aquaculture business in Florida was production of hard clams on submerged land. The Florida Agriculture Statistics Service (2002) reported that hard clam sales accounted for $18.3 million in 2001. Farming hard clams is different from many other agricultural activities in that cultivation required the use of state-owned lands. Unlike many upland agricultural ventures that are conducted in 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. 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.

Oyster Culture and Shellfish Resource Development Program. Under the mandate to improve, enlarge, and protect the oyster and clam resources of the state, the bureau was actively engaged in enhancing shellfish resources and restoration of oyster reefs on public submerged lands. The bureau collected 81,134 bushels of processed oyster shell from processors in Franklin County and planted 340,368 bushels of public reefs. Oyster resource development projects were conducted in cooperation with local oystermen's associations in four coastal counties. A total of 195,600 bushels of live oysters were re-planted on public reefs in Franklin, Wakulla, Dixie, and Levy

counties.

Conserving Public Oyster Reefs. The bureau was involved in a unique project, applying its expertise and equipment to mitigate potential impacts on oyster resources in Apalachicola Bay. The department is in a joint project with the Department of Transportation and the Department of Environmental Protection to enhance and restore public oyster reefs that may be adversely affected during the St. George Island Bridge Replacement Project. The mitigation plan involves the restoration of oyster reef habitat by placing processed oyster shell and live oysters on designated reefs.

Technical Support Programs. Bureau staff provided substantial technical and administrative support for aquacultural operations through site visits, compliance inspections, and workshops. Staff conducted more than 2,000 site visits and compliance inspections to assist aqua-farmers and to ensure compliance with best management practices.

Bureau staff conducted a water quality study to evaluate the effectiveness of best management practices. Thirteen fish farms voluntarily participated in the two-year study of ground and surface water. Analyses included nitrogen, phosphorous, and total suspended solids.

Staff conducted research to quantify the impacts of clam culture in the Alligator Harbor Aquaculture Use Area and on adjacent aquatic communities. The research objectives included developing baseline ecological data, sampling fish communities, analyzing benthic core samples; collecting physical and water quality data; and determining the quality and condition of seagrass habitats. Aerial photography will be used to delineate seagrass communities. These data will provide baseline information to evaluate changes that may occur as clam production increases in the aquaculture use area.

Additionally staff received funding to conduct three projects related to the aquacultural production of sturgeon. One of these projects involved the importation of non-native sturgeon eggs and fry to evaluate the potential for commercial sturgeon aquaculture in Florida. The results of this research is expected to provide the technology to rear young sturgeon to a size where they can be distributed to fish farmers so that they can assess the merit of sturgeon as an aquaculture product in Florida.

LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF FISHERIES
James H. Jenkins, 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 by replenishing and enhancing stocks and habitat. The mission is accomplished through the activities of the various programs within the Marine Fisheries Division. The programs are: 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 departments sets seasons and size and possession limits, restricts fishing gear use, or uses other means of protecting 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; and educates the public and promotes wise use of resources.

SHELLFISH PROGRAM

The Marine Fisheries Division continued its long-term fishery independent trawl sampling throughout coastal Louisiana. Data from these samples were used to set season frameworks for both the fall and spring inshore shrimp seasons and the winter offshore shrimp season. Additionally, these same data were used to recommend season extensions and special shrimp seasons.

Shrimp

In recognition of differences in shrimp recruitment, emigration, and growth patterns among Louisiana coastal areas, the department has managed the shrimp fishery in inside waters utilizing a shrimp management zone concept. First implemented in 1975, this zoning concept has provided the flexibility needed to create staggered opening and closing dates, season extensions, special seasons, and special gear seasons between shrimp management zones. A description of Louisiana's three shrimp management zones is as follows:

- Zone 1 – from the Mississippi/Louisiana state line to the eastern shore of South Pass of the Mississippi River.
- Zone 2 – from the eastern shore of South Pass of the Mississippi River to the western shore of Vermilion Bay and Southwest Pass at Marsh Island.
- Zone 3 – from the western shore of Vermilion Bay and Southwest Pass at Marsh Island to the Louisiana/Texas state line.

In September, the department conducted an analysis of Louisiana shrimp losses related to weather impacts, prices, volume, and value which was submitted to the Governor's office. This analysis examined Louisiana trip ticket records from 2000 through June 2002. The data indicated that 70% of the shrimpers who had sales in January to May 2002 were impacted, experiencing a 50% or more reduction in income from 2001 shrimp values. The primary factors influencing these economic losses were weather-related irregularities resulting in declines in recent Louisiana landings and price reductions which were largely due to annual increases in the levels of foreign imports of shrimp into the U.S. As a result of the analysis, the Governor's office was able to secure funding for low interest Small Business Administration loans to qualified shrimpers. Additionally, shrimpers were able to qualify for assistance with utility payments through the Louisiana Housing Finance Agency.

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 sampled within each zone are to be at sizes of 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 taken in trawl samples. Recommendations made 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.

Offshore Shrimp Season

The state's offshore territorial waters south of the inside/outside shrimp line from the USCG

navigational light off the northwest shore of Caillou Boca to the eastern shore of Freshwater Bayou were closed to shrimping on February 11, 2002, to protect significant numbers of over-wintering white shrimp smaller than legal size. A portion of these offshore waters south of the inside/outside shrimp line extending from the USCG navigational light off the northwest shore of Caillou Boca westward to the Atchafalaya River Ship Channel were reopened to shrimping on April 15, 2002. The remaining portion of these closed waters reopened to shrimping on May 16, 2002, in conjunction with the opening of the spring season in inside waters in Zone 2.

Inshore Shrimp Season

The year began with the closure of the open waters of Breton and Chandeleur sounds in Zone 1 on March 31, 2002, followed by their reopening on May 16, 2002. The inside waters of Zone 2 opened May 16, 2002, following by the opening of the remainder of Zone 1 on May 27, 2002. Zone 3 opened May 27, 2002. The spring shrimp season in the inside waters of Zone 2 was closed on June 28, 2002. On July 2, 2002, inside waters in the southern portion of Zone 1 south and west of the Mississippi River Gulf Outlet (MRGO) and south of the Intracoastal Waterway from its juncture with MRGO to its juncture with the Industrial Canal was closed to shrimping. The remaining portion of Zone 1 was closed to shrimping on July 15, 2002; however, the shrimp season was extended in a portion of Mississippi Sound as well as Breton and Chandeleur sounds. The spring season in inside waters closed in Zone 3 on July 15, 2002.

The 2002 fall shrimp season opened coastwide in Louisiana's inside waters on August 19, 2002. Zones 2 and 3 closed on December 17, 2002, and Zone 1 closed on December 31, 2002, with the exception of Breton and Chandeleur sounds which remained opened to shrimping to March 31, 2003.

According to the NMFS preliminary state landings statistics, 2002 Louisiana landings measured 65.6 million pounds (all species combined/heads off weight). Shrimp landings declined approximately 14 million pounds from the previous four-year average. Brown shrimp landings exceeded the long-term mean (1976-2002) by 1.3 million pounds while white shrimp landings fell below the long-term mean by approximately 600,000 pounds.

Crabs

Louisiana blue crab landings for 2002 totaled 53,996,488 million pounds, a record high. Stone crab landings for 2002 was 8,125 pounds, compared to 26,511 pounds the previous year.

A presentation on status of blue crab resource as determined from fishery independent samples was presented at the National Shellfish Association meeting and the Louisiana chapter of the American Fisheries Society meeting. The GSMFC Derelict Trap Task Force published *Guidelines for Developing Derelict Trap Removal Programs in the Gulf of Mexico*.

The foundation for a derelict crab trap removal program has been implemented. Legislation necessary to establish a program was developed by the Department and adopted during the 2003 general legislative session. Plans are being formulated for derelict trap sweeps in winter and spring 2004.

The Crab Task Force has continued to meet and address issues that confront the industry. Several legislative bills were introduced and adopted in 2003 that extended the time that escape rings must be left open and allowing crab fishermen to keep limited amounts of fish bycatch.

MOLLUSC PROGRAM

Oyster Seasons

Oyster areas in Louisiana are divided into public oyster seed grounds (known as seed grounds, seed reservations, and tonging areas) and privately-leased water bottoms. The public oyster seed grounds are managed by the department to provide seed oysters for transplant to leases. When a healthy supply of marketable oysters also exists on these grounds, harvest is allowed within a seasonal framework. Marine Fisheries Division biologists sample the public grounds on a monthly basis and perform a stock assessment each July in preparation for the upcoming season. Most seed grounds are opened each year, although some public areas are opened every other year depending on the health of the oyster population.

The 2002/2003 Louisiana oyster season on the public seed grounds south of the Mississippi River Gulf Outlet, the Bay Gardene, Hackberry Bay, and Bay Junop osyter seed reservations, and in the outside portion of the Atchafalaya-Vermilion Bay public seed grounds opened September 4, 2002. Included in the September 4 opening was the designated sacking-only area east of the Mississippi River, described as Lake Fortuna and Lake Machias to a line from Mazambique Point to Point Gardner to Grace Point at the MRGO. The public seed grounds north of the MRGO opened September 23, 2002. The above mentioned seed

grounds and reservations closed on April 1, 2003, with the exception of Bay Junop which closed October 4, 2002. The Louisiana Wildlife and Fisheries Commission extended the Bay Gardene season through May 15, 2003.

The Calcasieu Lake public tonging area was opened on October 15, 2002, and the Sabine Lake public tonging area was opened on November 15, 2002. Both areas closed on April 30, 2003. Sabine Lake is permanently closed to oyster harvest by the Louisiana Department of Health and Hospitals (DHH) due to poor water quality. Calcasieu Lake was opened and closed within the season framework by DHH based on the level of the Calcasieu River. During the 2002/2003 season (198 total days), Calcasieu Lake was open for oyster harvest 74% of the time.

Oyster production on the public seed grounds during the season was estimated at over 958,000 sacks of market oysters and nearly 197,000 barrels of seed oysters. The public accounted for 73% of the total sack production from public grounds in Louisiana, but the sack total was nearly 140,000 less than the previous season. Landings total for 2002 (a combination of landings from portions of the 2001/2002 and the 2002/2003 seasons) on public oyster grounds totaled nearly 7.5 million pounds of meat.

Oyster Leasing

Between January 1 and March 6, 2002, 51 new leases were issued for a combined acreage of 2,790. The Louisiana Wildlife and Fisheries Commission declared a moratorium on the issuance of new leased acreage on March 7, 2002, and this moratorium continues to be in effect. The request for a lease moratorium was made of the Commission by the Louisiana Department of Natural Resources in order to limit the state's liability for oyster damages as a result of coastal restoration efforts. In addition, no leases were auctioned during the year. Leased acreage totaled nearly 490,000 spread over 8,576 leases owned by 1,398 leasehold entities.

The Oyster Lease Survey Section continued to update the web page to better serve the public. The section's oyster lease GIS database is available for viewing on the Internet at http://oysterweb.dnr.state.la.us./oyster.

Additional Oyster Projects

The department continued to work toward the completion of the Louisiana Oyster Shell Recovery Pilot Program (NA96FK0188) funded by the NOAA. Comparison of alternative cultch materials was performed by placing sample plots of crushed concrete, limestone, and processed oyster shells in Lake Borgne. Collection of data on oyster recruitment to these cultch materials was performed in 2001 and final analysis yielded interesting results. Crushed concrete and limestone produced significantly more seed oysters than did oyster shell. Average size of seed oysters was significantly larger on crushed concrete and oyster shell as compared to limestone. In addition to cultch performance, the feasibility of recovering oyster shell from both in-state and out-of-state processors for use in future cultch plants was also studied. This project is scheduled for completion in 2003.

In September/October 2002 two strong tropical systems, Tropical Storm Isidore and Hurricane Lili, moved through coastal Louisiana and resulted in increases in oyster mortality on public oyster grounds located in the central portion of the Louisiana coast. Statistical comparison of pre- and post-storm samples indicated that some public seed grounds experienced a significant increase in oyster mortality following the storms. The Sister Lake Public Oyster Seed Reservation in Terrebonne Parish experienced the most severe effects as oyster mortalities increased nearly 35% in the two weeks after Hurricane Lili as compared to pre-storm levels. The storms caused a statewide harvest closure by the Louisiana Department of Health and Hospitals. An Executive Order was issued by Louisiana Governor Mike J. Foster to allow leaseholders a one-day opportunity to inspect their private leases during the closure.

FINFISH PROGRAM

The primary objective of the finfish program is to develop and maintain a database of scientific information that can be used to make rational recommendations for the management of coastal finfish stocks.

The recreational finfish harvest for 2002 was 10,499,445 fish weighing 22,121,082 pounds; which, for the twenty-two year period examined (1981-2002), ranked 2002 16th by number of fish and 9th by total weight. Total commercial landings during 2002 were 1,112,081,533 pounds or 18,084,763 pounds excluding menhaden. Menhaden make up anywhere from 95% to 99% of the annual commercial landings. When compared to 1981 through 2002, 2002 ranked 12th in total pounds landed and 22nd (last) when menhaden are excluded.

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 coastwide 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. The seine is 50' in length, 6' in depth and has a 6'x6' bag as an integral part of and midway the length of the net. The mesh size for this seine is ¼" bar, ½" stretched, Delta 44 knotless mesh. A gill net is used to sample juvenile, sub-adult and adult fish and provide information on relative abundance, year class strength, movement, and gonadal condition. The gill net is 750' in length, 8' in depth, and constructed of monofilament. The net is composed of five panels each of the following mesh sizes: (1) 150'x8', 1" bar, 2" stretched mesh, 0.4 mm diameter filament; (2) 150'x8', 1¼" bar, 2½" stretched mesh, 0.52 mm diameter filament; (3) 150'x8', 1½" bar, 3" stretched mesh, 0.52 mm diameter filament; (4) 150'x8', 1¾" bar, 3½" stretched mesh, 0.52 mm diameter filament; and (5) 150'x8", 2" bar, 4" stretched mesh, 0.52 mm diameter filament. A trammel net is used to provide information on relative abundance, standing crop, and movement. The trammel net is 750' in length, 6' in depth, and constructed of nylon. The entire net has a 2:1 sag, and the mesh sizes are as follows: inner wall – 1⅝" bar, 3⅝" stretched, number six twine; outer wall – 6" bar, 12" stretched, number nine twine.

Gill net samples are taken semi-monthly from April through September and monthly from October through March; trammel net samples are taken monthly from October through March, and seine samples are taken monthly from January through August and semi-monthly from September through December. Hydrological readings (conductivity, salinity, and water temperature) are taken each time a biological sample is taken. Samples are taken 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 area on a monthly basis to give the resource managers information as to the current condition of the resource. The pertinent life history for the important species is also used in developing analytical and predictive models. During calendar year 2002, 98% of scheduled Finfish Program samples were completed (seines-96%, gillnets-98.8%, and trammel nets-98.4%).

Finfish Stock Assessments

Division personnel updated stock assessments for black drum, mullet, southern flounder, and sheepshead in 2002. Not having sufficient information to directly estimate a conservation threshold for each species in Louisiana, a conservation threshold of 30% SPR was established by Act 1316 of the 1995 Regular Session of the Louisiana Legislature for black drum, sheepshead, southern flounder, and striped mullet. The 30% SPR appears to be adequate to maintain these stocks and prevent recruitment overfishing.

Black Drum

The results of YPR analysis indicate that if M=0.1 (the most conservative value within the range of estimates), the fishery prior to existing regulations (Act 1316) was operating above $F_{0.1}$ and below F_{MAX} with a yield of 92% of maximum, and SPR at 44%. An M of 0.15 or 0.2 would indicate a more lightly fished stock with yield being 66% to 45% of maximum and with SPR being 57% to 66%, respectively.

Southern Flounder

The results of YPR analysis indicate that for the years assessed (1994-2001) if M=0.5 (the most conservative value within the range of estimates), the fishery prior to existing regulations was operating between $F_{0.1}$ and F_{MAX} with yields of 93% to 95% of maximum and SPR at 28% to 30%. An M of 0.8 (the highest value within the range examined) would produce yields of 56% to 60% of maximum with SPR at 51% to 54%.

Striped Mullet

The results of YPR analysis indicate that if M=0.3 (the most conservative value within the range of estimates), the fishery prior to existing regulations was operating above $F_{0.1}$ and F_{MAX} with yield of 96% to 99% of maximum, and SPR at 30% to 37%. An M of 0.6 would indicate a more lightly fished stock with yield being 67% to 88% of maximum and with SPR being 61% to 73%.

Sheepshead

The results of YPR analysis indicate that if M=0.2 (the most conservative value within the range of estimates), the fishery in the years assessed (1994-2001) was operating well below $F_{0.1}$ and F_{MAX}, with yield of 34% to 81% of maximum, and SPR at 44% to 81%. An M of 0.3 (the highest value examined) would indicate a more lightly fished stock with yield being 0% to 52% of maximum and with SPR being 64% to 100%.

Sports Fish Restoration

In 2002, Louisiana used the marine share of its Sports Fish Restoration funds in five activities: (1) development of marine boating access for anglers, (2) finfish age and growth research (described under the research program), (3) continuation of a feasibility study that will enable the department to make sound and rational decisions on the renovation/construction of the Marine Fisheries Research Laboratory and accompanying building and site programs, (4) continuation of the Evaluating Sport Fish Use of Created Wetlands in the Atchafalaya Delta Project (contracted to LSU's Coastal Fisheries Institute), and (5) continuation of identifying essential fish habitats in Barataria Bay (joint program with LSU, CFI).

HABITAT PROGRAM

Artificial Reefs

The Louisiana Artificial Reef Program was established in 1986 to take advantage of obsolete oil and gas platforms which were recognized as providing habitat important to many of Louisiana's coastal fishes. Federal law and international treaty require these platforms to be removed one year after production ceases, at great expense to the industry. The removal of these platforms results in loss of reef habitat.

Since the program's inception in 1986, 31 different petroleum companies have participated in the program and donated the jackets of 164 structures. In addition to the material, the participating companies also contributed to Louisiana's Artificial Reef Trust Fund for operation, maintenance, and reef research. Since January 2001, 13 projects across the coast were completed.

Hurricane Lili, which occurred in October 2002, offered the program some unique opportunities when five platforms were toppled or damaged beyond repair. These platforms seemed to offer critical habitat for scamp and gag grouper off the Louisiana coast. Rather than remove this habitat at great expense to the operators of the platforms, they were instead allowed to remain on location as artificial reefs provided they were free and clear of all hydrocarbons and hazardous material and conformed to Coast Guard clearance requirements.

Southeast Area Monitoring and Assessment Program (SEAMAP)

SEAMAP is a state/federal/university program that collects, manages, and disseminates fishery-independent data and information in the southeastern United States. Louisiana participated in planning and resource surveys during the twenty-first year of this NMFS-funded cooperative project. Planning activities included identifying priorities for data acquisition, and coordinating Gulf-wide resource surveys by SEAMAP participants. The department also conducted summer (July), fall (September), and winter (December) sample surveys in the Louisiana territorial sea and nearshore EEZ from the Mississippi River to Atchafalaya Bay. These seasonal day-night surveys provide information on the abundance and distribution of critical life stages of major Gulf of Mexico species. Shrimp/groundfish and zooplankton communities were sampled, as were associated environmental parameters. Summer and fall surveys coincided with NMFS resource survey activity off the Louisiana coast.

Oil Spill Contingency Planning and Response

The Oil Spill Task Force focused on Natural Resource Damage Assessment (NRDA) activities and developing restoration plans during 2002. With other state and federal trustees, department representatives continued to develop a pilot plan for a regional restoration planning program for Louisiana that will provide a means to efficiently restore habitat and other natural resources injured as a result or small spills.

Pre-assessment data collection for NRDA was begun for five spills that occurred during 2002. These were:

- April – BP/Amoco pipeline spill in Little Lake in the Barataria Basin near Galliano
- May – Forrest Oil pipeline spill in the East Lake Palourde Field near Franklin
- August – Forrest Oil spill and fire resulting from a lightening strike on a tank battery in Magnolia Field near Pointe a la Hache
- September – Ocean Energy well blowout at North Pass of the Mississippi River near Delta National Wildlife Refuge and Pass-a-Loutre State Wildlife Management Area
- December – Hilcorp pipeline spill at Duck Lake in the Atchafalaya basin.

NRDA activities for other spills continued during 2002:

- State and federal natural resource trustees began restoration planning for an April 2001 Williams Petroleum pipeline spill at Mosquito Bay near Pointe au Fer.
- Restoration planning for the November 2000 T/V Westchester tanker spill in the Mississippi River is nearly complete. The focus of restoration for this spill is the area on and around Pass-a-Loutre State

Wildlife Management Area where a delta splay project will be constructed to compensate for marsh and other habitat injuries. Improvements also will be made to campground facilities on the WMA. Restoration will be implemented on completion of a consent decree.

- Chevron has enhanced a migratory bird sanctuary owned by the Nature Conservancy by a real estate purchase/donation and habitat improvement as a way of restoring the public resources lost because of a November 1999 pipeline spill near Grand Terre Island.
- A marsh creation project near the site of a September 1998 Equinox well blowout in Lake Grand Ecaille, Plaquemines Parish, has been selected for implementation pending insurance claims issues resulting from bankruptcy of the responsible party and completion of a consent decree.
- The habitat restoration/enhancement project for the May 1997 Texaco pipeline spill in Lake Barre, Terrebonne Parish, was implemented during 2000. The project, planting salt march vegetation on a CWPPRA-created area on East Timbalier Island, has established *Spartina alterniflora* marsh at low elevations. In September and October 2002, the island was substantially damaged by Tropical Storm Isidore and Hurricane Lili. The project will be evaluated in spring 2003 once the vegetative growing season has begun.
- Restoration planning activities for a June 1997 Apache Corporation pipeline spill in coastal Vermilion Parish continued in 2002.
- LDWF staff continued to work with other state and federal trustees to determine the extent of natural resources injuries resulting from the spill and develop suitable restoration alternatives for a Sonat well blowout in August 1997.

Statewide Hydrographic Monitoring

The LDWF, throughout an interagency agreement with the U.S. Geological Survey, continued to collect constant records of salinity, water temperature, tide level, wind speed and direction, and barometric pressure from a network of 16 stations located across coastal Louisiana. The data were collected in near real-time, and LDWF provided database management for the program. The data were used for managing marine fisheries and for investigating the extent and impact of a variety of environmental conditions such as tropical weather systems, drought, hypoxia, and red tides in Louisiana coastal waters. The data also were provided on request to other state and federal agencies, as well as university researchers. The near real-time data are available to the public via the internet through the LDWF website:

http://www.wlf.state.la.us/apps/netgear/index.asp?cn=lawlf&pid=884

or the USGS Louisiana Hydrowatch website:

http://www.dlabrg.er.usgs.gov/hydrowatch.htm

These data are posted in raw, unedited form within approximately four hours of the time the instrument measurement was recorded in the field. The data are updated frequently to provide the best, most accurate information possible.

The 2002 data were examined against long-term sets to determine variations in environmental conditions. The data indicated air and water temperatures were normal and salinity was slightly higher in Barataria Bay, Sister Lake, and Vermilion Bay and restored to full function by USGS field crews as environmental conditions allowed.

National Coastal Assessment

The department participated in the EPA's National Coastal Assessment program (formerly known as the Coastal 2000). This was the third sampling season of the five-year assessment. Personnel sampled 50 randomly-generated sites in coastal Louisiana for water quality, fish tissue, and sediment samples between July and September in the seven Coastal Study Areas. Data from the program will be used in comparative assessment of the health of the Gulf of Mexico waters.

Monitoring the Impact of Environmental Perturbations on Commercial Fishermen

The objective of the project (NA76FK0429) was to establish a data collection program capable of determining the impacts of adverse environmental and/or climatological conditions on the fishing patterns and subsequent income of commercial fishers and charter boats. This project is intended to provide a basis, over the long term, for an objective determination of the effects of such events on commercial fishing and allow integration of these events into the management regime for those fisheries. As it approaches its last year (June 2003), this project, funded under a grant from the NOAA, has met most of its objectives.

Project components included logbooks and environmental monitoring. Commercial harvesters and charter boats used logbooks that identify vessel movement, fishing location, and catch. The information

in the logbooks was compiled in a data set during 2002, and it is in the process of being analyzed by departmental economists and biologists for patterns and trends between environmental/climatological conditions and fishing patterns. The environmental monitoring segment gathered data about major climatological and/or environmental disturbances that affect the coast and emphasizes the hypoxic zone that develops each summer offshore from Jefferson, Lafourche, and Terrebonne parishes. The data will be analyzed to determine if changes in effort and fishing location can be documented in relation to know perturbations. Results of recent hypoxia samples can be viewed at the LDWF website:

http://www.wlf.state.la.us/apps/netgear/index.asp?cn=lawlf&pid=900

Members of this department continue to participate in various national and state level task force meetings on the subject of hypoxia in the Gulf of Mexico.

Gulf-Wide Information System (G-WIS)

The LDWF continued to develop a geographic information system (GIS) database of environmental sensitivity for the Louisiana Gulf Coast. Participants in this Minerals Management Service-funded project also included Louisiana State University Department of Geography and Anthropology, Louisiana Applied Oil Spill Research and Development Program (OSRADP), and Research Planning, Inc. Biological and environmental data were incorporated into ArcView shapefiles and databases that identify environmentally sensitive areas as an aid in planning activities in the coastal zone. Data production and analysis were completed in 2002. The data will be available to the public through OSRADP and the Louisiana Geographic Information Council in early 2003.

Seismic Monitoring

The seismic section was created in 1939 specifically to protect oysters, fish, shrimp, wildlife, and the associated habitat from injury due to seismic exploration. The department monitored 16 projects during 2002.

Caernarvon Biological Monitoring

Since 1991, the U.S. Army Corps of Engineers and the Louisiana Department of Natural Resources have operated a project for the controlled diversion of freshwater from the Mississippi River into the Breton Sound estuary. The diversion structure is located in the mainline Mississippi River levee at Caernarvon, Louisiana, and has a design flow capacity of 8,000 cubic feet per second (cfs). Caernarvon flowed at a rate of 3,500 cfs until January 28. The structure was opened and closed for pulsing experiments in February and March with the highest flow being 6,500 cfs for a five-day period. Flows were low during the spring and summer months, 500 cfs through June 6, and 1,000 cfs through August 5. The structure was closed from August 5 through November 20. It was opened to 2,000 cfs for one day and operated at 1,500 cfs until December 24. For the last week, the structure flowed at 1,000 cfs.

The Louisiana Department of Wildlife and Fisheries conducts extensive monitoring in the Breton Sound Estuary and is continuing a biological monitoring program to accurately measure effects of the project on fish and shellfish populations. Biological monitoring of the project has been undertaken by LDWF in three phases: (1) preconstruction (four years) to determine the conditions in the basin before the project went online; (2) postconstruction (four years), an intensive study of the biological effects of the diversion; and (3) long-term (46 years) to monitor the extended project effects. Marine Fisheries staff collect oyster, shrimp, crab, and finfish samples at stations situated from the diversion outfall to the Gulf. The seventh year of the long-term phase of the post-diversion monitoring program was in 2002. These studies gather both fishery dependent and fishery independent data.

Davis Pond Biological Monitoring

In 1998, Louisiana Department of Wildlife and Fisheries personnel began a three-phase sampling program venture spanning more than 50 years to monitor effects of the Davis Pond Freshwater Diversion Structure. The Louisiana Department of Natural Resources is leading the overall monitoring effort in coordination with the U.S. Army Corps of Engineers.

Work began on Davis Pond, in St. Charles Parish, in January 1997. The structure, capable of diverting up to 10,650 cfs of Mississippi River water into the Barataria estuary, opened on July 18, 2002. Flow in 2002 did not exceed the base rate of 1,000 cfs. In 2002, the structure was open for a total of 57 days. The Davis Pond project is designed to compensate for loss of freshwater, nutrients, and sediment by providing a controlled flow of freshwater from the Mississippi into a target area in the Barataria estuary to benefit thousands of acres of marshland.

To determine how fish and shellfish populations change, thousands of oyster, shrimp, crab,

and finfish samples will be taken at stations located from the diversion outfall to the Gulf. Commercial fishery harvests will also be monitored. In addition, LDWF biologists take water quality readings at 38 locations within the basin each month to provide a complete picture of how salinity and flow patterns are changing.

An extensive study of recreational fishing in the project impact area began in July 1999. This creel study covers the entire Barataria Basin, from the freshwater zones in the north to the Gulf barrier islands in the south. Species composition, sizes, catch rates, and amount and location of fishing effort are monitored, using point-access surveys and aerial counting/mapping surveys.

RESEARCH PROGRAM

Lyle S. St. Amant Marine Laboratory

The primary mission of the Lyle S. St. Amant Marine Biological Laboratory is to conduct research needed to manage the state's marine fisheries. It is the only laboratory facility on the Louisiana coast devoted to marine fisheries. However, as most of the biological and hydrographical research done in the coastal environment is useful in management of marine fisheries, another mission of the laboratory is to support and provide a base of operations for research and educational groups wishing to work in the area.

The Education Section of Fur and Refuge conducts the teacher workshop *Wetshop* at the laboratory each summer, and in conjunction with LSU Sea Grant and Agricultural Extension also conducts the award-winning *March Maneuvers* for 4-H students each summer. The marine laboratory also supports the monitoring of the Grand Isle Sulphur Mine Reef for the Louisiana Artificial Reef Program.

Age, Growth, and Fecundity

To increase accuracy of stock assessments, the laboratory has undertaken a long-term project to obtain age, growth, and fecundity data for important finfishes. Otoliths (ear bones) are collected by fishery independent sampling and by sampling from the commercial and recreational fisheries. These otoliths are sectioned and annular rings (indicators of age) are counted. Gonads are also collected and examined histologically to obtain data for fecundity indices.

During the 2002 calendar year, otoliths were collected from black drum (646 collected, 646 aged); striped mullet (309 collected, 168 aged); sheepshead (486 collected, 288 aged); gray snapper (72 collected, 49 aged); spotted seatrout (1,209 collected, 1,145 aged); and redfish (766 collected, 603 aged). Gonads from 81 gray snapper were collected and analyzed at the Louisiana State University Coastal Fisheries Age and Growth Lab. Laboratory personnel also collected 36 pairs of otoliths and six ovarian samples that were forwarded to the NMFS. In addition, 1,000 red drum and 1,416 spotted seatrout otoliths were processed.

DEQ Mercury Sampling Project

As of May 2002, the Louisiana Department of Environmental Quality (LDEQ) requested the services of the LDWF to conduct mercury marine fish sampling from the Gulf of Mexico. This was necessary due to the need for data on mercury in marine fishes and acknowledging the significant harvest of marine fishes for consumption by recreational and commercial fishermen off Louisiana. The LDEQ recognized the value of collecting this data for the purpose of assessing potential impacts that mercury levels in marine fishes may have on the health of the citizens of Louisiana and the United States.

The LDWF provided three samples of each of the following fish from each of three coastal areas for a total of 63 samples: dolphin (fish); tuna (yellow, blue, or black-fin); greater amberjack; red snapper; cobia; grouper (any species); and king mackerel. The coastal areas in which these species were collected were: West (NMFS statistical zones 16 and 17), Central (NMFS statistical zones 14 and 15), and East (NMFS statistical zones 11 and 12).

Cooperative University Research

In 2002, the LDWF Marine Fisheries Division continued its support of university research in our coastal areas by providing access to the Lyle S. St. Amant Marine Laboratory, other field research stations, boats, and personnel. Research projects supported by the Marine Fisheries Division are as follows:

Oyster Reefs and Coastal Restoration

Louisiana State University, School of Renewable Natural Resources – A new project entitled *Oyster Reefs: A Potential Cornerstone of Coastal Restoration in Louisiana* was initiated in 2002 in the Sister Lake Public Oyster Seed Reservation and was funded by the National Fish and Wildlife Foundation. Department personnel assisted with the project and the department provided boats and access to the Sister Lake research station in support of this research. Three-dimensional oyster reefs were constructed at random

sites along the shoreline (approximately 5 m offshore) to test differences in shoreline erosion, nekton parameters, and sedimentation between sites with constructed oyster reefs and sites with no reef.

Black Drum Study

Louisiana State University, Department of Biological Science – The LSU black drum group has been active at Grand Terre since fall 1999. The first set of experiments in the first two years of funding (September 1999 through August 2001) emphasized testing whether scent cues (scent of dead conspecifics) would deter black drum predation on oyster reefs. Over the last year, the research emphasis has switched to looking at sound cues as deterrents.

Essential Fish Habitat

Louisiana State University, Coastal Fisheries Institute – *Identifying Essential Fish Habitats in Barataria Bay and Quantifying Their Value to Important Sport Fish Species*. Objectives of this project include integration of hydroacoustics and traditional sampling so as to identify and measure biological differences among nekton communities in different habitats; identification of habitat types based on side scan sonar surveys; identification of appropriate stable isotopes to use in comparing captured nekton to their forage; quantification of differences in nekton abundances, nekton biomasses, and nekton communities with emphasis on sport fish species, among adjacent soft-bottom, hard-bottom, and marsh edge habitats; integration of the findings with the LDWF Area Monitoring Programs to establish appropriate calibration indices using a statistician familiar with the Area Monitoring Program data set. This project has been ongoing since September 2001. The first two years of study will be completed by August 2003.

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 include:

- Design and initiate projects for the collection and analysis of data required for population dynamics estimates and other fisheries management related projects;
- Develop scientifically-based management recommendations;
- Monitor the condition of fish stocks and the fisheries that depend on them;
- Provide information transfer and liaison activities with regional fisheries management entities and others;
- Provide technical support to the Mississippi Commission of Marine Resources 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 may be required; and
- Provide administrative services, general maintenance, locating suitable funding sources and other fisheries management support services as may be required.

Status

During 2002, the Marine Fisheries Office drafted changes to the following ordinance: Ordinance 4.008 – an ordinance to establish rules and regulations for the taking of crabs.

Public notices were published for opening and closing the commercial seasons for shrimp, oysters, king mackerel, red snapper, red drum, and large coastal sharks.

Personnel served on regional management activities of the GSMFC including: The TCC Artificial Reef Subcommittee, the Flounder Technical Task Force, the TCC Blue Crab Subcommittee, the TCC Data Management Subcommittee, the Commercial/Recreational Fisheries Advisory Panel, the Technical Coordinating Committee, and the State/Federal Fisheries Management Committee.

Personnel were instrumental in preparing grand documents and proposals to secure funding for fisheries management projects under the Sport Fish Restoration Act with the U.S. Department of the Interior; the Cooperative Fishery Statistics Program and Interjurisdictional Fisheries Act with the U.S. Department of Commerce; and the Gulf of Mexico Fishery Management Council liaison.

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 fishes such as red snapper, grouper, and amberjack and collect otoliths from red snapper; and
- Expand the trip ticket system.

Status

Fisheries landings 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. Fisheries landings data are 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 fishes was collected from the major landing sites for selected species on a monthly basis. This information was submitted to the NMFS for inclusion in its trip information system. These data are utilized by both state and federal fisheries managers to properly manage these valuable resources.

A trip ticket system was developed for oyster and live bait fisheries. Data are being scanned into a database and transferred to the GSMFC.

SHELLFISH MANAGEMENT PROGRAM

Objectives

Oysters, as sessile filter feeders, are subject to the influence of environmental conditions to a greater extent than mobile species. Consequently, oyster landings can change dramatically from year to year according to those conditions. In addition to fluctuations in the amount of rainfall, problems with upland pollution can render abundant supplies of oysters unavailable for harvest. During the oyster season and throughout the year, field sampling trips are made to stations located over the oyster reefs to collect water samples that are analyzed for fecal coliform content.

Opening and closing of reef areas is based primarily on the levels of fecal coliform in the water column at the time of sampling. Oyster reefs in certain areas must be closed after significant rainfall or river stage events until the water quality has improved sufficiently to allow harvesting to resume. To accomplish this, multiple stations are sampled in each reef area. Clean samples must be obtained from each area before it can be reopened for harvest following a closure. Water quality samples are obtained throughout the year to properly classify shellfish growing waters.

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

The Shellfish Sanitation Program is one of the agency's most labor-intensive efforts, requiring almost daily, routine water quality sampling and laboratory analysis of samples for fecal coliform bacteria. The data are used to properly classify oyster growing waters in accordance with the National Shellfish Program guidelines and to provide necessary justification for reopening oyster reefs following rainfall events that degrade water quality to levels requiring that reefs be closed to protect the public health.

For areas to be classified as "approved," the geometric mean fecal coliform level most probable number (MPN) cannot exceed 14 and not more than 10% of the samples taken can exceed an MPN of 13. Additionally, U.S. Food and Drug Administration requirements also specify 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 monitoring the water quality of the oyster reefs, other work performed on the reefs involves revitalization efforts such as reef turn over, oyster relaying, and planting cultch material.

Objectives of the Shellfish Program

- Maintaining program compliance with the Interstate Shellfish Sanitation Conference's National Shellfish Sanitation Program;
- Mapping Mississippi oyster reefs;
- Surveying potential cultivation sites and cultch planting sites;
- Cultivation of oyster reefs;
- Deposition of oyster cultch material; and
- Reef area assessment.

Status

A total of 391,635 sacks of oysters were harvested during the 2003-2003 season. Mississippi oyster harvesting waters are divided geographically into eight major areas which are monitored closely and opened and closed accordingly. The office also completed the surveying of potential cultivation and cultch planting sites.

A scannable oyster trip ticket system continued to be improved, and work is in progress to automate oyster check stations. Thirty acres of new oyster reef were created in Jackson County, and 104 acres of new oyster reef were created in the Western Mississippi Sound.

Shrimp and Crab Management

Objectives

The Shrimp and Crab Bureau provides management of 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 are integral to the success of shrimp and crab management activities. The program includes monitoring and research of both the shrimp and crab fisheries, coordination of the Mississippi Crab Task Force, issuance of scientific collection permits, inspection and licensing of the live bait shrimp fishery, installation and maintenance of constant water-quality recorder instruments, coordination of Wallop-Breaux grants with the U.S. Fish and Wildlife Service and the Derelict Crab Trap Recycling Program.

Additionally, these fisheries are managed by the setting of seasons, gear regulations, and other related management measures. Shrimp and Crab Bureau biologists work cooperatively with federal agencies including the NMFS, USFWS, GSMFC, GMFMC, and USGS. Cooperating state agencies and organizations include the University of Southern Mississippi's Institute of Marine Sciences; Mississippi Department of Environmental Quality; Mississippi Department of Wildlife, Fisheries, and Parks; Mississippi State University Extension Service as well as neighboring state marine resource management agencies.

Major Accomplishments

- 12,355 cubic yards of cultch material were planted for oyster reef enhancement using shell retention fees collected from oyster harvesters and processors as authorized by statute.
- Over 175 acres of oyster reef were cultivated with DMR equipment and personnel.
- The shell retention fee collection process continued to generate funds for shell planting and reef revitalization as mandated by state statute.

Key Responsibilities

- Long-term monitoring of shrimp populations in order to make management recommendations. Nearly 250 trawl samples were collected this year as part of the shrimp-monitoring program. This data collection program includes monitoring surface and bottom hydrological parameters at each trawling station (salinity, temperature, and dissolved oxygen);
- Inspection of live bait shrimp operations and compilation of confidential live bait dealer reports. The Live Bait Program includes a monthly compilation of Confidential Dealer Reports as well as inspecting and licensing these facilities. A trip ticket program has been developed to improve data collection for this fishery;
- Continuation of the Mississippi Crab Task Force in order to allow the various user groups to provide input and voice concerns;
- Continued development of constant recorder instruments along the coast for real-time hydrological monitoring;
- Real-time data from seven Mississippi Sound sites available on the DMR web page;
- Continued issuance of saltwater scientific collection permits. The bureau developed Ordinance 18.000 that established guidelines and procedures for obtaining various types of Special Permits. Recipients of Special Permits must submit an application and a report of their collection or harvesting activities to the DMR. Twenty-four Special Permits have been issued during the past year;
- Coordination of Sport Fish Restoration grants with U.S. Fish and Wildlife Service;
- The Derelict Crab Trap Recycling Program includes recording the numbers of traps and where they were collected, as well as documenting any ghost fishing (capturing of animals other than crabs). To date, over 5,000 traps have been collected and recycled along the coast.
- The first closed season for crab traps was held January 2002 for the purpose of cleaning up derelict traps in Mississippi waters. The two week cleanup included volunteer efforts from the public.

FINFISH MANAGEMENT

Staff works closely with appropriate federal and state agencies, various user groups, and the public. They strive to promote, conserve, and regulate these fisheries based on the best available biological, social, and economic data. The issuance of saltwater scientific collection permits is done in a manner that protects Mississippi's marine resources, while allowing legitimate research and development to occur. Constant recorder instruments are monitored and maintained to allow optimum data availability. Sport Fish Restoration coordination closely monitors grants to ensure that they are achieving the pre-established goal of each particular project.

Artificial Reef Program

Objectives

- To update coordinates and orientation of past artificial reef material deployments within Mississippi's marine waters and adjacent federal waters;
- To provide the DMR 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 sports fishing community to access this information;
- Identify areas conducive for artificial reef development and enhancement both nearshore 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

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 85 concrete modules (26'x12'x9'), concrete rubble (134 deployments), 34 steel hull vessels (including barges), one oil rig living quarters, two oil rig jackets, and 120 armored personnel carriers. There have been approximately 388 total deployments since 1978 on these offshore reef sites.

Mississippi has also permitted 45 nearshore artificial reef sites. These reefs are located inshore where fishermen in small vessels, wade fishermen, and pier fishermen can take advantage of the fish that inhabit these reefs. The materials of the nearshore reefs consist of limestone, concrete rubble (when water depth allows), oyster shells, and fly ash. The nearshore reefs are 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 1) side-scan sonar, primarily used on offshore reefs and 2) sounding with a pole, primarily on inshore reefs. Thirteen of the 14 artificial reef sites located offshore in Mississippi and adjacent federal waters and two of the 46 inshore artificial reefs were surveyed using side-scan sonar. Thirty-four inshore reefs were verified using the pole sounding technique.

All coordinates obtained from side-scan sonar and sounding currently reside on the DMR web site and are available to the general public. Maps are also available upon request.

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 the MRFSS survey at night to measure the variance between day and night catches.
- Conduct weekly telephone interviews of charter boat operators in Mississippi.

Status

Recreational fisheries information was collected daily in all three modes through survey. The data were processed, edited, and submitted to the GSMFC in a timely manner. The information gathered from the survey provides a continuous standardized database of marine recreational catch, effort, and participation in the world. This data gives the various fisheries councils the information necessary to make wise management decisions. Pressure estimates were also submitted to the GSMFC according to schedule. These estimates along with historical productivity are used to estimate the number of assignments needed to achieve a given quota for each month. Through these assignments all month and wave quotas were successfully met.

A separate night time MRFSS survey was also conducted using the same methods as the day survey. This survey was only conducted in the shore mode, and the data collected were kept separate from the day surveys. These data were also processed, edited, and submitted to the GSMFC in a timely manner. This information is needed in order to improve estimates of recreational night fishing catch and effort. These estimates will be compared with daytime catch estimates to determine if significant differences exist between day and night fishing activities.

The MRFSS Program also includes a telephone survey of the charter boat fishery. This was conducted through weekly telephone interviews of charter boat operators in Mississippi. The number of telephone interviews was based on a random selection of 10% of the charter boats in Mississippi. The data were entered and sent to the GSMFC on a weekly basis. They use this information to obtain more precise effort estimates for the charter and headboat sectors.

INVESTIGATION OF JUVENILE FISHES THAT UTILIZE *SARGASSUM* AND FRONTAL ZONES AS ESSENTIAL HABITAT IN MISSISSIPPI MARINE WATERS AND ADJACENT GULF WATERS

Objectives

- Describe species diversity, determine temporal and spatial occurrence, and develop indices of relative abundance for juvenile fishes that occur at *Sargassum* and frontal zones;
- Examine the role of *Sargassum* as habitat for juvenile fishes, including a general assessment of

the ecological relationships between juvenile fishes and the *Sargassum* community; and
- Characterize frontal zones and *Sargassum* habitat utilized by juvenile fishes based upon water quality parameters, physical location, general direction of movement, and general characteristics of the frontal zone feature (including estimated length, width, and depth of *Sargassum*) and mats sampled.

Status

In 2001, the DMR received federal funds made possible by the Federal Aid in Sports Fish Restoration Act (16 U.S.C. 777-777k:)50 CFR Part 80, administered by the U.S. Fish and Wildlife Service. Part of these funds was provided to the Gulf Coast Research Laboratory for the study of juvenile fishes in *Sargassum*.

Nearly 3,000 juvenile fishes that utilized *Sargassum* and frontal zones were collected and identified in 30 families. Larval billfishes, bluefin tuna, and dolphin also appeared in samples. Work is ongoing to more clearly establish the role of *Sargassum* in providing essential fish habitat to these important fish species.

SPORTFISH TAG AND RELEASE IN MISSISSIPPI COASTAL WATERS AND THE ADJACENT GULF OF MEXICO

Objectives

- Continue the 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 (14" and larger).
- Continue the angler-cooperative tag and release in Mississippi coastal waters and the adjacent Gulf of Mexico in order to obtain additional data on seasonal movement patterns of this fish.
- Initiate an angler-cooperative tag and release of tripletail in Mississippi coastal waters and the adjacent Gulf of Mexico in order to obtain data on seasonal movement patterns of this fish.
- 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. Tagging included 329 specimens, and 16 (4.9%) were recaptured. Similar trends of limited movement were observed in these 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. Tagging included 452 specimens, and 20 (4.4%) were recaptured. Similar trends of movement were observed in these recaptured fish as in other years.

Seasonal movement and growth of tripletail cobia were studied utilizing angler tagged and released tripletail in Mississippi coastal waters and adjacent Gulf of Mexico waters. Tagging included 32 species, and no recaptures were reported. This is the first year of the tripletail project, and a broader base of angler participation is being built.

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 provide added 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 projects in line with seafood technical surveys, promotion of Mississippi seafood, seafood safety education, and sanitation training in line with the goals of the Mississippi seafood industry to disseminate information and educate consumers and food handlers in the seafood industry;
- Provide assistance to the Mississippi Food Safety Task Force in promoting food safety education to the public through participation in public fairs, public meetings, and events;
- Work in concert with public affairs staff to develop and distribute brochures, pamphlets, and fact sheets on proper seafood preparation and handling; and
- Provide administrative support to the activities of

the office, department, and CMR.

Status

A total of 3,769 technical assistance actions was provided. Examples include:

- Technical advice and technical support inspections for the Mississippi Department of Agriculture and Commerce regarding regulated aquaculture activities;
- Provided seafood inspectors with pre-oyster harvest packets of educational information for molluscan shellfish dealers and a technical assistance packet to crab and shrimp processors;
- Developed Hazard Analysis Critical Control Point (HACCP) plans and sanitation forms for use in molluscan shellfish, shrimp and crab processing facilities, and seafood retailers;
- Provided the Interstate Shellfish Sanitation Conference brochures on *The Risk of Eating Raw Oysters and Vibrio Vulnificus* informational flyer and brochures to the industry and public;
- Participated in Mississippi Food Safety Task Force with the goals of education, communication, cooperation, and coordination with the other member state agencies in the promotion of food safety with emphasis on raw seafood handling, risks on eating shellfish, and cooking seafood;
- Participated in the preparation of the Food Security Symposium in Jackson, Mississippi;
- Hosted training courses on Basic HACCP and Plant Sanitation in April and cosponsored training courses in September with Mississippi State University Coastal Research and Extension Center;
- Provided Louisiana Shellfish Control Authority HACCP and sanitation assistance;
- Assisted in the Louisiana recall of oysters and illness investigations;
- Assisted North Carolina in an illness investigation;
- 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 confidence in Mississippi-inspected seafood products and to aid in marketing Mississippi seafood products;
- Conducted on-site visits to post-harvest processors and seafood dealers to document the different post-harvest processing technologies;
- Developed a generic post-harvest processing HACCP Plan for the individually quick frozen, heat cool pasteurization, high hydrostatic pressure, and irradiation processing technologies;
- Participated in the research grant entitled "*Integrated Oyster Market Research, Product Development and Evaluation, Promotion, and Consumer Education Program for the Gulf of Mexico Oyster Industry.*"
- Produced a video on "*Available Technologies in Post Harvest Treatment of Oysters;*" and
- Produced brochures, poster, fact sheet, and PowerPoint presentations on individually quick frozen, heat/cool pasteurization, and high hydrostatic pressure technologies.

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 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 Food & Drug Administration; and
- Received FDA notification that the Mississippi Shellfish Sanitation Program met National Shellfish Sanitation Program (NSSP) requirements.

Types and Number of Seafood Facilities Permitted

- Shrimp – 27
- Crab – 14
- Oyster – 40
- Total number of seafood sanitation/processing permits – 81. These 81 permits represent 539 inspected seafood units.

The following are examples of seafood sanitation and health safety regulatory activities that were conducted by the staff of the Seafood Technology Bureau: 4,701 seafood facility inspections and associated actions and 174 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 National Shellfish Sanitation Program (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;

- Worked with seafood processors to correct deficiencies to meet FDA seafood compliance criteria;
- Worked 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 the National Shellfish Sanitation Program requirements;
- Prepared letters to molluscan shellfish dealers regarding ISSC meeting actions and updated HACCP plans for numerous molluscan shellfish dealers;
- Prepared response to *Vibrio vulnificus* survey for the Gulf Oyster Industry Council;
- Prepared National Shellfish Sanitation Program HACCP comments for the FDA pertaining to specific critical limits and correction actions in the model ordinance under the program; and
- Met with the Mississippi Department of Health and Mississippi Department of Agriculture and Commerce regarding inspection coordination and developed a memorandum of understanding and coordination form; and
- Participated in the deliberation of issues and resolutions by the Gulf and South Atlantic States Conference concerning shellfish sanitation program of the states within the conference.

Texas Parks and Wildlife Department
Coastal Fisheries Division

Hal Osburn, Division Director

The Texas Parks and Wildlife Department (TPWD), Coastal Fisheries Division is responsible for making management recommendations regarding fishery resources within Texas bays and estuaries 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

The goal of the division is to develop management plans for selected fisheries using the concept of optimum yield. These plans include recommended harvest regulations, resource stock enhancements, and habitat enhancements based on fisheries independent and dependent monitoring program data utilizing the best scientific information available. Objectives of the division are:

1) to recommend management strategies for aquatic marine resources to the TPWD executive director, the Texas Parks and Wildlife Commission (TPWC), and the Texas Legislature (legislature) based on sound scientific data;
2) to determine trends in abundance of finfish and shellfish populations affected by environmental conditions and fishing;
3) to determine landings of marine species and associated social and economic characteristics of the fisheries;
4) to restore, manage, and enhance existing fishery populations through stock identification, life history, genetic and reproductive physiology research, establishing appropriate stocking ratios for selected marine organisms in Texas bays, and assessing impacts of stocking on present populations and existing fisheries; and
5) to promote, develop, maintain, monitor, and enhance the artificial reef potential in the marine waters off Texas.

To achieve these objectives, the Division is organized into four major components: administration, ecosystem monitoring, science, and enhancement. Effective management of finfish and shellfish populations must be based on a thorough knowledge of the population dynamics of the resources. Long-term trend data based on routine monitoring are necessary to assess trends in abundance. Commercial and recreational landings information is necessary to assess impacts of user groups on the fisheries and to determine economic importance of these fisheries to the state.

Activities in FY2002 (September 1, 2002 through August 31, 2002) included participation in the development, review, and revision of Gulf of Mexico Fishery Management Council and the Gulf States Marine Fisheries Commission fishery management plans. Personnel participated in workshops and advisory meetings as state representatives on both the Council and Commission and other management authorities. In addition, numerous technical reports and scientific journal articles about various aspects of the Texas coastal fishery resources were completed.

RESOURCE AND HARVEST MONITORING

Monitoring of the relative abundance of adult finfishes in Texas bay waters is accomplished using 600 foot long gill nets with individual 150 foot sections of three, four, five, and six inch stretched mesh. Bag seines (60 foot, ½ inch mesh) and trawls (20 foot, 1½ inch mesh) are used to determine abundance of juvenile and subadult finfish, shrimp, blue crabs, and associated organisms. Oyster dredges (19.5 inches wide) are used to collected oyster abundance data. Inshore waters (within 9 nm) are also sampled with trawls. Total sampling effort included 780 gill net sets; 2,160 bag seine tows; 2,640 bay and gulf trawls; and 1,080 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 participates in the SEAMAP; data obtained through this sampling effort is used in evaluating the "Texas Closure" and to provide information on shrimp and groundfish stocks in the northern Gulf of Mexico from inshore waters to 50 fm. In fulfillment of SEAMAP requirements, the TPWD collected 160 shrimp trawl, eight long line, and two video trap samples in FY2002.

Sport landings (private and guided boat) and associated angler activities are derived from on-site creel interviews of recreational anglers at the completion of their trips. Roving trailer and wet slip counts are used to assess relative pressure at sampling

sites. Relative pressure is used to determine how often a site should be selected for a survey; higher use sites are surveyed more often than low sites. A total of 1,014 survey days was 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. Landings are obtained from commercial seafood dealers through submission of Monthly Aquatic Products Reports. The TPWD collected commercial landings statistics on crabs, oysters, and finfish while the NMFS continued to gather landings statistics on shrimp.

CRAB TRAP CLEAN-UP PROJECT

Rules stemming from the last legislative session allowed the TPWD to close coastal waters to crab fishing from February 16, 2002 to March 3, 2002. Before this ruling, only the trap owner or a TPWD game warden could legally remove a crab trap. During the closed season, a total of 8,008 abandoned crab traps were picked up by volunteers, TPWD coastal fisheries staff, game wardens, and others. A total of 541 volunteers assisted, and 223 vessels were used. The area where the most traps were picked up was Galveston Bay where 3,163 were recovered.

Many thousands of the wire mesh cages used to catch crab are lost or abandoned each year. State game wardens pick up more than 2,500 traps annually, yet there are many more that are left in the water to foul shrimp fishermen's nets, snag fishermen's lines, and create an unsightly view of Texas shores. This clean-up program will continue each year during the closed season.

RESEARCH

The Perry R. Bass Marine Fisheries Research Station (Palacios, Texas) provided information and techniques necessary for improvement of Texas fisheries management strategies. Effort to improve management or restoration of marine species was directed toward research in genetics and life history of important recreational and commercial species and seagrasses.

In the past year, genetics studies were conducted or completed on Gulf menhaden, spotted seatrout, sheepshead, bonnethead and blacktip sharks, tarpon, blue crab, and shoal grass. A final report on the genetic variation in mtDNA of sand seatrout was completed. An analysis of DNA variation in blue crabs continued. Informative markers are being evaluated in both nuclear and mitochondrial genomes. Studies on genetic variation on bonnethead and blacktip sharks also progressed, with examinations of both mtDNA and nuclear DNA markers. Collection of otoliths from red drum and spotted seatrout were continued to estimate age structure of Texas populations and to develop age-length keys for these fishes. A study of the age structure and growth rates of southern flounder populations was completed and published.

Collections of shoal grass from bays along the Texas coast are continuing and analyses utilizing single stranded conformation polymorphism (SSCP) techniques were collected. New studies on genetics of Gulf menhaden and spotted seatrout have been approved and collection of samples was initiated.

Studies on tarpon genetics continued. Analyses of an internally developed microsatellite DNA library are underway using microsatellite primers derived from the library applied to tarpon from sampled populations. Several manuscripts based on genetic surveys of tarpon are in various stages of publication. Tarpon life history in Texas waters is being examined with work concentrated on juvenile abundance and tagging of juveniles and adults. A project to identify spotted seatrout spawning areas continues. A study to examine reproductive biology of Atlantic croaker was initiated. A cooperative project with the GSMFC to collect age and growth data on Southern flounder, king mackerel, red snapper, greater amberjack, and Gulf flounder taken by recreational and commercial means was planned for 2002.

LEGISLATIVE AND REGULATORY CHANGES

The Texas Legislature did not meet in 2002. Several new rules regarding saltwater fishing were approved by the Texas Parks and Wildlife Commission.

Crab traps were exempted from the requirement to have on the gear tag the date the device was set out. With the advent of specific trap marking requirements implemented as a result of the Crab License and Finfish License Management programs, it was no longer necessary to require the date to be on the gear tag. In addition, a closed season for the use of crab traps was established during February 16, 2002 through March 3, 2002. The intent of the season was to allow the removal of abandoned crab traps from public coastal waters.

Under House Bill 1 (1997), each state agency is required to review all regulations not less than every four years and either re-adopt, amend, or repeal each

rule, provided the agency has not acted on the rule in the interim. The TPWD re-adopted its rules with a few minor amendments in its Statewide Shrimp Fishery, Crab Fishery, and Finfish Fishery Proclamations. In other actions, licenses fees for commercial fishing were staged to increase in FY2003.

FISH STOCKING

Efforts continued toward spawning and rearing marine fish at the CCA/CPL Marine Development Center in Corpus Christi, Perry R. Bass Marine Fisheries Research Station in Palacios, and Sea Center Texas in Lake Jackson for stock enhancement. Controlled photoperiod and temperature protocols were used to induce captive broodfish to spawn in 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 an average total length of 30 mm. A total of 36.6 million red drum fingerlings and 2.8 million spotted seatrout fingerlings were stocked into marine water, and approximately 960,000 red drum fingerlings were released into inland freshwater man-made reservoirs. Some 70,000 visitors toured the hatcheries, and research was conducted to strengthen the scientific basis of the stock enhancement program. Technical information concerning fish hatchery development was provided to other coastal states in a cooperative effort to enhance coastal marine fisheries.

In addition to stock enhancement, outreach activities are provided at each facility. In 2002, Sea Center Texas (a state-of- the-art marine fish hatchery and visitor's center) welcomed 8,259 visitors and the Perry R. Bass Satellite pond facility welcomed 2,308 visitors. The facilities, touted as the world's largest red drum (redfish) hatcheries, represent a unique merging of fisheries science and visitor education. Sea Center Texas and the Marine Development Center's visitor appeal centers around its interpretive displays, touch tanks, and aquaria.

ARTIFICIAL REEF PROGRAM

The Artificial Reef Program is responsible for maintaining 46 permitted reef sites and six buoys (four of which are permanent). The program received 14 petroleum structures in the Outer Continental Shelf of the Gulf of Mexico in FY2002. One structure was in the Brazos area (BA-A-28), two structures were in the Mustang Island area (MU-828), and 11 in the High Island area (HI-A-271, 285, 302, 327, 313, 477, 497). Six structures were removed by explosives and towed to an appropriate site, seven were partially removed by mechanical cutting, and one was mechanically cut but towed to another site. These donations contributed $2,153,919 to the Texas Artificial Reef Fund.

The program provided an exhibit and workshop at the Houston Sea Space Exposition in June 2002 to promote the understanding and identification of artificial reefs and the fish and invertebrates that live on these reefs. A nearshore reef strategic plan is under development. Various site visits were along the coast in search of real estate which could be purchased or leased that would provide a storage site for smaller reef building materials. Once established, the program would work with local counties and the general public in building local reefs that can be reached by small vessels. In addition, an agreement was reached with a Florida corporation, Eternal Reefs, in which memorial type reefs would be added to an established reef site near Port Isabel.

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

Roy E. Crabtree, Regional Administrator

The National Marine Fisheries Service (NOAA Fisheries) is an agency of the U.S. Department of Commerce's National Oceanic and Atmospheric Administration (DOC/NOAA). The mission of NOAA Fisheries is stewardship of the nation's living marine resources. Through conservation and wise use, these marine resources and their habitats can be managed effectively and efficiently to maximize the benefit to the nation without jeopardizing future options.

NOAA Fisheries administers programs to promote the conservation, management, and development of living marine resources for commercial and recreational use. These programs include services and products to support the administration of fisheries management operations; international fisheries affairs, fishery development and industry assistance activities; protected species and habitat conservation operations; law enforcement activities for marine mammals, endangered species, and regulated fisheries; and scientific and technical aspects of marine fisheries research programs.

NOAA Fisheries comprises five regional offices and five science centers located along the coastal U.S. The Southeast Region covers the coastal states from North Carolina to Texas; the inland states of Arkansas, Iowa, Kansas, Kentucky, Missouri, Nebraska, New Mexico, Oklahoma, and Tennessee; as well as the Commonwealth of Puerto Rico and the U.S. Virgin Islands.

NOAA Fisheries Southeast Regional Office (SERO) is in St. Petersburg, Florida. The regional administrator serves as the regional representative of the assistant administrator with state conservation agencies, recreational interests, commercial industry, consumers, environmentalists, and the public. The region is responsible for planning, organizing, and implementing fishery management and conservation programs including regulatory requirements, fishery management plans, recreational fisheries, international fisheries, and services through the range of NOAA Fisheries programs. It provides administrative and technical support to regional fishery management councils and is responsible for planning and evaluation, budgeting, and administrative support services. These support services are also provided to other NOAA and NOAA Fisheries elements collocated with the regional office.

The NOAA Fisheries Southeast Fisheries Science Center (SEFSC) is in Miami, Florida, and has laboratories in Beaufort, North Carolina; Pascagoula and Stennis Space Center, Mississippi; and Galveston, Texas. The SEFSC conducts multi-disciplinary research programs to provide management information to support national and regional programs of NOAA Fisheries and to respond to the needs of regional fishery management councils and other user groups. The SEFSC develops 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 pursues research to answer specific needs in the subject areas of habitat conservation, aquaculture, fishery engineering, marine mammals, endangered species, fishery oceanography, food sciences, and fishery economics.

FISHERY RESOURCE CONSERVATION AND MANAGEMENT

Gulf Shrimp Fishery

Annual Texas Closure

The annual closure of the shrimp fishery in the western Gulf off Texas was established to allow brown shrimp to reach a larger and more valuable size prior to harvest and to prevent the discard and waste of brown shrimp smaller than the preferred market size. NOAA Fisheries considered a request by the Gulf of Mexico Fishery Management Council to suspend the Texas closure for the 2002 fishing year. The Council made this request after receiving public testimony from shrimp fishermen and processors indicating that the fishery was experiencing economic hardships because of the unusually low shrimp prices. Those constituents argued that a suspension of the Texas closure would alleviate some economic problems in the shrimp fishery by allowing them to fish throughout the year.

In accordance with the provisions of the Fishery Management Plan for the Shrimp Fishery of the Gulf of Mexico EEZ, the Regional Administrator, may, after determining that benefits may be increased or adverse impacts be decreased, either: (1) modify the

geographical scope of the extent of the Texas closure, or (2) eliminate the Texas closure for one season. NOAA Fisheries conducted a regulatory impact review to determine whether suspending the Texas closure would be beneficial. The review projected that if the closure were suspended, the average producer surplus for larger vessels, which are more likely to fish in federal waters, would decrease. The review also concluded that for the fishery as a whole, total harvest and revenues over the entire fishing year would decline if the closure were suspended. NOAA Fisheries concluded that rather than alleviating adverse economic conditions in the fishery, suspending the closure was more likely to perpetuate and probably exacerbate current problems. Consequently, NOAA Fisheries closed federal waters off Texas to commercial shrimping on May 15, 2002, and reopened the fishery on July 15, 2002, corresponding with the period that Texas waters are closed to shrimp trawling.

Federal Permits for Gulf Shrimp Vessels

Federal regulations require permits for vessels harvesting shrimp in the EEZ of the Gulf of Mexico. Owners or operators of these vessels had to obtain these permits by December 5, 2002, from NOAA Fisheries Southeast Regional Permits Office. The permit is non-transferrable and valid for one year unless it is revoked, suspended, or modified, or the vessel is sold. NOAA Fisheries approved and implemented these and other shrimp regulations by publishing a final rule in the *Federal Register* (67 FR 51074, August 7, 2002). The Council concluded that federal Gulf shrimp permits are necessary to identify and quantify vessels that fish for shrimp in the Gulf EEZ. The database resulting from this new permit program is expected to be more statistically robust than data collected from previous programs. The new system will facilitate the collection of much needed biological, social, and economic data necessary to achieve and maintain sustainable Gulf fisheries.

Effective September 7, 2002, the new regulations prohibited the use of traps to harvest royal red shrimp in the Gulf EEZ or their transfer at sea. The royal red fishery has been a small component of the Gulf shrimp fishery since the early 1960s. Prohibiting the use of traps on the royal red shrimping grounds will prevent gear conflicts and overfishing. NOAA Fisheries was concerned that the introduction of traps in the Gulf shrimp fishery could provoke conflicts between the participants in the traditional trawl fishery and potential entrants into a trap-line fishery. In addition to the weight of the trawls, a considerable length of line is needed to deploy and retrieve gear in this deep-water fishery which occurs in depths greater than 100 fathoms (183 meters). NOAA Fisheries considered the coexistence of these two gear types impracticable because of the potential for entanglements with marine mammals and sea turtles (similar to lobster pots in the Northeast), substantial damage and loss of gear, and increased risks to vessels and crews. Recent landings information suggested that the introduction of new gear in this fishery could lead to overfishing. Since 1993, Gulf royal red landings by traditional trawlers have approached the estimated maximum sustainable yield of 392,000 pounds. Prohibiting the transfer of royal red shrimp in the Gulf EEZ also fosters the ability to enforce trap prohibition. Legal gears continue to include only trawls, butterfly and skimmer nets, and cast nets.

Stone Crab

On October 3, 2002, NOAA Fisheries published a final rule in the *Federal Register* (67 FR 61990) implementing Amendment 7 to the *Fishery Management Plan for the Stone Crab Fishery of the Gulf of Mexico*. NOAA Fisheries had previously published the proposed rule in the *Federal Register* (67 FR 42744) on June 25, 2002. The final rule established a federal trap limitation program for the commercial stone crab fishery in the EEZ off Florida's west coast, including Monroe County. The federal limitation is consistent with the FWC plan. The rule is intended to enhance the effectiveness of the FWC program and help reduce overcapitalization in the stone crab fishery. Applicants had until January 31, 2003 to apply for a federal vessel permit and tags for stone crab. No one qualified to receive stone crab federal vessel permits or trap tags during the 120-day application period that began October 3, 2002.

Coastal Migratory Pelagics: King and Spanish Mackerel

Quota Monitoring

Catch specifications for the Gulf and Atlantic groups of king and Spanish mackerel have remained unchanged since April 30, 2001. During the 2001/2002 and 2002/2003 fishing years, NOAA Fisheries monitored eight king and Spanish mackerel commercial quotas. In addition to E-mail broadcasts and fishery bulletins, NOAA Fisheries SER posted updated quota monitoring reports on the regional web site. For commercial fisheries, vessel trip limits were reduced and closed fisheries for Gulf and Atlantic migratory groups when landings projections indicated that the specified quota levels were reached. During the 2001/2002 fishing year, the Gulf group king mackerel trip limit for hook-and-line vessels in the southern

Florida west coast subzone was reduced from 1,250 to 500 pounds/day on March 11, 2002.

Four commercial fisheries for Gulf group king mackerel were also closed as indicated below:

2001/2002 Fishing Year (July 1, 2001 - June 30, 2002)

- Southern Florida West Coast Subzone, Gillnet: on January 18, 2002
- Southern Florida West Coast Subzone, Hook & Line: on March 23, 2002

2002/2003 Fishing Year (July 1, 2002 - June 30, 2003)

- Western Zone (off TX, LA, MS, and AL): on October 25, 2002
- Northern Florida West Coast Subzone, Hook & Line: on November 30, 2002

Charter Boat Permit Moratorium

On June 28, 2002, NOAA Fisheries published a final rule establishing a three-year moratorium on the issuance of charter vessel or headboat (for-hire) permits for the coastal migratory pelagics fishery and the reef fish fishery in the Gulf EEZ. Formerly, the for-hire permit for coastal migratory pelagic fish applied in federal waters of the South Atlantic and Gulf of Mexico. These regulations restructured the for-hire permit system for coastal migratory pelagic fish to require separate permits for the Gulf of Mexico and South Atlantic. That change made it necessary for NOAA Fisheries to establish a separate for-hire permit for South Atlantic coastal migratory pelagic fish effective December 26, 2002, and that required for-hire permit for coastal migratory pelagic fish is not subject to the provisions of the Gulf for-hire permit moratorium.

Gulf Reef Fish Fisheries

Red Snapper

NOAA Fisheries monitored the two seasonal commercial quotas that total 4.65 million pounds (MP), and the 4.47 MP recreational quota. The first commercial season began February 1, 2002. During this first season, the fishery was opened the first ten days of February, March, April, May, June, and July, and the first seven days of August when landing estimates indicated that the spring quota of 3.10 MP was reached. During the fall 2002 season, the fishery was opened for the first ten days of October and November, and from December 1-7 when monitoring reports indicated that the 1.41 MP remainder of the 2002 commercial quota had been harvested. The recreational fishery allocated 4.47 million pounds of the total allowable catch and was opened from April 21 through October 31, 2002.

Gag, and Red and Black Groupers

Under regulations implemented in 2001, NOAA Fisheries prohibited the possession, sale, or purchase of gag, red grouper, or black grouper by commercial vessels in or from the Gulf EEZ annually, from February 15 until March 15. This prohibition is in effect for vessels holding a valid federal commercial permit for Gulf reef fish regardless of where these species are harvested. A person aboard a vessel holding a federal permit that allows for commercial and for-hire fishing for Gulf reef fish may retain gag, red grouper, and black grouper under the recreational bag and possession limit during this period provided the vessel is operating as a for-hire vessel. Reef fish caught in the Gulf EEZ under the recreational bag limit may never be legally sold.

Charter Boat Permit Moratorium

On June 28, 2002, NOAA Fisheries published a final rule establishing a three year moratorium on the issuance of for-hire permits for the reef fish fishery and coastal migratory pelagics fishery in the Gulf EEZ. This moratorium caps the number of for-hire vessels currently operating in these fisheries and provides time for the Council to consider further management actions needed to rebuild and attain optimum yield of targeted stocks. The Council published these measures in *Amendment 14 to the Fishery Management Plan for the Coastal Migratory Pelagic Fishery of the South Atlantic* and *Amendment 20 to the Fishery Management Plan for the Reef Fish Fishery of the Gulf of Mexico*.

Under the moratorium, initial eligibility for Gulf charter for-hire permits is limited to:

1) An owner of a vessel that had a valid Gulf for-hire permit(s), or whose application for such permit(s) had been received by NOAA Fisheries, at some time between March 29, 2000 and March 29, 2001, and who had such a valid permit(s) on July 29, 2002, the effective date of the final rule;
2) Any person who could provide NOAA Fisheries with documentation verifying that he/she had a for-hire vessel under construction and that the associated expenditures were at least $5,000 as of March 29, 2001;
3) A historical captain who provided NOAA Fisheries with the qualifying documentation specified in the regulations.

The final rule implementing the for-hire permit moratorium contained an error regarding eligibility that had to be resolved. Also, certain permit-related deadlines in the final rule were extended or deferred by an emergency rule (67 FR 77193) published in the *Federal Register* on December 17, 2002.

In addition, the regulations in the final rule that implemented the moratorium required all for-hire vessels operating in the Gulf reef fish or coastal migratory pelagic fisheries in federal waters to have a valid "moratorium permit," as opposed to the prior open access charter permit, by December 26, 2002. In response to this emergency action, NOAA Fisheries began to issue limited access Gulf for-hire permits to those who qualify under the existing final rule. These emergency actions were necessary to ensure that participants with valid permits could continue to participate in these fisheries until NOAA Fisheries could readdress the issue of initial eligibility requirements in the amendments and final rule implementing the permit moratorium. Eligibility issues impinging on this emergency action were addressed expediently through the normal rule-making process that included opportunities for public comment and resolved by mid-2003. This emergency rule was effective from December 17, 2002 through June 16, 2003.

PROTECTED SPECIES MANAGEMENT

- Published a proposed rule to designate critical habitat for Gulf sturgeon.
- Conducted scoping meetings throughout the Southeast to solicit additional data and comments on the status of the Atlantic white marlin.
- Completed the status review of the Atlantic white marlin and recommended that Endangered Species Act listing of the white marlin is not warranted.
- Continued the educational campaign throughout Florida to inform the public that it is illegal to feed and harass wild dolphins.
- Published and distributed the final recovery plan for Johnson's seagrass.
- Consulted on a regulatory amendment to suspend the Texas closure in accordance with the *Fishery Management Plan for the Shrimp Fishery of the Gulf of Mexico*.
- Completed a biological opinion for the USCG regarding marine event permitting.
- Issued an advisory notice to integrate the Marine Mammal Authorization Program with several state and federal commercial fishery permitting systems in Florida, Georgia, North Carolina, and South Carolina.
- Extended Letter(s) of Agreement for a period of one-year for the participants of the Southeastern United States Marine Mammal Stranding Network.
- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding construction of a fishing pier in Wakulla County, Florida.
- Published interim final and final rules to enact seasonally-adjusted closure for large-mesh gill net fishing in the mid-Atlantic.
- Completed a biological opinion for the Jacksonville District Corps of Engineers regarding maintenance dredging of the Sealine Marina Basin and Access Channel for Miramar Marina Corporation in Miami-Dade County, Florida.
- Distributed plastic and metal "Protect Dolphins" signs to educate people in Alabama, Florida, Louisiana, and Texas about appropriate behavior around wild dolphins.
- Completed a regional biological opinion regarding shrimp trawling in the southeastern United States, under the Sea Turtle Conservation Regulations and as managed by the *Fishery Management Plan for the South Atlantic and Gulf of Mexico*.
- Completed a biological opinion for United States Department of Interior, Minerals Management Service, regarding Gulf of Mexico Outer Continental Shelf Multi-Lease Sales (185, 187, 190, 192, 196, 198, 200, and 201).
- Prepared authorizations for the temporary use of restricted tow times in lieu of using TEDs for shrimp trawlers in Louisiana and Alabama as a result of excessive storm-related debris on the fishing grounds caused by Tropical Storm Isidore and Hurricane Lili.
- Completed a biological opinion for the Jacksonville District Corps of Engineers, Pensacola Regulatory Division, regarding the proposed Pensacola Beach Restoration Project, Santa Rosa Island Authority: Nourishment of Pensacola Beach, Florida.
- Developed the Southeast Region's contribution to the annual List of Fisheries under the Marine Mammal Protection Act.

HABITAT PROTECTION

The SER's Habitat Conservation Division (HCD) used statutory authorities found in a variety of federal laws to manage and influence the outcome of activities that may affect essential fish habitat (EFH) and other fishery resources and, ultimately, the production of commercially and recreationally-important fisheries. The HCD activities focused on project and permit reviews and EFH consultations involving federal regulatory programs, pre- and post-application planning, federal projects affecting habitat,

National Environmental Policy Act (NEPA) consultations, watershed planning, partnerships, and coordination with others (e.g., fishery management councils), coordination between science and management, and outreach efforts. The HCD continued intensive involvement in activities promoting the restoration, enhancement, creation, and preservation of coastal wetlands and riverine habitats utilized by anadromous fish.

The HCD accomplished its missions through the efforts of HCD personnel stationed in the regional office and at eight field offices in key locations throughout the region. Acting under authority of many federal laws and statutes – including the Fish and Wildlife Coordination Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Clean Water Act, and the Federal Power Act – HCD personnel frequently interact with federal, state, and local officials, corporations, and private citizens seeking to perform work in coastal rivers, estuaries, and marine waters within the region. Consultative services are provided by conducting field inspections, meetings, and public hearings, and by reviewing documents. Recommendations are also provided for sequentially avoiding, minimizing, and offsetting adverse impacts to EFH and other fishery habitats. The HCD:

- Conducted 352 preapplication consultations for proposed water development projects.
- Reviewed 5,281 individual proposals (including preapplication consultations) to develop in wetlands.
- Reviewed 121 large federally-constructed or sponsored projects.
- Recommended detailed measures to conserve and protect EFH on about 240 of about 4,070 EFH consultations that were initiated by federal action agencies. Most of these actions were found to not adversely affect EFH but completed 21 EFH findings were completed.
- Participated in many activities associated with mitigation planning and habitat restoration that are unrelated to other habitat restoration programs and activities addressed in this report. The majority of these opportunities were related to federal regulatory programs. We devoted considerable effort in planning for mitigation bank development, mitigation guideline development, and general mitigation planning. We interacted on proposals that would preserve, enhance, restore, or create more than 4,300 acres of fishery habitat.
- Engaged in a plethora of activities related to the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA, also known as the Breaux Act). We were extremely active in the identification and implementation of projects under CWPPRA in 2002. To date, NOAA Fisheries is directly responsible for restoration projects that benefit, restore, or protect more than 126,000 acres of Louisiana wetlands.
- Completed 141 reviews on National Environmental Policy Act actions.
- Disbursed nearly $500,000 in Coral Reef Initiative funds to support nine restoration and education activities. Those funds were allocated to support coral reef protection projects in the U.S. Virgin Islands, Puerto Rico, and a coral aquaculture project at the Florida Aquarium in Tampa.
- Engaged aggressively in outreach efforts, disseminating habitat conservation information 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 many reports and brochures for intra- and interagency coordination; publishing many articles in scientific journals; and responding to frequent requests for information from private citizens, the news media, and countless local, state, and federal governmental agencies.

COOPERATIVE AGREEMENT AND GRANT PROGRAMS

In 2002, 100 grants and cooperative agreements totaling $23,509,383 were awarded to states, universities, non-profit/profit institutions, and individuals through the programs mentioned below.

- The Southeast Area Monitoring and Assessment Program (SEAMAP) is a state-federal program for the collection, management, and dissemination of fishery-independent data in the southeastern U.S. Three components currently exist in partnership with NOAA Fisheries: SEAMAP-Gulf; SEAMAP-South Atlantic; and SEAMAP Caribbean. The program allocates funds to the southeastern states for surveys and studies and to the Gulf States Marine Fisheries Commission, Atlantic States Marine Fisheries Commission, and the Caribbean Fishery Management Council as coordinating agencies through programmatic appropriations mutually agreed-upon by the participants. Eleven cooperative agreements totaling $1,121,315 were awarded this year.
- The State-Federal Cooperative Fishery Statistics Program is a NOAA Fisheries southeastern U.S. program for collection of landings data from the

commercial and recreational fisheries of the region. This information is used by the states and the SEFSC in determining yields and by the Southeast Regional Administrator and Regional Fishery Management Councils to assist them in formulating fishery management plans. In 2002, $1,197,300 was awarded by cooperative agreement to ten states.

- The Anadromous and Interjurisdictional Fisheries Management Programs are national programs that provide funding for grants and cooperative agreements to obtain catch and effort statistics and other fisheries information. This information is used to support management decisions both at the state level and those required under the Magnuson-Stevens Fishery Conservation and Management Act, and the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA). Under the Atlantic Coastal Act, financial assistance is provided to support and encourage the development, implementation, and enforcement of interstate conservation and effective management of Atlantic coastal resources. For 2002, three southeastern states received $112,342 for the Anadromous Fisheries Program. The Interjurisdictional Fisheries Program funded eleven recipients for $1,016,241, and the ACFCMA programs provided $794,920 to four states. This was the third year that funds were provided for the Atlantic Coastal Cooperative Statistics Program (ACCSP) in the Southeast. Three states received $226,551 under the ACCSP.
- The Marine Fisheries Initiative (MARFIN) Program promotes and endorses projects which seek to optimize economic and social benefits from marine fishery resources through cooperative efforts that evoke the best research and management talents of the Southeast Region. The intent is to focus projects funded by MARFIN into cooperative efforts that provide clear answers for fishery needs covered by the NOAA Fisheries Strategic Plan. An annual MARFIN Report is distributed throughout the nation. In 2002, 22 new MARFIN projects totaling $2.008 million and four continuation agreements totaling $824,355 were awarded.
- The Saltonstall-Kennedy (S-K) Grant Program is a national competitive program administered by the NOAA Fisheries Headquarter's office. The program provides financial assistance (grants or cooperative agreements) for research and development projects to benefit the U.S. fishing industry. Eight grants were awarded in the Southeast Region totaling $1,446,914.
- Under the Unallied Science Program, grants and cooperative agreements in the amount of nearly $8.33 million were provided to several states and research groups. Work included research on aquaculture and enhancement of wild stocks and included efforts to protect endangered species and marine mammals.
- The Unallied Management Projects provided $518,000 for shrimp trawling and red snapper research and a website for minority students.
- Three fishery management councils in the Southeast U.S. received a total of $5.913 million in 2002 to conduct fisheries management activities in accordance with the Magnuson-Stevens Fishery Conservation and Management Act.

ECONOMICS PROGRAM

- Worked with three southeast fishery management councils to develop the economic and social portion of Operations Plans for products and services to be delivered to the councils during FY2002/2003.
- Conducted recreational economic assessments for Gulf of Mexico red grouper fishery and made presentations to the Gulf of Mexico's Socio-Economics Panel meeting.
- Conducted an economic assessment of the Texas cooperative shrimp closure.
- Conducted an economic assessment of the proposed TED rules.
- Brought SAFE files up to date and provided Councils and others with the latest SAFE listings.
- Developed a proposal and monitored a grant to the South Atlantic Fishery Management Council to conduct research on fishing communities in the U.S. South Atlantic.
- Conducted review and/or authorship activities for the following fishery management plans and amendments: Gulf For-Hire Moratorium, Gulf Red Snapper Rebuilding, Gulf Reef Fish 18 (red grouper), Gulf Shrimp 10 (BRDs), Gulf Secretarial Amendment 1 (red grouper), Gulf Secretarial Amendment 2 (greater amberjack), South Atlantic Calico Scallop, South Atlantic Shrimp 5 (rock shrimp), South Atlantic Sargassum, Protected Resources TEDs, Protected Resources Right Whales.
- Participated on technical work groups, panels, and committees as part of the Atlantic Coastal Cooperative Statistics Program, and Fisheries Information Network including the committee for Economic and Social Sciences (CESS) and the Socioeconomic Work Group (SEWG).

SOUTHEAST FISHERIES SCIENCE CENTER

Research Conducted in the U.S. Gulf of Mexico

Dynamics of Pink Shrimp Immigration to Florida Bay from Tortugas Spawning Grounds

This research effort described the spatial and temporal characteristics of postlarval pink shrimp immigration to Florida Bay from offshore spawning grounds and determined the major factors influencing immigration patterns. The effects of meteorological and oceanographic processes as well as water management practices that might affect salinity gradients were also investigated. Sampling was conducted monthly with channel nets in the major passes on the boundaries of the bay in an effort that began in January 2000. Total postlarval transport will be determined using data collected by the U.S. Geological Survey in a collaborative project.

Distribution of Pink Shrimp and other Forage Species in Nearshore Western Biscayne Bay in Relation to Salinity Zonation

The objective of this research was to determine animal characteristics and baseline distributions in the nearshore western Biscayne Bay, which will be affected by the Comprehensive Everglades Restoration Project (CERP) water management changes, including efforts to reestablish more ecological favorable patterns of freshwater flow to Biscayne Bay. This project collects and analyzes baseline information on pink shrimp and forage fish densities in relation to salinity patterns.

Monitor and Assess Marine Protected Areas in the Florida Keys

The SEFSC biodiversity investigations are conducting coral reef surveys and are making an assessment of the performance of no-take marine reserves in the Florida Keys National Marine Sanctuary (FKNMS) as part of a five-year review. The assessment used non-destructive underwater visual survey methods to assess reef fish community structure inside and outside of no-take marine reserves. The survey also gathers habitat and other environmental information to correlate with the location of reef fish sightings and to better understand the seasonal and spatial distribution and movements of these species.

Goliath Grouper Assessment Activities and Identification of Essential Habitat

Goliath grouper is currently a candidate for the U.S. Endangered and Threatened Species list, and all harvest was prohibited in the U.S. waters since 1990. The newly-implemented Southeast Data, Assessment, and Review (SEDAR) process was used this year for goliath grouper with the completion of a data workshop on goliath grouper in February 2003. In addition, maps of essential fish habitat for goliath grouper have been created and compiled in a final report to the National Fish and Wildlife Foundation. These maps will be used to further analyze the attributes of goliath grouper nursery habitat and the effects of habitat alteration and restoration on juveniles.

Establish Baseline Conditions for Looe Key Reef National Marine Sanctuary

A final report documenting 1983 baseline conditions for Looe Key Reef National Marine Sanctuary was published in 2003. Since 1983 dramatic changes have occurred at Looe Key reef including dramatic loss of acroporid coral cover and near extirpation of Diadema sea urchins – an important grazer. The report provided a historically significant study of the coral reef habitat including a quantitative description of the reef fish abundance, frequency of occurrence, and distribution. In cooperation with NOS and the Sanctuary Program, this product quantitatively documents conditions at Looe Key with color images.

Investigation of Marine Turtles in Coastal Waters of Southwestern Florida

A multi-year program for tagging sea turtles in coastal waters of southwestern Florida targets Kemp's ridley sea turtles and includes the tagging of immature green, hawksbill, and loggerhead turtles in the region. Reports of tags issued and recovered are added to the sea-turtle tagging database. The results are used to establish long-term indices of marine turtle abundance and habitat requirements.

Sea Turtle Stranding and Salvage Network

The Sea Turtle Stranding and Salvage Network (STSSN) continued to collect and archive information on species, size, and apparent cause of death of turtles that wash up along the southeastern United States. Information on stranded turtles is also collected, and summary information posted on the STSSN web site by statistical zone and species. Necropsies of dead turtles were conducted and hard parts provided to the National Sea Turtle Ageing Laboratory for ageing research. Tissue samples are also provided to the National Sea Turtle Genetics Laboratory for genetic stock research.

"Fisheries of the United States" Data

Landings and associated statistical data were provided for the annual publication of *Fisheries of the*

United States. NOAA Fisheries publishes this annual report which contains detailed statistics on commercial and recreational fisheries. The report included landings by distance from shore, landings of freshwater fish and shellfish, landings by U.S. flag vessels at foreign ports, disposition of domestic landings, and other detailed summaries of the commercial statistics collected and/or maintained by the SEFSC.

Vessel Logbook Program, Trip Interview Program, and General Canvass – Annual Landings Database

Using a logbook system, SEFSC agents collected and archived detailed catch and effort data directly from vessels that are required to have federal vessel permits. Data collected included size frequency, catch/effort, and biological data (otoliths, gonads, stomach content, etc.) under a Trip Interview Program which ensured that established data collection and processing standards are maintained. SEFSC agents have been archiving commercial landings statistics (known as the Accumulated Landings System) collected by the individual state fishery agencies throughout the southeastern United States.

Shrimp Stock Assessment in the Gulf of Mexico

Changes in age structure and population size of shrimp resources from the U.S. Gulf of Mexico waters were examined annually using records of landings, fishing effort, and size frequencies of shrimp from appropriate fisheries and available years. Trends in landings by total number, total weight, mean size, and catch per unit effort are then evaluated. Management options for improving the status of species are discussed and evaluated.

Texas and Louisiana Brown Shrimp Harvest Forecast

Annual forecasts for the harvest of Texas and Louisiana brown shrimp are used to guide management measures for improving the potential productivity of the northwestern Gulf of Mexico shrimp fishery. Forecasts for the Texas nearshore and offshore brown shrimp fishery were based on: 1) an environment model incorporating temperature, rainfall, and tidal water height and 2) catch and effort from the Galveston Bay bait and commercial bay shrimp fisheries. A brown shrimp forecast for Louisiana is derived from catch and effort statistics collected in the inshore, nearshore, and offshore waters. The 2003 abundance indices are varied with respect to offshore brown shrimp production. The Galveston Bay bait index forecasts a below average year at 21.6 million pounds from offshore Texas waters from July 2003 through June 2004. The 2003 Louisiana indices point to an above average yield of approximately 42.0 million pounds of brown shrimp this season from west of the Mississippi River to the Texas-Louisiana border. Overall, the western Gulf of Mexico should expect an annual brown shrimp production of approximately 63.6 million pounds during the 2003-2004 season. This is above the 1960-2001 historical average of 55.2 million pounds for the two-state area.

Shrimp Fishery Bycatch Data

Observers, working on cooperating shrimp boats operating throughout the U.S. Gulf of Mexico, collected data that included: fishery specific information on catches from both BRD/TED-equipped (experimental) nets and from TED-equipped (control) nets. All selected species (e.g., red snapper, king and Spanish mackerel, etc.) were counted, weighed, and measured. Captured sea turtles are measured, tagged, photographed, and released.

Sea Turtle and Marine Mammal Associations with Petroleum Platforms

The occurrence and types of sea turtles and marine mammals at petroleum platforms are being documented primarily in the north-central Gulf of Mexico. NOAA Fisheries cooperated with the U.S. Minerals Management Service and petroleum production companies to place observers on platforms scheduled for removal by explosives. Observers monitor waters around the platforms before and after detonations: identifying, counting, and timing protected species that may appear in the areas.

Rear Captive Sea Turtles for Research

SEFSC continued to provide captive-reared loggerhead sea turtles for TED testing and certification trials and for longline investigation. This involved obtaining 200 hatchling loggerheads from Clearwater, Florida, each year and holding them in captive rearing for up to four years. Cooperation is maintained with the Kemp's Ridley Working Group, Mexico's SEMARNAP, the Turtle Expert Working Group, MEXUS-Gulf, Texas Parks and Wildlife Department, Bradley University, University of Texas Medical Branch, Texas A&M University, the Houston Zoo, the Gladys Porter Zoo, and other federal and state agencies.

Sea Turtle Stranding Surveys

SEFSC documented sea turtle strandings within shrimp statistical sub-area 18 on the upper Texas coast. Live-stranded sea turtles were collected for

medical treatment and rehabilitation. Sea turtle carcasses were collected for necropsies to determine, if possible, the cause of death. Results are coordinated with U.S. Coast Guard aerial counts of shrimping and other commercial fishing vessels along the Louisiana and Texas coasts as requested before, during, and immediately following the Texas Shrimp Closure. Additionally, this fosters close cooperation and coordination among state and federal agencies.

Impacts of Fishing on Habitats

Research on the impacts of fish traps and lobster traps on coral reef ecosystem habitats continued with studies conducted in Florida, Puerto Rico, and the U.S. Virgin Islands in conjunction with the FMRI, University of Puerto Rico, and the Virgin Islands Fish and Wildlife. The objectives were to develop methods for rapid, large-scale surveys of the distribution of traps to estimate potential for habitat damage in shallow and deep waters using available habitat maps, to document gear effects on habitat (particularly hard corals), to estimate recovery rates, and to suggest less destructive fishing methods, if needed.

Information to Manage Economically Important Fish Species

This research provided information on age, growth, reproduction, life history, and distribution of several species of importance. It included the processing of 2001 and 2002 red snapper age samples, as well as archived samples from the early 1990s; an analysis of geographic structure of red snapper stocks; and research on yellowtail snapper, red porgy, Warsaw grouper, and speckled hind (two species of concern for threatened and endangered status), yellowedge grouper, goliath grouper, and king and Spanish mackerel. Pre-recruitment indices are being developed to determine whether shallow water abundance levels of gag, scamp, and red grouper can be used to forecast future year class strength.

Abundance and Distribution of Commercial Reef Fishes in Marine Reserves and Complete Mapping of Adjacent Inner Shelf Habitat

A continuation of annual assessments of abundance and distribution of economically valuable reef fish (grouper and snapper) was conducted in the Madison-Swanson and Steamboat Lumps Marine Protected Areas and the adjacent Twin Ridges control area off northwestern Florida. These sites were chosen for four-year experimental closures and scheduled to be reevaluated by the GMFMC in July 2003. Annual assessments were imperative to determine changes in the fish assemblages through time and provide the best available scientific information to the Council for the promulgation of management actions. Analysis from 2001 and 2002 indicated an increase in reef fish abundance and distribution during the closure period.

Information for Management of Atlantic Shark Populations and Fisheries

This effort updated catch of Atlantic sharks for inclusion into the FY2003 Stock Assessment and Fishery Evaluation Report (SAFE Report) and provided information on shark ecology and life history. These updates included species-specific estimates of commercial landings, recreational catches, and bycatch of large coastal, small coastal, and pelagic sharks in U.S. waters of the western North Atlantic, Gulf of Mexico, and northern Caribbean. Average sizes estimated from the sampled fraction of the various commercial and recreational data collection programs are provided. Research also addressed coastal shark abundance and distribution, nursery and essential fish habitats, movements, and activity patterns. Bycatch from the shark drift gill net fishery was monitored to assess takes of other fishes, marine mammals, turtles, and birds.

Gulf Menhaden Fisheries Data

Research personnel routinely sampled Gulf menhaden purse seine fisheries for landings data, age and size estimates, and the incidence of lesions and diseases. Fish scales are aged annually to provide accurate, precise, and timely data on age structure of these stocks. Reports have been provided to industry, states, and other NOAA Fisheries partners and clients, and NOAA Fisheries stock-assessment personnel at intervals from weekly to annual. Results from this activity are critical to stock assessments.

Southeast Region Headboat Survey

Port agents stationed at 12 ports along the South Atlantic and Gulf of Mexico coasts continued to sample fish from the landings of the headboat fishery, and obtained length, weight, otolith, gonad, and other biological materials for analysis. In addition reports of trips made by individual headboats are obtained and used to calculate monthly and annual estimates of landings and fishing effort.

National Sea Turtle Ageing Laboratory

A laboratory is being established with the primary purpose of ageing sea turtles. Inasmuch as many of the demographic parameters used to determine

the status of fish and mammal populations was contingent upon obtaining age estimates, sea turtle population management has been hindered by the lack of a method to do so. Recently, preliminary methodology was developed and calibrated to age Kemp's ridley and young loggerhead turtles from growth layers in bone. These methods are being refined and counts of growth layers will be described with a goal of standardized techniques. Further methods will be explored to age old turtles as well as to expand or develop methods for ageing other species of sea turtles, particularly green and leatherback turtles. Laboratory work will be complemented by tetracycline marking to mark bone of turtles caught during the in-water turtle studies.

TED Workshops

In anticipation of proposed new TED regulations, workshops were conducted to improve TED technical operation and compliance by developing training, enforcement, and educational materials throughout the southeast region. The purposes of the workshops included the review of TEDs regulations and the process for enforcing them, establishing at-sea protocols for boarding vessels, checking TEDs for correct installation, and conduct training of new enforcement officers.

Hypoxia Maps in the Western and North-Central Gulf of Mexico

This research acquires, processes, and transmits bottom oxygen data at approximately weekly intervals during the summer groundfish survey and posts contour maps based on the data on the publically-accessible Coast Watch web site.

Surveys along the Continental Shelf and Shelf Edge

The annual SEAMAP reef fish survey was conducted on reefs and banks located from Brownsville, Texas, to the Dry Tortugas, Florida. Reef fish abundances were measured using video cameras and fish traps. In addition, since the SEAMAP video/trap survey of reefs and banks does not cover the entire geographic distribution of red snapper, a longline survey was conducted that targets large red snapper distributed along the continental shelf.

Aerial Surveys of Coastal Bottlenose Dolphin

Current estimates of the abundance of 36 stocks of bottlenose dolphin in the northern Gulf of Mexico are seven to ten years old. Line-transect aerial surveys were conducted to develop new estimates.

Stock Structure of Mississippi Sound Bottlenose Dolphin

Biweekly surveys of bottlenose dolphin in selected areas of Mississippi Sound were conducted. Photographs of the dorsal fin of each individual encountered were collected for individual identification. The photographs support bottlenose dolphin association patterns, site fidelity, and abundance using capture-recapture techniques. Once location histories are established for a number of dolphins, biopsy samples will be collected from known individuals for genetic analyses.

SEAMAP Spring Surveys in Offshore Waters

Plankton samples and environmental data were collected during the annual spring survey of offshore Gulf waters primarily to gather information on the occurrence and abundance of Atlantic bluefin tuna larvae. Polish scientists will remove all larvae from the samples and identify them to the family level or, for selected groups, to genus and/or species. Tuna larvae and associated data will be sent to SEFSC scientists for verification and data analysis.

Demersal Resource and Plankton Surveys

Surveys were conducted from Mobile Bay, Alabama, to Brownsville, Texas, in depths of 9 to 110 meters (5 to 60 fathoms). The surveys used standard SEAMAP sampling gear (40' trawls with 5'x40" wooden doors) and collected environmental data to help understand the abundance and distribution of commercially and recreationally important species. Plankton samples collected during the surveys were sent to the Sea Fisheries Institute in Gdynia, Poland, for analysis.

Trawl Survey of Small Pelagic/Deep Water Fishes

Trawl surveys were conducted for small pelagic and deep-water fishes along the coast from Texas to south Florida. A bottom trawl with a 90' high opening was used to investigate catch trends and collect length frequency data and biological samples. Environmental information was also collected to correlate with catch trends and length frequencies.

Photo-Identification of Sperm Whales

Monthly surveys of sperm whales were conducted in the north-central Gulf of Mexico from the R/V CARETTA. The surveys employed a two-element passive acoustic array and visual observations. When sperm whales were encountered, photographs of the

flukes for each individual were collected for individual identification. The photographs allow studies of sperm whale association patterns, site fidelity, and abundance using capture-recapture techniques.

Stock Assessments

A stock assessment was conducted for Gulf Spanish mackerel this year, and assessments were conducted for red grouper and yellowedge grouper. The newly-implemented Southeast Data Assessment and Review (SEDAR) process addressed yellowtail snapper at a SEDAR data workshop. Also, a full yellowtail snapper stock assessment for the Gulf of Mexico and South Atlantic was conducted. Lead analysts for the assessment were FMRI in collaboration with the SEFC. A SEDAR review panel meeting was scheduled to take place in Tampa in July 2003. Data for goliath grouper were also reviewed, but the SEDAR data workshop concluded that existing data would not support a "normal type" analytical assessment. Vermilion snapper data were likewise reviewed to make sure that all associated data are identified and available.

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

Wayne Swingle, Executive Director

The Gulf of Mexico Fishery Management Council (Council) is one of eight regional fishery management councils which were established by the Fishery Conservation and Management Act in 1976 (now called the Magnuson-Stevens Fishery Conservation and Magnuson Act). The Council prepares fishery plans which are designed to manage fishery resources from where state waters end out to the 200-mile limit of the Gulf of Mexico. These waters are also known as the exclusive economic zone (EEZ).

The Council consists of 17 voting members as follows: the southeast regional director of the 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 for three-year terms (and can serve for a maximum of three consecutive terms). In addition, four nonvoting members represent the U.S. Coast Guard, Fish and Wildlife Service, Department of State, and the Gulf States Marine Fisheries Commission.

The Council meets every two months at various locations around the Gulf Coast. Before final action on any proposed rule change is taken, public hearings are held throughout the Gulf as well as at the Council meeting where final action is scheduled. Proposed rule changes are then submitted to the NMFS for further review and approval before being implemented.

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 the following panels and committees:

- **Advisory Panels**: recreational and commercial fishermen, charterboat operators, buyers, sellers, and consumers who are knowledgeable about a particular fishery.
- **Scientific and Statistical Committees**: economists, biologists, sociologists, and natural resource attorneys who are knowledgeable about the technical aspects of fisheries in the Gulf.
- **Stock Assessment Panels**: biologists who are trained in the specialized field of population dynamics and who assess the available biological data and advise the Council on the status of stocks and level of allowable biological catch.

STATUS OF FISHERY MANAGEMENT PLAN DEVELOPMENT

Fishery Management Unit	Completed Implementation as of December 2002	Target Date	Remarks
Billfish Plan*	Amendment 1 implemented.	1988	
Coastal Herring	Final profile completed.	None	No further action.
Coral	Amendments 1-4 implemented.	1984	
Deep-Water Crab	FMP Proposed.	2003	Options paper being drafted.
Dolphin/Wahoo	Final FMP completed.	2002	FMP terminated for Gulf region.
Groundfish	Draft FMP completed; FMP development suspended.	None	
Mackerel[1,2]	Amendments 1-14 implemented.	1983	

Fishery Management Unit	Completed Implementation as of December 2002	Target Date	Remarks
Reef Fish[1,2]	Amendments 1-17, 19, and 20 implemented. Amendments 8 and 10 withdrawn.	1984	Amendments 18 and 21 under development.
Red Drum[1,2]	Amendments 1-4 implemented.	1986	
Shark/Swordfish/Tuna*	HMS FMP implemented.	1999	
Shrimp[1,2]	Amendments 1-9 and 11-12 implemented.	1981	Amendment 10 submitted for implementation.
Spiny Lobster[1,2]	Amendments 1-7 implemented.	1982	Amendment 8 under development.
Stone Crab[1,2]	Amendments 1-8 implemented.	1979	
EFH Amendment	Amendment implemented (partially disapproved). Amendment 2 implemented.	1999	DEIS being developed.
SFA Amendment	Amendment implemented (partially disapproved)	2000	Re-submission document for Section 7.2 submitted for implementation.

[1]Monitoring report completed.

[2]Operations plan completed or under development.

*Secretarial FMP affecting Gulf. The Council has a consultation role and may convene SSC, AP, or committees for advice on regulatory measures. Shark, tuna, and swordfish are in a single FMP.

UNITED STATES FISH AND WILDLIFE SERVICE

Douglas J. Frugé, Gulf Coast Fisheries Coordinator

Personnel of the U.S. Fish and Wildlife Service (FWS) attended the spring (March 18-21 – Biloxi, Mississippi) and fall (October 15-17 – Duck Key, Florida) meetings of the GSMFC including meetings of the Technical Coordinating Committee (TCC), TCC Habitat Subcommittee, State-Federal Fisheries Management Committee, and Commission Business Session. Participating personnel were primarily Columbus Brown, Special Assistant to the Regional Director for Councils, Commissions, and the Gulf of Mexico Program and Doug Frugé, Gulf Coast Fisheries Coordinator. Fish and Wildlife Biologist, Mike Brim (Ecological Services Field Office, Panama City, Florida) attended the spring TCC Habitat Subcommittee meeting.

ANADROMOUS FISHERIES

Striped Bass Fishery Management Plan Revision

A major focus of the FWS Gulf coastal fisheries activities during 2002 was cooperative participation with the GSMFC and Gulf States in efforts to revise the *Striped Bass Fishery Management Plan for the Gulf of Mexico* (Striped Bass FMP). Most of this activity was centered in the Gulf Coast Fisheries Coordination Office (FCO), which is co-located with the GSMFC in Ocean Springs. Doug Frugé served as chair of the Striped Bass Technical Task Force (TTF), the GSMFC entity working on the revision.

Major accomplishments and activities included:

1) Producing a summary of the proceedings of the Striped Bass Workshop that was held in New Orleans, Louisiana, on December 4-5, 2001 to assist in developing the FMP revision (submitted to the GSMFC on February 5, 2002);
2) developing a questionnaire for completion by TTF members regarding key questions to be dealt with in the revision (submitted to GSMFC February 8, 2002);
3) chairing a TTF meeting in Pensacola, Florida, on February 25-26, 2002;
4) chairing a TTF meeting in New Orleans, Louisiana, on Jun 17-19, 2002;
5) drafting FMP sections addressing rivers, watersheds, and inland habitat important to striped bass in the Gulf (submitted to GSMFC June 7 and revisions of some sections provided September 18);
6) chairing a TTF meeting in Pensacola Beach, Florida, on October 1-2, 2002.

Fisheries Stewardship Initiative Project

The final editorial changes to the summary report for the FWS Fisheries Stewardship Initiative project *Restoration of Striped Bass in Three Gulf of Mexico River Systems* were completed in January, and copies were mailed to a select distribution list on January 16 by the Gulf Coast FCO. The Stewardship Initiative Project was completed in part through a cooperative agreement with the GSMFC and involved the states of Florida, Louisiana, and Mississippi.

Apalachicola-Chattahoochee-Flint Rivers Striped Bass Restoration Technical Committee

The FWS Panama City Fisheries Resource Office (FRO), Florida, hosted the 19th Annual *Morone* Workshop at Apalachicola, Florida, on February 6-7, 2002. The annual workshop is focused on striped bass restoration in the Apalachicola-Chattahoochee-Flint (ACF) rivers system. Personnel from several FWS offices (Panama City FRO; Southeast Regional Office, Atlanta, Georgia; Warm Springs NFH, Georgia; Welaka NFH, Florida) attended a meeting of the ACF Striped Bass Technical Committee on September 24 in Chattahoochee, Florida.

Striped Bass Fry/Fingerling Production and Stocking

Through the cooperative efforts of a number of FWS offices (Welaka NFH; Inks Dam NFH, Texas; Private John Allen NFH, Mississippi; Warm Springs NFH; Panama City FRO; Southeast Region Fisheries Office; and Gulf Coast FCO) as well as the states of Alabama, Florida, and Georgia approximately 822,000 Phase I and 91,000 Phase II Gulf race striped bass fingerlings were stocked within the species' historic range in Gulf coastal rivers as part of the multi-agency anadromous striped bass restoration program in the Gulf. Welaka NFH was key to this effort in the spawning of broodfish and production of 2,952,000 of the 3,412,000 fry used in producing the fingerlings.

The Gulf Coast FCO provided broad level coordination with a number of other FWS, state agency, GSMFC, and university personnel regarding spawning activities, genetics screening, and fry/fingerling distribution.

The Southeast Region Fisheries Office (Fisheries Staff Specialist Tom Sinclair) coordinated development of and managed a contract with the New York University School of Medicine for striped bass broodfish genetics screening during the 2002 spawning season. The purpose of the screening was to determine specific genotypes of striped bass being used for hatchery production and subsequent restoration stocking within the ACF and other river system. Knowledge regarding the specific genotypes of fingerlings being produced is essential in applying genetic tagging procedures and assuring that only Gulf race striped bass are used in restoration stocking efforts. The data are also useful in monitoring genetic composition of the broodstock sources used in the restoration efforts. The office also began compiling a historical database on genetics analyses conducted on striped bass in Gulf of Mexico rivers.

The Southeast Regional Fisheries Office also worked closely with Welaka NFH and the Dexter Fisheries Technical Center (FTC), New Mexico, in efforts to refine genetics screening procedures at the FTC for striped bass and evaluate replication of samples used in previous contracts. The FTC capability in this area would provide another option for conducting the screening in future years in case of contract difficulties or if significant cost savings can be realized.

The Warm Springs FTC (Fishery Biologists Bill Wayman, Greg Looney, and Lael Will) induced spawning condition in a male Gulf race striped bass through hormone injection in February. Sperm were collected and cryopreserved as part of a study protocol to establish a Gulf race striped bass sperm repository. In April sperm from an additional 16 males being held at Mammoth Spring NFH, Arkansas, was collected bringing the total of 408 samples in the repository. The repository will include sperm from as many Gulf race striped bass males as possible to provide an alternative source of genetic material for use in the restoration stocking program.

Other Striped Bass Restoration Activities

The Panama City FRO (Fishery Biologist Laura Jenkins) in cooperation with Welaka NFH (Hatchery Manager Alan Brown), Natchitoches NFH, Louisiana (Assistant Hatchery Manager Jan Dean), and Warm Springs NFH (Hatchery Manager Carlos Echevarria) launched a study in 2001 to evaluate the importance of Phase II stocking of striped bass in the Apalachicola system. About 100,000 of the Phase II fingerlings stocked in the lower river in 2002 were tagged with coded wire tags. These fish will be sampled in succeeding years to determine survival and growth rates and ultimate contribution to broodstock. The Florida Fish and Wildlife Conservation Commission (FWC) provided invaluable assistance tagging the fish.

Proposals for an assessment of the biological/taxonomic significance of the Gulf race of striped bass were submitted to the FWS Southeast Regional Office (RO) on April 5 under a call for research proposals by the Warm Springs Regional Fisheries Center (RFC), Georgia, and a call for proposals for projects to be funded by delayed allocations of the Fiscal Year 2002 FWS budget. The proposal was not selected for funding from either source.

During the spring, the FWS Georgia Ecological Services Field Office (ESFO) addressed potential effects on striped bass habitat in relation to proposed hydropower retrofit construction at the George W. Andrews (Columbia) Lock and Dam, a U.S. Army Corps of Engineers facility on the Chattahoochee River.

Doug Frugé was interviewed by telephone on December 9 by a writer preparing an article on striped bass for *Saltwater Sportsman* magazine. The article was to cover striped bass on both the Atlantic and Gulf coasts and will be published in spring 2003.

Gulf Sturgeon Recovery Activities

The Gulf Coast FCO provided comments to the LDWF January 29 on their final report for a project to determine Gulf sturgeon population characteristics and habitat use in the Lake Pontchartrain basin in Louisiana. The LDWF had received a National Fish and Wildlife Foundation grant to help fund the project, and in-kind services by the FWS in assisting with the project were used to satisfy part of the matching funds.

The Baton Rouge FRO, Louisiana, continued providing assistance to the LDWF and the Lafayette ESFO, Louisiana, in Gulf sturgeon sampling to determine population characteristics and movements in the rivers and nearshore coastal areas of the Lake Pontchartrain drainage basin, as well as the Pearl River and Mississippi Sound. In addition to the sturgeon population data, hydrologic data were gathered for use in designing a proposed fish passage project on the

Bogue Chitto River focused on facilitating passage of sturgeon and other species to habitats upstream of a sill blocking fish movement during most of the year. Sampling/tracking efforts were conducted throughout the year.

On January 16 and 23, Panama City (Fishery Biologist Frank Parauka) and Baton Rouge FRO (Fishery Biologist Cedric Doolittle) personnel searched for potential Gulf sturgeon spawning habitat in the Bogue Chitto and Pearl rivers, Louisiana and Mississippi. Some potentially suitable areas were discovered.

Warm Springs FTC personnel (Dr. Robert Bakal and Brian Hickson) transported Gulf sturgeon to the North Carolina State Veterinary School in February to perform experimental cataract surgery to improve the vision of the animals. The surgery was successful and the fish recovered well. A film crew from the Animal Planet Network recorded some of the work, and the team of doctors was interviewed. These sturgeon and others were later sterilized, radio-tagged, and released as sentinel fish to attempt to locate habitat and possible remnant populations above Jim Woodruff Lock and Dam in the ACF rivers system. A total of five wild and 12 sterilized captive-reared sturgeon were radio-tagged and released in the Flint River, just above the dam and also below the dam in July. The fish released just above the dam passed through the lock into the lower river soon after stocking. The project was conducted in cooperation with the Panama City FRO and the Georgia Department of Natural Resources. A school outreach program focused on the Gulf sturgeon sentinel project was initiated by the Warm Springs FTC.

The FWS and NMFS jointly published a notice in the *Federal Register* on June 6 proposing to list critical habitat for the Gulf sturgeon. Public hearings on the proposal were held during the week of August 19. A final decision on the critical habitat designation was due in February 2003 by court order.

The Gulf Coast FCO staffed an exhibit with information primarily on Gulf sturgeon at the Private John Allen NFH Centennial Celebration in Tupelo, Mississippi, on June 15.

Florida Senator Bob Graham spent a day in September working with the Panama City FRO sampling Gulf sturgeon on the Brothers River, an Apalachicola River distributary. The Senator gained a new appreciation for the work of the FWS and the plight of the Gulf sturgeon. The event was well attended by the media and resulted in several major stories. The Senator had lunch that afternoon with local groups interested in supporting his bill to de-authorize dredging for commercial navigation on the Apalachicola River.

Personnel from numerous FWS offices attended the annual Gulf sturgeon recovery coordination meeting at the University of Southern Mississippi in Hattiesburg during September 19-20.

The Panama City FRO conducted a mark/recapture study to estimate the Gulf sturgeon population in the Escambia River, Florida, during October. Unfortunately, the downstream migration was delayed by weather conditions. Few fish were recaptured.

Alabama Shad

A proposal for completing a range-wide status review for Alabama shad that was begun by the FWS a number of years ago was drafted by the Gulf Coast FCO and submitted on September 25 to the NMFS Southeast Region for funding. The Alabama shad is a NMFS candidate species for listing under the Endangered Species Act. The proposal was not selected for funding.

OTHER COASTAL FISHERIES

The Gulf Coast FCO was contacted on April 18 by Dr. Chris Taylor, Mississippi State University, regarding a workshop on the Gulf Coast Cooperative Studies Units (GCCSU) scheduled for early June. The GCCSU is an effort to improve coordination by cooperative research units of the U.S. Geological Survey, Biological Research Division, with other federal and state agencies and other organizations interested in research focused on the Gulf coastal ecosystem. Information on the meeting was provided to other FWS offices with interests in the northern Gulf of Mexico coast.

The Gulf Coast FCO provided comments on the draft National Artificial Reef Plan revision to the FWS Southeast RO through the FWS environmental review (ER) process on April 23. Doug Frugé attended the meeting of the Gulf of Mexico/Caribbean Fisheries Information Network (FIN) during June 4-6 in New Orleans, Louisiana.

On request from the FWS Southeast Region Migratory Bird Office, the Gulf Coast FCO sent an inquiry to the Gulf of Mexico state marine fisheries agencies on August 28 requesting information on horseshoe crab populations in the Gulf. Horseshoe crab eggs are a critical food component of several shorebird

species on the Atlantic coast, and horseshoe crab populations in the Delaware Bay area have declined substantially. The information request was part of an effort to determine if similar population declines have occurred in other areas as well. Requested information was provided to the Migratory Bird Office on September 15. Meeting summaries and proposed action items resulting from a meeting on horseshoe crab management were reviewed and comments provided to the Migratory Bird Office as requested on November 25.

HABITAT PROTECTION/ENHANCEMENT

The FWS ESFOs at: Vero Beach, Jacksonville (St. Petersburg Sub-office), and Panama City, Florida; Daphne, Alabama; Lafayette, Louisiana; and Houston and Corpus Christi, Texas; continued efforts to protect and restore coastal applications, consultations involving potential effects on species listed under the Endangered Species Act, and activities under the FWS Environmental Contaminants and Coastal programs. Major specific examples included:

- work with the CE on a 20-year dredged material disposal plan for the Calcasieu River Ship Channel below Lake Charles, Louisiana, in which the FWS recommended an alternative plan to beneficially place the material for marsh restoration on Sabine NWR (Lafayette ESFO, Louisiana);
- cooperative efforts to restore coastal marsh habitat on the east end of Deer Island near Biloxi, Mississippi (Jackson ESFO, Mississippi);
- negotiations with the CE regarding dredge disposal alternatives for deepening navigation channels in the lower Pascagoula River in Mississippi (Jackson ESFO, Mississippi);
- marsh restoration in upper Mobile Bay, Alabama (Daphne ESFO); and
- shoreline stabilization in Weeks and Perdido bays, Alabama (Daphne ESFO).

The FWS, primarily through the Panama City and Daphne ESFOs, continued working in efforts to determine and protect water needs of aquatic resources in the ongoing negotiations involving the states of Alabama, Florida, and Georgia with various federal agencies on water use and allocations in the Alabama-Coosa-Tallapoosa (ACT) and the ACT river basins. The states agreed in principal to a draft ACF water allocations formula early in 2002, but this was not finalized. Negotiations and ACT formula discussions were extended into 2003.

The Florida Gulf Coast Program, through the Jacksonville and Panama City ESFOs contributed funding and technical assistance to numerous partners for a variety of habitat protection and restoration projects, including:

- restoring water circulation patterns at Fort DeSoto in Pinellas County, through replacing portions of two causeways with open span bridges to improve water quality and enhance about 200 acres of shallow estuarine aquatic habitat, including shoalgrass and turtle grass beds;
- creation of a management plan to sustain and preserve Hogtown Bayou, an approximately 3,800-acre area of Choctawhatchee Bay, which is threatened by rapid and intensive urbanization;
- efforts to establish a managed, multijurisdictional coastal corridor system that includes coastal wetlands, scrub habitat, riparian habitat, and other native communities to benefit all fish and wildlife species of western Florida;
- development of options and mitigation of impacts due to open water disposal of dredged material from St. Andrew Bay; and
- shoreline stabilization at MacDill Air Force Base to protect and restore a variety of coastal wetland and upland habitats.

The Lafayette ESO continued (in consultation with coastal Louisiana NWRs staff) representing the FWS on the interagency Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA or Breaux Act) Team in developing and sponsoring wetland restoration projects focused on reducing subsidence and erosion-related wetlands loss in coastal Louisiana, as well as participating in the Louisiana Coastal Area Comprehensive Coastwide Feasibility Study (Coast 2050) with the U.S. Army Corps of Engineers and the Louisiana Department of Natural Resources.

Three ESFOs were involved in management of mitigation banks encompassing Gulf estuarine habitats to provide compensation for similar habitats loss through permitted development activities. These included the Vero Beach ESFO (Little Pine Island Mitigation Bank in Lee County, Florida), the Lafayette ESFO (Tenneco-Laterre Corporation Mitigation Bank in Terrebonne Parish, Louisiana), and the Jackson ESFO (Old Fort Bayou Mitigation Bank in Jackson County, Mississippi).

The FWS continued providing support for operations at Rancho Nuevo, Mexico, to protect the Kemp's ridley sea turtle nest area located there. A total of 6,436 Kemp's ridley sea turtle nests were recorded during the 2002 nesting season in Mexico. The FWS also established a Kemp's Ridley Recovery Team in coordination with the NMFS during 2002; the team,

which includes representation from Mexico, met in October to begin revising the Kemp's Ridley Recovery Plan.

The Gulf Coast FCO reviewed and provided comments on December 5 to the National Fish and Wildlife Foundation regarding a grant proposal by the Mississippi Department of Marine Resources (MDMR) under the Shell Marine Grant Program. The MDMR was later awarded the grant for the project, the purpose of which was to help restore oyster reef habitat in Mississippi Sound.

Gulf of Mexico Program

Several FWS offices in the Southeast and Southwest regions represented the FWS on focus teams and committees of the Gulf of Mexico Program (GMP). These included the GMP's Management Committee (Columbus Brown); the Invasive Species Focus Team (Patricia Carter, Southeast RO; Bob Pitman, Southwest RO, Albuquerque, New Mexico); the Habitat Focus Team (Larry Goldman, Daphne ESFO), and the Nutrient Enrichment Focus Team (Doug Frugé and John Forester, Baton Rouge FRO). Participation included attending the GMP Comprehensive Meeting on June 12-13 in New Orleans, Louisiana.

Columbus Brown participated in reviewing grant proposals submitted to the Gulf of Mexico Foundation for Habitat Restoration efforts funded by the NMFS and the GMP. The Southeast Louisiana NWRs was awarded one of these grants during 2002 for a coastal wetlands restoration project.

Columbus Brown participated in an *ad hoc* committee of the GMP on March 13 at Stennis Space Center, Mississippi, to facilitate recommendations on the future structure and operation of the GMP. Recommendations were later discussed at the full Management Committee meeting in New Orleans, Louisiana, on May 8-9. Columbus also participated in the October 8-9 Management Committee meeting, also in New Orleans, at which the transfer of administrative responsibilities for the Invasive Species Gulf Regional Panel to the GSMFC was approved.

Mississippi River/Gulf of Mexico Watershed Nutrient Task Force

The FWS continued its participation in the Mississippi River/Gulf of Mexico Watershed Nutrient Coordination Committee (Gulf Hypoxia CC). Doug Frugé served as the FWS representative on the CC and participated in a number of conference calls. Ms. Teresa Woods of the FWS Midwest RO represented the agency at meetings of the Gulf Hypoxia CC and Task Force February 7-8 in St. Louis, Missouri, and December 10 in Washington, D.C. Ms. Woods also began serving as co-chair of the CC's Restoration Work Group during the latter portion of the year.

Fish Passage

The Gulf Coast FCO received a $70,000 grant through the FWS Fish Passage Program during 2002 for a project to evaluate alternative lock operational scenarios at Miller's Ferry Lock and Dam on the Alabama River in order to facilitate fish passage. The Daphne ESFO coordinated a contract with the Geological Survey of Alabama to carry out the project. The project, if successful, should provide improved passage of striped bass and other anadromous species at the dam site.

PUBLIC OUTREACH/EDUCATION

The Florida Gulf Coastal Program provided a $19,332 grant to the Bay County Conservancy for construction of a public, elevated boardwalk for access to salt marsh, tidal creek, and pine island habitats and public facilities including two small launch areas for canoes and kayaks, a small picnic area, two nature trails, and a primitive camp site at Goose Bayou marsh. The Goose Bayou marsh is a 287-acre tract of coastal habitat located adjacent St. Andrew Bay and Panama City, Florida, that was purchased by the Conservancy.

The Gulf Coast FCO continued distributing to other FWS offices copies of a Gulf of Mexico Habitat poster that had been developed in 2001 by the GSMFC. As the initial supply of 20,000 copies was exhausted after several months, the GSMFC approached the FWS and other partners regarding the possibility of assisting with funding to reprint the poster. The FWS (Jacksonville and Panama City ESFOs) provided $12,000 through the Florida Gulf Coastal Program to have the poster reprinted. The Gulf Coast FCO coordinated with the FWS Southeast RO and Washington office in development of a print contract with the U.S. Government Printing Office, and 90,000 copies of the poster were delivered to the GSMFC on October 7. The Gulf Coast FCO received 11,000 copies to directly distribute to other FWS Offices for use in public outreach activities.

FEDERAL AID FUNDING

The FWS continued providing funds to Gulf of Mexico states for estuarine or marine sport fish restoration projects under the Federal Aid in Sport Fish Restoration Act. This also included provision of funds

to the GSMFC through an Administrative Grant and funds to the states to coordinate and administer coastal sportfish restoration programs. Specific projects funded in 2002 included:

Alabama

- Coastal Alabama Boating Access. This project helped maintain, operate, and renovate access sites for coastal Alabama anglers.
- Enhancement of Recreational Fishing in Coastal Alabama. Under this project Alabama's marine recreational fishing community was characterized, the public was educated regarding marine and estuarine fishing opportunities, artificial reefs were developed and managed, culture techniques for red snapper were developed, marine recreational fish populations were sampled, and marine fisheries facilities were maintained and renovated.

Florida

- Marine Artificial Reef Planning, Assessment, Development, and Administration. This project encompassed multiple aspects of managing Florida's artificial reef program, including: new reef establishment; reef monitoring; reef program administration, management and coordination; reef performance/compliance assessments; database maintenance; and technical assistance to stakeholders.
- Florida Marine Recreational Fishery Statistical Data Collection. This project supported collection of a variety of fishery independent data on important recreational fish species.
- Investigations into Nearshore and Estuarine Gamefish Abundance, Ecology, and Life History in Florida. This project supported collection of life history, behavior and ecological data on snook, spotted seatrout, and Florida pompano populations.
- Enhancement of a Recreational Fisheries Component of the Marine Resources Geographic Information System. The objective of this project was to develop a geographically referenced marine fisheries and habitat database accessible to resource managers and other interested parties.
- Population Genetics of Marine Sportfish Species for Fisheries Management and Stock Enhancement. Two aspects of this project were to 1) develop a better understanding of genetic stock structure of important fishery species in Florida and 2) determine and monitor effects of the red drum stock enhancement programs.
- Southeast Florida Reef Fish Abundance and Biology. This project's purpose was to develop information on spawning habitats of key reef fish species (snappers and groupers) in the Florida Keys and southeast Florida.
- Florida Saltwater Angler and Boater Outreach Project. The purpose of this project was to help inform Florida citizens regarding the benefits of the Sport Fish Restoration Program in the state.

Louisiana

- Marine Boating Access and Maintenance. This project's purpose was to renovate, maintain, or improve approximately 20% of the state-managed coastal boating access sites in Louisiana.
- Stock Assessment of Louisiana's Important Marine Finfishes. This project supported the collection of age, growth, and fecundity data from various recreational fishery species to support development of stock assessments needed for making management decisions.
- Identifying Essential Fish Habitat in Barataria Bay. The objective of this project was to describe fish habitats in Barataria Bay using sidescan sonar, split beam hydroacoustics, and stable isotope techniques in order to quantify the value of these habitats to important sportfish species to facilitate conservation and protection of essential habitats.
- Intracoastal City Boat Launch and Parking Improvements. This project was to upgrade an existing boat launching facility and construct an additional boat ramp and a 60-space parking area for vehicles with trailers at Intracoastal City in Southwest Louisiana.
- Reserve Boat Launch, Phase 2. This project was to make improvements at the Reserve Boat Launch in order to relieve in-water boat congestion and facilitate utilization of this major access site to Lake Maurepas.
- Fort Pike Boat Launch. The purpose of this project was to relocate and construct a new two-lane boat launching facility and parking area within the Fort Pike State Historic Site in order to improve accessibility and eliminate conflicts with other park visitors.

Mississippi

- Mississippi's Striped Bass Restoration Program. This project supported the production of Phase I and II striped bass fingerlings for stocking in Mississippi coastal rivers for the purposes of restoring historic populations and fisheries.
- Gulf Coast Fisheries Outreach. The purpose of this project was to improve awareness and understanding of the Sport Fish Restoration Program in Mississippi in order to encourage increased participation in recreational fishing.

- Mississippi Artificial Reef Program. This project was to monitor reef development, identify suitable locations for new reefs, and develop outreach information for anglers about reef locations.
- Species Diversity of Fishes Utilizing Three Habitat Types at Cat Island, Mississippi. This project was to determine fish species diversity in selected habitats, determine relative abundance of estuarine species, and quantify recreational catch at Cat Island – the farthest west barrier island of the Mississippi coast.
- Sport Fish Studies in Mississippi Coastal Waters. The purpose of this project was to collect life history on marine sportfish and determine hook/release mortality for spotted seatrout and white trout and evaluate the impacts of a 14-inch length restriction on these species.
- Sport Fish Tag and Release in Mississippi Coastal Waters and the Adjacent Gulf of Mexico. This project supported a program of angler participation in collecting and reporting measurements and location of tagged fish caught and an angler tag and release program for a number of coastal species including spotted seatrout, cobia, and triple tail.
- Research of Juvenile Fishes in *Sargassum* in the Mississippi Marine and Gulf Waters. The project supported collection of data on larval and juvenile fish populations and hydrologic factors associated with floating *Sargassum* habitats in the Gulf of Mexico offshore of Mississippi.

Texas

- Coastal Fisheries Monitoring and Management Program. This project was to monitor trends in harvest, relative abundance, and population characteristics of important saltwater fish in Texas to support development and evaluation of management measures.
- Marine Fisheries Research. The project was to develop data on genetic composition and population structure of sand seatrout in Texas coastal waters.
- Perry R. Bass Marine Fisheries Research Station. This project supported the maintenance and development of the Perry R. Bass Marine Research Facility which is used to conduct research on several marine fish species including the production of red drum and spotted seatrout fry and fingerlings for stock enhancement.
- Sea Center Texas. This project supported the operation of the Sea Center Texas State Fish Hatchery which produces 15 to 18 million red drum and/or spotted seatrout annually for stock enhancement.
- GCCA/CPL Marine Development Center. The project was to construct new facilities, renovate facilities as needed and operate and maintain existing facilities of the GCCA/CPL Marine Development Center which produces approximately 300 million red drum and spotted seatrout fry/fingerlings annually for stock enhancement.
- Texas Clipper Artificial Reef. The project was to acquire, clean up, and sink the 473-foot *Texas Clipper* for development of an artificial reef.
- Conservation Genetics of *Archosargus probatocephalus*. The purpose of the project was to determine population genetic structure of sheepshead populations of the Texas coast to assist in developing a fishery management plan for the species.
- Population Genetics of *Halodule wrightii*. This project was to determine genetic structure of *Halodule wrightii*, a seagrass species, on the Texas coast.
- Hydrophone Use to Identify Spotted Seatrout. The purpose of this project was to identify sounds associated with reproductive activities of spotted seatrout in order to assist in identifying, classifying, and protecting important spawning habitats and areas.
- Population Structure in the Blacktip Shark. This project's purpose was to determine population structure of the blacktip shark population using genetic techniques in order to provide information for developing a fishery management plan for the species.
- Saltwater Game Fish Environmental Assistance and Technical Guidance. The purpose of this project was to conduct field studies and assessments of human impacts on fish habitat in coastal areas and provide technical advice and recommendations to private, local, state, and federal entities in regard to habitat protection and impact mitigation.
- Atlantic Croaker Maturation and Spawning in Texas Marine Waters. This project was to collect data on age at maturation, spawning frequency, fecundity, and spawning season for Atlantic croaker in order to improve efforts at managing the species in Texas waters.
- Genetic Monitoring of Spotted Seatrout. The purpose of this project was to monitor temporal genetic variability in spotted seatrout populations on the Texas coast to provide information in order to better manage the species.
- Conservation Genetics of Gulf Menhaden. The project was to determine genetic population structure and temporal genetic variability in the Gulf menhaden populations of the Texas coast to

provide information to improve management of the species.

GULF STATES MARINE FISHERIES COMMISSION

Report on Examination of Financial Statements, Supplemental Data, Internal Control, and Compliance

for the year ended
December 31, 2002

We have retained the original page numbering sequence on the following pages.

Financial Statements

Gulf States Marine Fisheries Commission
Ocean Springs, Mississippi

December 31, 2002

Gulf States Marine Fisheries Commission
Ocean Springs, Mississippi

Financial Statements

December 31, 2002

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PILTZ, WILLIAMS, LAROSA & COMPANY

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Independent Auditors' Report

Board of Commissioners
Gulf States Marine Fisheries Commission
Ocean Springs, Mississippi

We have audited the accompanying statements of assets, liabilities and net assets-modified cash basis as of December 31, 2002 and 2001, and the related statements of revenues and expenses-modified cash basis, and cash flows-modified cash basis for the years then ended. These financial statements are the responsibility of Gulf States Marine Fisheries Commission's management. Our responsibility is to express an opinion 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 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 opinion.

As described in Note A, these financial statements were prepared on the modified cash basis of accounting, which is a comprehensive basis of accounting other than generally accepted accounting principles.

In our opinion, the financial statements referred to above present fairly, in all material respects, the assets, liabilities and net assets-modified cash basis of Gulf States Marine Fisheries Commission as of December 31, 2002 and 2001, and its revenues and expenses and changes in its net assets-modified cash basis, and its cash flows-modified cash basis for the years then ended on the basis of accounting described in Note A.

In accordance with *Government Auditing Standards*, we have also issued our report dated February 7, 2003 on our consideration of Gulf States Marine Fisheries Commission's internal control over financial reporting and our tests of its compliance with certain provisions of laws, regulations, contracts and grants.

Our audit was performed for the purpose of forming an opinion on the basic financial statements of Gulf States Marine Fisheries Commission taken as a whole. The accompanying financial information listed as supplemental information in the Index to Report, including Schedule of Expenditures of Federal Awards which is required by U.S. Office of Management and Budget Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*, is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and, in our opinion, is fairly stated, in all material respects, in relation to the basic financial statements taken as a whole.

Pilty, Williams, de Rosa & Co.
Certified Public Accountants

Biloxi, Mississippi
February 7, 2003

Section I

Financial Statements

Gulf States Marine Fisheries Commission
Statements of Assets, Liabilities and Net Assets-Modified Cash Basis

Assets	December 31, 2002	2001
Current assets		
Cash	$ 115,587	$ 187,394
Property & equipment, net of accumulated depreciation	633,240	676,560
Other assets		
Investments – long-term	4,976	
Totals	$ 753,803	$ 863,954
Liabilities & Net Assets		
Current liabilities		
Note payments, due within one year	$ 26,441	$ 15,757
Payroll taxes withheld	100	1,792
Total current liabilities	26,541	17,549
Long-term liabilities		
Note payments, due beyond one year	130,591	132,612
Net assets		
Unrestricted:		
Operating	187,539	244,188
Investment in property and equipment, restricted	409,132	469,605
Total net assets	596,671	713,793
Totals	$ 753,803	$ 863,954

See Notes to Financial Statements.

Gulf States Marine Fisheries Commission
Statements of Revenues and Expenses – Modified Cash Basis

	Unrestricted		Temporarily Restricted		Total	
	2002	2001	2002	2001	2002	2001
Revenues & reclassifications						
Member state appropriations	$ 90,000	$ 112,500	$	$	$ 90,000	$ 112,500
Grant/contract support			4,874,195	4,370,286	4,874,195	4,370,286
Rental income	10,536	22,409			10,536	22,409
Fees	9,750	10,499			9,750	10,499
Interest income	5,599	13,315			5,599	13,315
Other	11,101	17,880			11,101	17,880
Net assets released from restrictions	4,871,252	4,370,163	(4,871,252)	(4,370,163)		
Total revenues & reclassifications	4,998,238	4,546,766	2,943	123	5,001,181	4,546,889
Expenses						
Programs:						
Fishery Management Council	30,000	30,000			30,000	30,000
Fish & Wildlife	40,998	39,601			40,998	39,601
Interjurisdictional Fisheries	253,082	239,912			253,082	239,912
SEAMAP	93,044	90,364			93,044	90,364
RECFIN/COMFIN	4,222,969	3,809,772			4,222,969	3,809,772
Sportfish Restoration	216,022	194,516			216,022	194,516
Striped Bass	5,782	2,218			5,782	2,218
Habitat	41,834	39,985			41,834	39,985
Totals	4,903,731	4,446,368			4,903,731	4,446,368
General & administrative	154,099	151,813			154,099	151,813
Total expenses	5,057,830	4,598,181			5,057,830	4,598,181
Excess (deficiency) of revenues and reclassifications over expenses	(59,592)	(51,415)	2,943	123	(56,649)	(51,292)
Change in net assets						
Transfers in (out)	2,943	2,987	(2,943)	(2,987)		
Total changes in net assets	(56,649)	(49,428)		(2,864)	(56,649)	(51,292)
Net assets, beginning of year	244,188	292,616		2,864	244,188	295,480
Net assets, end of year	$ 187,539	$ 244,188	$	$	$ 187,539	$ 244,188

See Notes to Financial Statements.

Gulf States Marine Fisheries Commission
Statements of Cash Flows-Modified Cash Basis

	Year Ended December 31, 2002	2001
Cash flows from operating activities		
Changes in net assets	$(56,649)	$(51,292)
Adjustments to reconcile change in net assets to net cash provided by operating activities:		
Depreciation	16,609	15,139
Acquisition cost of vehicles and equipment included in operating activities	127,290	223,988
Decrease in salary advance		175
Increase (decrease) in payroll tax withholding liability	(1,692)	1,792
Net cash provided by operating activities	85,558	189,802
Cash flows from investing activities		
Purchase of vehicles & equipment	(161,053)	(249,687)
Purchase of investment	(5,000)	
Net cash used by investing activities	(166,053)	(249,687)
Cash flows from financing activities		
Note proceeds, automobile		25,700
Note proceeds, copier	33,763	
Note payments	(25,075)	(17,868)
Net cash provided by financing activities	8,688	7,832
Net increase (decrease) in cash	(71,807)	(52,053)
Cash, beginning of year	187,394	239,447
Cash, end of year	$ 115,587	$ 187,394
Interest paid	$ 9,955	$ 12,652

See Notes to Financial Statements.

Gulf States Marine Fisheries Commission
Notes to Financial Statements
Year Ended December 31, 2002

Note A – Summary of Significant Accounting Policies

Operations – The Gulf States Marine Fisheries Commission, a not-for-profit organization, 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".

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, acquisition and depreciation of equipment and of accounts payable to vendors.

Revenues – Revenues consist principally of the member state appropriations, which represent the estimated cost of operating the Commission, grants and procurement/service contracts. The member state appropriations are considered to be available for unrestricted use and are reported as unrestricted net assets. Grants and procurement/service contracts are considered to be restricted in their use and are therefore reported as temporarily restricted net assets.

Fixed assets – The Commission has adopted a policy of capitalizing assets with an acquisition cost of $500 or more. Fixed assets purchased from unrestricted funds are recorded at cost. Fixed assets purchased from restricted funds are expensed in the fund making the expenditures. They are then recorded as a capital addition at cost, with an offsetting entry to an equity account. Depreciation is computed on the straight-line method over the estimated useful lives of the assets.

Cash and cash equivalents – Cash and cash equivalents for purposes of the Statement of Cash Flows exclude permanently restricted cash and cash equivalents.

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 Assets, Liabilities and Net Assets – Modified Cash Basis. The unrealized gain or loss on investments is reflected in the Statements of Revenues and Expenses —Modified Cash Basis.

Income taxes – The Commission is exempt from income taxes under Internal Revenue Code Section 501(c)(5) and is classified by the Internal Revenue Service as an agricultural organization.

Gulf States Marine Fisheries Commission
Notes to Financial Statements
(Continued)

Estimates – The preparation of financial statements in conformity with generally accepted accounting principles 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 maintains two bank accounts at one financial institution. These account balances may be shown as follows:

	December 31, 2002		December 31, 2001	
Description	Carrying Amount	Bank Balance	Carrying Value	Bank Balance
Regular accounts	$	$	$ 10,000	$ 10,000
Repurchase account	115,563	120,963	177,369	180,887
Totals	$ 115,563	$ 120,963	$ 187,369	$ 190,887

These bank balances are categorized as follows:

	December 31, 2002	December 31, 2001
Amount insured or collateralized with securities held by the Commission or its agent in the Commission's name	$	$ 10,000
Uncollateralized, or held by the pledging financial institution's trust department or agent in the financial institution's name	120,963	180,887
Total bank balance	$ 120,963	$ 190,887

Note C – Investments

Investments consist of a cash fund and a bond and are carried at fair market value. Cost and market values as of December 31, 2002 are summarized as follows:

Market value:	
Tax free money market	$ 76
FHLMC medium term note due 08/15/22, 5.5%	4,900
Total	$ 4,976
Aggregate cost	$ 5,000

Gulf States Marine Fisheries Commission
Notes to Financial Statements
(Continued)

Note D – Property, Plant and Equipment

The Organization's land, depreciable property and equipment may be stated as follows:

	December 31, 2002	2001
Land, pledged	$ 20,000	$ 20,000
Building, pledged	182,817	182,817
Vehicles	79,231	104,636
Office equipment	1,023,673	885,356
Totals	1,305,721	1,192,809
Less accumulated depreciation	672,481	516,249
Total property and equipment	$ 633,240	$ 676,560
Depreciation expense:		
Unrestricted	$ 16,609	$ 15,139
Restricted	142,244	170,576
Totals	$ 158,853	$ 185,715

Note E – Investment in Property & Equipment – Restricted

This account represents the federal funds equity in property and equipment acquired with federal funds. The federal government retains a reversionary interest in property and equipment acquired with federal funds. Following is the current year activity in this account:

	December 31, 2002	2001
Balance, beginning of year	$ 469,605	$ 424,843
Add:		
Federal funds expended for capital additions	127,290	223,988
Totals	596,895	648,831
Deduct:		
Assets disposed of during year	45,519	8,650
Current year depreciation	142,244	170,576
Total deductions	187,762	179,226
Balance, end of year	$ 409,132	$ 469,605

Gulf States Marine Fisheries Commission
Notes to Financial Statements
(Continued)

Note F – Release of Net Assets

Net assets were released from donor restrictions by incurring expenses satisfying the restricted purposes or by the occurrence of other events specified by donors.

	December 31,	
Purpose restriction accomplished:	**2002**	2001
Fishery Management Council	**$ 30,000**	$ 30,000
Fish and Wildlife	**27,941**	39,406
Interjurisdictional Fisheries	**253,141**	228,041
SEAMAP	**89,778**	89,098
RECFIN/COMFIN	**4,232,840**	3,746,985
Sportfish Restoration	**198,649**	185,629
Striped Bass	**8,000**	
Habitat	**30,903**	51,004
Total restrictions released	**$ 4,871,252**	$ 4,370,163

Note G – Notes Payable

During a prior year the Commission acquired the building that it had previously been renting. This acquisition was financed in part with a loan from Hancock Bank. Details of the financing are as follows:

Original loan amount	$ 150,008
Interest rate	8.5%
Payment terms	60 monthly payments of $1,488, plus 1 of remaining balance
Collateral	Land and building at 204 Government St. Ocean Springs, MS

During a prior year, the Commission acquired a new copy machine under a lease/purchase agreement. The financing details are as follows:

Cost of copier	$ 35,101
Interest rate	8.5%
Payment terms	Initial payment of $20,000 plus 60 payments of $308
Collateral	Xerox copier
Purchase option	Ownership at end of lease

Gulf States Marine Fisheries Commission
Notes to Financial Statements
(Continued)

During the prior year, the Commission acquired a new 2001 Ford Crown Victoria under a capital lease. The financing details are as follows:

Cost of Ford Crown Victoria	$ 25,700
Interest rate	6.9%
Payment terms	Initial payment of $5,000 plus 49 payments of $496.14
Purchase option	Option to purchase at end of lease

During the current year, the Commission acquired a new copy machine under a lease/purchase agreement. The financing details are as follows:

Cost of copier	$ 33,763
Interest rate	7.50%
Payment terms	60 monthly payments of $676.55
Collateral	Xerox copier
Purchase option	Ownership at end of lease

	December 31, 2002	2001
Hancock Bank, building purchase	**$ 110,569**	$ 122,390
Copier purchase	**5,187**	8,296
Automobile purchase	**12,797**	17,683
Copier purchase	**28,479**	
Totals	**157,032**	148,369
Less amounts due within one year	**26,441**	15,757
Amounts due beyond one year	**$ 130,591**	$ 132,612

Maturities by years are as follows:

Year Ending	Total	Building	Copier	Automobile	Copier
12/31/03	$ 26,441	$ 11,630	$ 3,384	$ 5,234	$ 6,193
12/31/04	26,430	12,347	1,803	5,607	6,673
12/31/05	22,256	13,109		1,956	7,191
12/31/06	21,667	13,917			7,750
12/31/07	60,238	59,566			672
Totals	$ 157,032	$ 110,569	$ 5,187	$ 12,797	$ 28,479

Gulf States Marine Fisheries Commission
Notes to Financial Statements
(Continued)

Note H – Functional Allocation or Expenses

The costs of providing the various programs and activities have been summarized on a functional basis in the Statement of Revenues, Expenses and Changes in Net Assets-Modified Cash Basis. Accordingly, certain costs have been allocated among the programs and supporting services benefited.

Note I – 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 expenses for the years ended December 31, 2002 and 2001 was $48,307 and $52,265, respectively.

Note J – Post Employment Health Benefits

During the current 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 31,2002 seven (7) employees would qualify for this benefit. Assuming that all seven (7) separated from service at that date, and utilizing their current sick leave hours and rates of pay then the computed value is $ 32,087. During the current year the Commission invested $5,000 to begin funding this benefit. This investment is shown on the Statement of Assets, Liabilities, and Net Assets – Modified Cash Basis at its current market value of $ 4,976. This would leave an unfunded amount of $ 27,111 based upon the above assumptions.

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.

Section II

Supplemental Information

Restricted					
SEAMAP Funds	RECFIN/ COMFIN	Sportfish Restoration	Striped Bass	Habitat	Total
$ 44,884	$ 324,977	$ 93,330	$	$ 27,196	$ 700,580
3,605	26,372	7,685		2,194	56,922
7,539	59,892	13,681		4,834	120,906
3,120	22,076	6,488		1,894	48,307
					5,400
1,114	12,528	2,601		423	24,699
2,032	8,550	1,319		102	17,327
15,855	95,866	34,858	3,404	1,617	213,944
1,319	10,922	5,800		744	25,950
4,116	9,227	2,367		1,140	21,913
1,145	1,932	450		94	14,108
4,605	8,946	5,458	2,378		37,471
27	419	396		13	1,498
186	1,640	7,408		98	12,198
1,129	113,409	2,006		420	121,631
323	4,251	712		149	8,235
691	192,669	1,385		290	226,174
209	1,987	462		97	4,604
	3,208,943	6,600			3,215,543
690	6,547	2,224		319	16,569
455	4,314	1,004		210	9,997
	107,502	19,788			127,290
					16,609
					9,955
$ 93,044	$ 4,222,969	$ 216,022	$ 5,782	$ 41,834	$ 5,057,830

See Independent Auditors' Report.

Gulf States Marine Fisheries Commission
Schedule of Expenditures of Federal Awards – Modified Cash Basis
For the Year Ended December 31, 2002

Federal Grantor/Program Title	Catalog of Federal Domestic Assistance	Federal Expenditures
U.S. Department of Interior		
Striped Bass Stewardship Project	15.600	$ 5,782
Sports Fish Restoration Program	15.605	216,022
Total U. S. Department of Interior		221,804
U.S. Department of Commerce		
Interjurisdictional Fisheries Management Plan	11.407	253,082
Recreational Fisheries Information Network (RECFIN) and Commercial Fisheries Information Network (COMFIN)	11.434	4,222,969
Southeast Area Monitoring and Assessment Program (SEAMAP)	11.435	93,044
Habitat Conservation	11.463	41,834
Total U. S. Department of Commerce		4,610,929
Totals for all federal awards		$ 4,832,733

Note – This schedule was prepared using the same basis of accounting and the same significant accounting policies, as applicable, used for the financial statements.

See Independent Auditors' Report.

Section III

Reports on Compliance and Internal Control

PILTZ, WILLIAMS, LAROSA & COMPANY
CERTIFIED PUBLIC ACCOUNTANTS
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Sam J. LaRosa, Jr., CPA
Gerald Piltz, CPA (Retired)
Stanford A. Williams, Jr. CPA (Retired)

Independent Auditors' Report On the Compliance and Internal Control over Financial Reporting Based on an Audit of the Financial Statements Performed in Accordance with *Government Auditing Standards*

Board of Commissioners
Gulf States Marine Fisheries Commission
Ocean Springs, Mississippi

We have audited the general purpose financial statements of Gulf States Marine Fisheries Commission as of and for the year ended December 31, 2002, and have issued our report thereon dated February 7, 2003. 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.

Compliance

As part of attaining 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 grants, 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 or our audit and, accordingly, we do not express such an opinion. The results of our tests did not disclose any instances of noncompliance that are required under *Government Auditing Standards*.

Internal Control Over Financial Reporting

In planning and performing our audit, we considered Gulf States Marine Fisheries Commission's internal control over financial reporting in order to determine our auditing procedures for the purpose of expressing our opinion on the financial statements and not to provide assurance on the internal control over financial reporting. Our consideration of the internal control over financial reporting would not necessarily disclose all matters in the internal control over financial reporting that might be material weaknesses.

A material weakness is a condition in which the design or operation of one or more of the internal control components does not reduce to a relatively low level the risk that misstatements in amounts that would be material in relation to the financial statements being audited may occur and not be detected within a timely period by employees in the normal course of performing their assigned functions. We noted no matters involving the internal control over financial reporting and its operation that we consider to be material weaknesses.

This report is intended solely for the information 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.

Pilitz, Williams, DeRosa & G.
Certified Public Accountants

Biloxi, Mississippi
February 7, 2003

PILTZ, WILLIAMS, LAROSA & COMPANY
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Independent Auditors' Report on Compliance with Requirements Applicable to Each Major Federal Program and 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 the compliance of Gulf States Marine Fisheries Commission with the types of compliance requirements described in the U.S. Office of Management and Budget (OMB) Circular A-133 Compliance Supplement that are applicable to each of its major federal programs for the year ended December 31, 2002. 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 requirements referred to above that are applicable to each of its major federal programs for the year ended December 31, 2002.

Internal Control Over Compliance

The management of Gulf States Marine Fisheries Commission is responsible for establishing and maintaining effective internal control over compliance with 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 requirements that could have a direct and material effect on a major federal program in order 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.

Our consideration of the internal control over compliance would not necessarily disclose all matters in the internal control that might be material weaknesses. A material weakness is a condition in which the design or operation of one or more of the internal control components does not reduce to a relatively low level the risk that noncompliance with applicable requirements of laws, regulations, contracts and grants that would be material in relation to a major federal program being audited may occur and not be detected within a timely period by employees in the normal course of performing their assigned functions. We noted no matters involving the internal control over compliance and its operation that we consider to be material weaknesses.

This report is intended solely for the information 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.

Peltz, Williams, Lobz & G.
Certified Public Accountants

Biloxi, Mississippi
February 7, 2003

Section IV

Other Items

Gulf States Marine Fisheries Commission
Schedule of Findings and Questioned Costs
For the Year Ended December 31, 2002

Section 1 – Summary of Auditors' Results

1. An unqualified opinion was issued on the general-purpose financial statements.

2. The audit of the general-purpose financial statements did not disclose any material weaknesses in internal control.

3. The audit did not disclose any noncompliance which is material to the general-purpose 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 disclosed no audit findings which were required to be reported under Section ___.510(a) of OMB Circular A-133.

7. The major programs were: Recreational Fisheries Information Network and Commercial Fisheries Information Network – 11.434.

8. The dollar threshold used to distinguish between Type A and Type B Programs was $300,000.

9. The auditee does 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