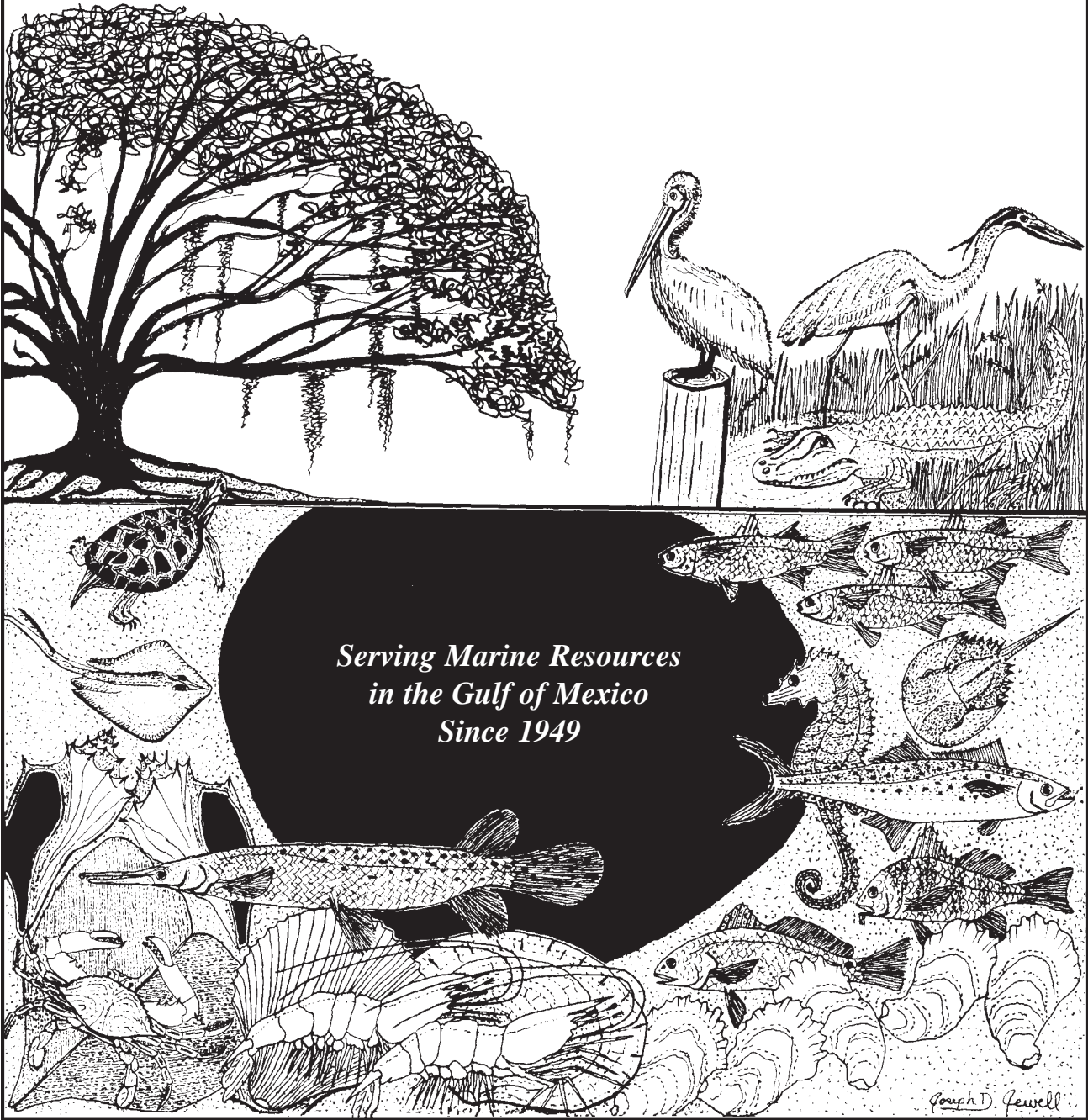


**Fifty-fourth Annual Report
of the
GULF STATES MARINE FISHERIES COMMISSION**

FOR THE YEAR 2003



*Serving Marine Resources
in the Gulf of Mexico
Since 1949*

Joseph D. Jewell

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-Fourth Annual Report
(2003)

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

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



Edited by:

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Preserving the Past ▪ Planning the Future ▪ A Cooperative Effort

Charles H. Lyles Award

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

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

CHARLES H. LYLES Award 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
High A. Swingle	1990
John A. Mehos	1991
J. Burton Angelle	1992
Louis A. Villanova	1993
Theodore H. Shepard	1994
Edwin A. Joyce, Jr.	1995
Tommy D. Candies	1996
Walter M. Tatum	1997
Thomas L. Heffernan	1998
Trent Lott	1999
James Barkuloo	2000
Walter Fondren, III	2001
Jerald K. Waller	2002
Andrew J. Kemmerer	2003

Acknowledgements

In submitting this Fifty-fourth 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-four years could not have been possible without such valued assistance. This acknowledgement is also extended to the directors and staffs of federal, state, and interstate agencies, and to representatives of all organizations and individuals who have contributed to the realization of the objectives of the Gulf States Marine Fisheries Commission.

Respectfully submitted,

Mike Ray, *Chairman*
Billy Hewes, *Vice Chairman*
John Roussel, *Second Vice Chairman*
Larry B. Simpson, *Executive Director*

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Commission Roster

Commission Officers

Chairman: Mike Ray

First Vice Chairman: Billy Hewes

Second Vice Chairman: John Roussel

Commissioners

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

ALABAMA

Barnett Lawley
Alabama Department of
Conservation & Natural Resources
Montgomery, Alabama

Legislator – *Vacant*

Chris Nelson
Bon Secour Fisheries
Bon Secour, Alabama

FLORIDA

Ken Haddad
Florida Fish & Wildlife Fisheries
Commission
Tallahassee, Florida

Nancy Argenziano
Florida Senate
Crystal River, Florida

William Ward
Tampa, Florida

LOUISIANA

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

Warren Triche
Louisiana House of Representatives
Thibodaux, Louisiana
Frederic Miller
Shreveport, Louisiana

MISSISSIPPI

William Walker
Mississippi Department of
Marine Resources
Biloxi, Mississippi
Billy Hewes
Mississippi Senate
Gulfport, Mississippi
Walter J. Blessey
Biloxi, Mississippi

TEXAS

Robert L. Cook
Texas Parks & Wildlife Department
Austin, Texas
Gene Seaman
Texas Senate
Austin, Texas
Governor’s 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
Gayle E. Jones, Receptionist
Jason S. Keenum, CPA

David M. Donaldson, Program Manager
Steven J. VanderKooy, Program Coordinator
Jeffrey K. Rester, Program Coordinator
Gregory S. Bray, Programmer/Analyst
A. Mike Sestak, III, Programmer/Analyst
Douglas J. Snyder, Survey Coordinator
Donna B. Bellais, Survey Coordinator

Active Committees

Executive Committee.....	Mike Ray Billy Hewes John Roussel William Ward Vernon Minton
Law Enforcement Committee.....	Jeff Mayne, Chairman Larry Young, Vice Chairman
Commercial/Recreational Fisheries Advisory Panel	Philip Horn, Commercial Chairman Grey Cane, Recreational Chairman
State-Federal Fisheries Management Committee	Larry B. Simpson, Facilitator
Menhaden Advisory Committee	William S. Perret, Chairman
Striped Bass Technical Task Force.....	Doug Frugé, Chairman
Stock Assessment Team	Joe Shepard, Chairman
Technical Coordinating Committee.....	William S. Perret, Chairman
TCC Artificial Reef Committee.....	Steve Heath, Chairman
TCC Crab Subcommittee.....	Tom Wagner, Chairman
TCC Data Management Subcommittee	Page Campbell, Chairman
TCC Habitat Subcommittee.....	Mark LaSalle, Chairman
TCC SEAMAP Subcommittee	Jim Hanifen, Chairman

GULF STATES MARINE FISHERIES COMMISSION **EXECUTIVE DIRECTOR'S REPORT** *Larry B. Simpson, Executive Director*

Change is inevitable. My wife retired this year. She was a 39-year veteran elementary education teacher and taught all grades from first through sixth. She taught English and science. In the last years of her career, she taught gifted students. So often, parents and former students approach us in restaurants, grocery stores, and shopping malls with kind comments like “You were my favorite teacher” or “I miss you so much, Mrs. Simpson.”

Her retirement reminded me of all the mentors I had early in my career. They ranged the gamut – fishermen, state agency heads, eminent scientists, and politicians. People like Dr. Lyle S. St. Amant, Dr. Gordon Gunter, Mr. Charlie Lyles, John Mehos, Dr. Ted Ford, Mr. Ted Shepard, and Mr. Tom “Leroy” Kiffe. These men were giants, men of vision, with depth of knowledge. All had the indescribable traits that made you want to follow them – that certain leadership quality. I sat in awe of their ability and powers of persuasion during meetings of state managers, the Commission, and the Gulf Council. Even during casual gatherings, they inspired. I could recite story after story of sage words or deeds these men shared and imparted to me, but it would take a voluminous treatise to do so.

I will use this opportunity to provoke you, the younger generation in fisheries management, to think

long-term. Think of your love for our resources and the environment. To do the right thing may not be the most expedient. The challenge to you is to keep the resource in mind as well as the people who use it, both the recreational users and those who provide us with seafood.

Is the new generation able to take the helm when the old timers leave? Of course. Just observe their work on complicated issues and problems. Their grasp of modern technology, computer software, and mathematical models bring new and innovative thought to the arena – a new eye relating in a different way. Working with biologists early in their career presents a unique perspective and a bright future for fisheries.

Unfortunately, like all generations before it, this younger generation also has its faults. Observations from the older generation note a distinct decline in work ethic and a callous, know-it-all demeanor. New work builds upon work from the past and upon the shoulders of the giants before you. Even though limited in data and technology, their work was just as cutting edge in its time. The new generation must fill the next gap; carry on the work with honesty and a genuine concern for the resource.

MEETINGS/ACTIVITIES OF THE EXECUTIVE DIRECTOR

Gulf States Marine Fisheries Commission Meetings

Interviews, ComFIN Coordinator, Ocean Springs, Mississippi – January 2003
Conference Call, S-FFMC, FIN Program, Ocean Springs, Mississippi – February 2003
GSMFC 53rd Spring Meeting, Point Clear, Alabama – March 2003
Radio Interview, *GSMFC and Its Programs*, Foley, Alabama – April 2003
Mississippi Power Company Meeting, Mercury, Biloxi, Mississippi – April 2003
State Directors’ Meeting, Gulf Shores, Alabama – June 2003
State-Federal Fisheries Management Committee, FIN, New Orleans, Louisiana – August 2003
Conference Call with S-FFMC, FIN, Ocean Springs, Mississippi – October 2003
GSMFC 54th Annual Meeting, Corpus Christi, Texas – October 2003
Rotary Club Presentation, *Current Marine Issues*, Gautier, Mississippi – October 2003

Gulf of Mexico Fishery Management Council Meetings

San Antonio, Texas – January 2003
Mobile, Alabama – March 2003
Staff Biologist Interviews, Tampa, Florida – April 2003
Panama City, Florida – May 2003
New Orleans, Louisiana – June 2003

Naples, Florida – July 2003
Staff Economist Interviews, New Orleans, Louisiana – August 2003
Baton Rouge, Louisiana – September 2003
Conference Call, Staff Economist, Ocean Springs, Mississippi – September 2003
Biloxi, Mississippi – November 2003
Magnuson Act, 25th Anniversary, Washington, D.C. – November 2003

Congressional Activity

Coastal Delegates, Marine Program Briefings, Washington, D.C. – November 2003

Other

Marine Fisheries Advisory Committee, Washington, D.C. – January 2003
Conference Call, NMFS Business Plan, Ocean Springs, Mississippi – January 2003
Conference Call, SEDAR, Ocean Springs, Mississippi – January 2003
Jackson County Economic Symposium, Biloxi, Mississippi – February 2003
Shrimp Summit, Houston, Texas – March 2003
National State Directors Meeting, San Diego, California – April 2003
Marine Fisheries Initiative, St. Petersburg, Florida – August 2003
NMFS Highly Migratory Advisory Panel, New Orleans, Louisiana – August 2003
Conference Call, SEDAR, Ocean Springs, Mississippi – November 2003
MARFIN Principal Investigators Conference, Biloxi, Mississippi – December 2003
Marine Fisheries Advisory Committee, New York, New York – December 2003

SPORT FISH RESTORATION ADMINISTRATION PROGRAM

Ronald R. Lukens, Assistant Director

The Gulf States Marine Fisheries Commission provided administrative support for the Sport Fish Restoration Program (SFRP). The Assistant Director attended and/or participated in meetings and planning and development activities outlined within FWS Grant Agreement No. GS-96-Segment 7. A brief report of program activities follows.

ARTIFICIAL REEF

Revision of Materials Guidelines

In a joint effort with the Atlantic States Marine Fisheries Commission's Artificial Reef Subcommittee and the TCC Artificial Reef Subcommittee, revision began on *Guidelines for Marine Artificial Reef Materials*. The process began in February 2001 and during 2003, the two subcommittees conducted final editing to prepare the document for review and approval by both the Gulf and Atlantic States Marine Fisheries Commissions. Both reviewed and approved the document, and printing was scheduled. The document will also be available as an Adobe Acrobat (pdf) file on the GSMFC web site.

Artificial Reef Database

The GSMFC had planned to continue development of a web-based data entry program through which the states would be able to enter their own data in the regional artificial reef database. Additional plans included a web-based query system to allow individuals to run custom queries of the database. Because of the war with Iraq, the Oracle database programmer was called into active duty with the National Guard from January 2003 until September 2003. No progress was made toward completing the database. The data entry program was completed and ready for beta testing. Program refinement is anticipated in early 2004. The GSMFC continued to manage the artificial reef database.

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). The Magnuson-Stevens Act established federal fishery management policies; fisheries habitat is largely located within state jurisdictional waters. If close coordination did not occur between state and federal agencies, potential for conflict would increase. Habitat Program

activities included 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. A representative of the Habitat Subcommittee is assigned to each fishery management plan task force. In March 2003, the subcommittee reviewed a draft of the habitat section for the Striped Bass FMP and provided substantive comments.

Components of a geographic information system (GIS) were purchased and installed. Training sessions were attended to begin the process of developing a GIS capability in support of SFRP activities. The GSMFC is acquiring databases for incorporation into the system. Three attached maps provide a general demonstration of the current capabilities of the GSMFC GIS facility. As opportunities allow, databases are acquired.

Invasive Species Activities

Work continued in conjunction with the National Aquatic Nuisance Species Task Force and the National Invasive Species Advisory Committee to determine appropriate actions and roles for the GSMFC and its member states in addressing invasive species issues. In addition, the GSMFC provided administration for and participated in the Gulf of Mexico Regional Panel on Aquatic Invasive Species (Regional Panel).

In 2002, the GSMFC acquired a partially-completed web page and database for aquatic non-native species in the Gulf of Mexico region. The Gulf Regional Panel's Information Management Work Group made substantial changes in format and content and launched the newly revised web site in mid December 2003. This site can be reached at www.nis.gsmfc.org or by going to www.gsmfc.org and clicking on the Invasive Species link. The GSMFC cooperated with the U.S. Geological Survey, the Smithsonian Environmental Research Center, and NatureServe to develop a distributed query system so users can access multiple databases from one site. Access to the system was added to the GSMFC web page during the year and can be linked through the Invasive Species web site.

The Gulf Regional Panel's Education and Outreach Work Group developed a recommended protocol for

handling and using non-native/invasive species in school science fair competitions. The protocol was approved by the panel and accepted by the National

Aquatic Nuisance Species Task Force. The protocol will be distributed to science fair organizations and can be found on the Invasive Species web site.

Associated Meetings

The Assistant Director attended the following meetings in conjunction with the activities described above:

1/20-23/03	FWS Fisheries Leadership Conference
2/11-13/03	Presentation on invasive species to FWS Project Leaders meeting on HACCP
3/3-5/03	Invasive Species Advisory Committee Meeting
3/5-7/03	Sea Grant review on invasive species proposals
4/9/03	Artificial Reef Seminar presentation to the Gulf Coast Research Laboratory
4/30/03	Louisiana Artificial Reef Planning Meeting
5/12-14/03	Aquatic Nuisance Species Task Force Meeting
6/2-5/03	Invasive Species Advisory Committee Meeting
6/11-13/03	Presentation on Invasive Species to the Chesapeake Bay Program
6/23-27/03	Invasive Species Advisory Committee Meeting
7/10-11/03	Presentation on the Gulf Regional Panel to the Mississippi Basin Regional Panel
7/15-16/03	FWS Workshop on Invasive Species, Region 4 Office
7/30/03	Louisiana Invasive Species Task Force Meeting
8/13/03	Invasive Species Rapid Assessment Meeting, Mobile Bay Drainage
9/2-4/03	Mobile Bay Invasive Species Rapid Assessment
9/22/03	Invasive Species Management Plan for Mississippi, Development Meeting
10/20-22/03	Gulf of Mexico Regional Panel on Aquatic Invasive Species Meeting
10/23/03	Invasive Species Management Plan for Mississippi, Development Meeting
10/28-30/03	Invasive Species Advisory Committee Meeting
11/4-6/03	Aquatic Nuisance Species Task Force Meeting
12/10-11/03	Early Detection/Rapid Response Work Group Meeting, Gulf of Mexico Region Rapid Response Development Meeting

SOUTHEAST MONITORING AND ASSESSMENT PROGRAM (SEAMAP) *Jeffrey K. Rester, Program Coordinator*

In 2003, resource survey information continued for the twenty-second consecutive year. The SEAMAP Spring Plankton Survey took place from May 12 through May 31. One hundred seventeen stations were sampled from the west Florida shelf to the Louisiana/Texas border. Plankton samples were taken with standard SEAMAP bongo and neuston samplers. The primary purpose of the Reef Fish Survey was to assess relative abundance and compute population estimates of reef fish found on natural reef fish habitat in the Gulf of Mexico. Two types of gear were used to deploy video cameras:

1. a single-funnel fish trap (2.13 m long by 0.76 m square) with the camera mounted at a height of 25 cm above the bottom of the trap, or
2. a four camera array with four cameras mounted orthogonal to each other at a height of 25 cm above the bottom.

Alabama conducted sampling on August 11 and September 19. Three sites were sampled using trap videos and fish traps. The Summer Shrimp/Groundfish Survey took place from June 2 through July 27; 313 trawl stations were sampled during the survey. In addition, the NMFS and LDWF vessels collected ichthyoplankton data. A total of 42 stations was sampled with bongo and/or neuston nets, as encountered along cruise tracks. The Fall Plankton Survey took place from August 28 through September 29. The NMFS and LDWF sampled 150 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 fish, particularly king and Spanish mackerel, lutjanids, and sciaenids. Plankton samples were taken with standard SEAMAP bongo and neuston samplers. The Fall Shrimp/Groundfish Survey was conducted from October 8 to December 19 from off Mobile, Alabama, to the U.S.Mexican border. Vessels sampled waters out to 60 fm, covering 407 trawl stations, in addition to plankton and environmental sampling. 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 61 stations was sampled with bongo and/or neuston nets, as encountered along cruise tracks. The NMFS completed 54 ichthyoplankton stations, and Louisiana completed seven stations.

The SEAMAP Subcommittee began the task of building a fishery independent database. The database would contain data from all fishery independent survey activities in the Gulf of Mexico, South Atlantic, and Caribbean. The database would serve as a clearing house for anyone looking for fishery independent data. During 2003, a fishery independent work group was formed to begin the process to develop protocols and standard database elements.

JOINT GSMFC/GMFMC HABITAT PROGRAM *Jeffery K. Rester, Program Coordinator*

In 2003, the Gulf of Mexico Fishery Management Council completed their essential fish habitat (EFH) environmental impact statement (EIS). The purpose of the EIS was to describe and identify EFH for each fishery, identify habitat areas of particular concern (HAPC), and identify measures to minimize – to the extent practicable – the adverse effects of fishing on such EFH. Public review of the draft EIS began during the end of August. The designation of EFH for each species was less inclusive than the original 1998 EFH Amendment. Several measures to reduce the impacts of fishing on habitat were examined including:

- ♦ to prohibit bottom anchoring over coral reefs in HAPCs;
- ♦ to prohibit the use of bottom longlines, buoy gear, and all traps/pots on coral reefs;
- ♦ to require a weak link in the tickler chain of bottom trawls; and
- ♦ to prohibit the use of trawling gear on coral reefs.

The Council designated the following areas as HAPC:

- ♦ Flower Gardens National Marine Sanctuary,
- ♦ Florida Middle Grounds,

- ♦ Tortugas Ecological Reserves,
- ♦ Pulley's Ridge, and
- ♦ Madison-Swanson Marine Reserve Area

During 2003, the Commission's Derelict Trap Task Force developed and submitted a proposal to NOAA's Community Based Restoration Program to fund state trap removal programs. The program provided \$192,500 to remove derelict traps, and traps removals in Texas, Louisiana, Mississippi, and Alabama were scheduled for February, March, and June 2004.

In 2003, individual trap removal activities continued in Texas, Mississippi, and Alabama. From January 21-25, the Mississippi Department of Marine Resources and Gulf Coast Research Laboratory instituted a closed crabbing season and a derelict trap removal effort. Sponsors and volunteers removed 1,429 abandoned crab traps from Mississippi's marine waters. Texas held its second removal effort from February 15 to March 2. Approximately 3,858 abandoned crab traps were picked up by 494 volunteers. Alabama also held a second derelict crab trap removal day on March 15. All of these events were a huge success; the grant from NOAA will allow these efforts to continue in the future.

Thanks to funding from the U.S. Fish and Wildlife Service, the habitat poster was reprinted. Originally printed in 2001, the poster stressed the importance of marine fish habitat to marine fish stocks. In 2003, 90,000 posters were printed and will continue to be distributed at public events. The Habitat Subcommittee began to work on its next outreach activity, a habitat video. The video will be similar to the poster since it will also stress the importance of healthy marine fish habitat to all organisms in the Gulf of Mexico.

The Annotated Bibliography of Fishing Impacts on Habitat was updated in 2003. This third revision contains 52 new citations on papers dealing with the impact of fishing on habitat. The complete database contains 725 citations. The bibliography attempts to compile a listing of papers and reports that address the many effects and impacts that fishing may have on habitat and the marine environment. The bibliography is available on the Commission web site at <http://www.gsmfc.org/fishingimpacts.html>. The bibliography is also accessible as a searchable ProCite database.

INTERJURISDICTIONAL FISHERIES (IJF) MANAGEMENT PROGRAM

Steven J. VanderKooy, Program Coordinator

In 2003, the IJF Program continued to provide the Gulf States with quality information and recommendations for interstate management of fisheries. Fishery management plans (FMPs) were monitored to follow progress in implementing management recommendations. The State-Federal Fisheries Management Committee (S-FFMC) review these findings annually.

During 2003, Mr. Steven J. VanderKooy continued to serve as the Program Coordinator, and Mrs. Cynthia B. Yocom continued to provide assistance with program activities. IJF staff arranged and provided support during meetings of work groups, task forces, and subcommittees involved program activities. Staff continued to collect data, research papers, and other materials critical to development of FMPs. The repository for papers referenced within FMPs was expanded as items were collected, and this information continued to be computerized into a ProCite database. The database currently houses 1,700 references and abstracts. The bibliographic collection represents all the citations used in the spotted seatrout, flounder, menhaden, and blue crab FMPs. The database is searchable from the GSMFC website and provides key words and complete abstracts when possible. Reprints are housed electronically.

The program coordinator participated in several meetings and workshops during 2003 – the U.S. Fish and Wildlife Service *Morone* Workshop in February, the National Shellfish Association Meeting in April, the FIN Otolith Training Workshop in May, the Oyster Workshop in July, and the National Oyster Conference in September. Several meetings were held with Sea Grant representatives to discuss derelict traps. The IJF Staff Assistant attended one professional development workshop in 2003 – the National Business Travel Association Meeting in August.

Numerous copies of FMPs, profiles, amendments, and revisions were distributed, and other marine management information requests were routinely filled via phone, mail, and email. Two marine management documents were edited, published, and distributed including *Licenses and Fees for Alabama, Florida, Louisiana, Mississippi, and Texas in their Marine Waters* and *A Summary of Marine Fishing Laws and Regulations for the Gulf States*.

For the fourth year, the NMFS's historic menhaden logs (Captain's Daily Fishing Reports) for the Gulf of Mexico were computerized. This effort is being conducted as time and money permit. The CDFRs from 1984 to present have been entered and are searchable on the GSMFC website. IJF staff provided support to the Menhaden Advisory Committee, which met during the GSMFC spring and annual Meeting.

In July 2003, a technical task force (TTF) for sheephead was convened to begin development of an FMP. The TTF met again in October with their first drafts. The Striped Bass TTF met three times in 2003. This TTF spent considerable time developing goals for individual river systems in the Gulf region. Section drafts were reviewed and edited during these meetings. The TCC Habitat Subcommittee reviewed the draft of the habitat section of the draft Striped Bass FMP and provided substantive comments. The Commercial/Recreational Fishery Advisory Panel also provided a representative to TTFs and reviewed FMPs under development. The panel continued discussions on bycatch, state legislation, artificial reefs, and derelict traps.

The Crab Subcommittee and IJF staff continued work with NOAA's Office of Protected Resources and Sea Grant to provide outreach to commercial crab fishermen regarding gear interactions with dolphins. NOAA's Office of Protected Resources proposed reclassification of the Gulf of Mexico crab pot fishery from a NOAA Category III to Category II based on "interactions" with marine mammals in 2002. Working together, the agencies agreed not to reclassify under the conditions that the states, Sea Grant, and GSMFC work with NOAA to educate participants in the fishery.

In May 2003, the Commission approved *Guidelines for Developing Derelict Trap Removal Programs in the Gulf of Mexico* for publication. This document served as an outline/checklist for other agencies attempting to initiate a program to remove derelict traps. Information provided within the document applied to other trap fisheries as well as other gears and debris cleanups. The document was printed in-house in a three-ring binder format and was available via the web and on CD. The Derelict Trap Task Force and IJF staff worked the Mississippi trap cleanup in February and the Alabama sweep in June.

IJF staff provided support to the TCC Crab Subcommittee during the GSMFC spring and annual meetings. The Habitat Program also worked with the Derelict Trap Task Force to secure funding for state derelict trap removal programs, and the Commission was awarded \$192,500 by NOAA's Community Based Restoration Program.

The Commission also approved *A Practical Handbook for Determining the Ages of Gulf of Mexico Fishes*. The first edition of the manual was distributed to the states and electronic copies were made available via the web. The Atlantic States Marine Fisheries Commission showed a great interest to incorporate the Gulf standards outlined in this manual into their own manual. Individuals from more than a dozen counties requested the manual.

In accordance with *The Gulf of Mexico Cooperative Law Enforcement Strategic Plan*, the GSMFC Law Enforcement Committee continued to work toward regional enforcement goals. Alabama, Texas, and Louisiana provided enforcement expertise to the Striped Bass TTF, the Derelict Trap Task Force, and the Sheepshead TTF, respectively. Monthly conference calls were convened to discuss regional management and subsequent enforcement activity including coordinated high-contact events, joint enforcement agreements, and regional training opportunities. The committee monitored Congressional activity including homeland security, enforcement coordination, and funding. These conference calls continued the opportunistic discussion of regional issues including Gulf communication protocols, importation issues, product labeling, and consumer safety.

TTFs for oyster, black drum, and striped mullet were re-activated in 2003 to review those FMPs. Recommendations were made to the S-FFMC in October for revision schedules based on recent science, data, and significant changes within those fisheries. A Shrimp TTF was also assembled to review and determine the need for a "nearshore/state water" FMP for Gulf shrimp.

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 FIN consists of two components:

1. Commercial Fisheries Information Network – ComFIN
2. 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 (NMFS) 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 Statistical Committee (SCSC) developed an MOU and a draft framework plan for the ComFIN. During 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 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 associated fishing industries, but also the resources, the states, and the nation.

The mission of 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 development of a national program. The four goals of FIN include:

1. Planning, managing, and evaluating commercial and recreational fishery data collection activities;
2. To implement a marine commercial and recreational fishery data collection program;
3. To establish and maintain a commercial and recreational fishery data management system; and
4. 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 committees, 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:

- ♦ National Marine Fisheries Service,
- ♦ U.S. Fish and Wildlife Service

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.

- ♦ National Park Service
- ♦ Alabama Department of Conservation and Natural Resources
- ♦ Florida Department of Environmental Protection
- ♦ Louisiana Department of Wildlife and Fisheries
- ♦ Mississippi Department of Marine Resources
- ♦ Puerto Rico Department of Environmental and Natural Resources
- ♦ Texas Parks and Wildlife Department
- ♦ U.S. Virgin Islands Department of Planning and Natural Resources
- ♦ Caribbean Fishery Management Council
- ♦ Gulf of Mexico Fishery Management Council
- ♦ Gulf States Marine Fisheries Commission

As of October 1998, 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 participate on the FIN Committee. The South Atlantic continued participation at the work group level to ensure compatibility and comparability.

The FIN Committee is divided into two standing committees representing the major geographic areas of the Region: Caribbean, Gulf, and South Atlantic. 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. Technical work groups are established as needed to address specific technical issues. Coordination and administrative support is accomplished through the Gulf States Marine Fisheries Commission.

PROGRAM ACTIVITIES

The FIN is a comprehensive program comprised of coordination and administrative support, coordinated data collection activities, an integrated data management and retrieval system, and procedures for information dissemination. Activities in 2003 were associated with addressing issues and problems regarding data collection and management and developing appropriate strategies. FIN was involved in various operational activities on collecting and management of marine commercial and recreational fisheries data. These activities were conducted by state and federal agencies and are discussed below.

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 coordination and administrative duties included (but are not limited to):

- ♦ coordination and logistical support including communication and organization of meetings for the committee, subcommittees, and work groups;
- ♦ liaison between the committee, program participants, and other interested organizations;
- ♦ preparing annual operations plans as directed by the committee;
- ♦ preparing and/or supervising and coordinating preparation of selected documents including written records of all meetings;
- ♦ distribution of approved FIN information and data in accordance with accepted policies and procedures.

Committee Activities

FIN Committee

The FIN meeting was held in June 2003; main issues discussed included:

- ♦ Identification and continuation of tasks for 2003 and instruction to the Administrative and Geographic Subcommittees 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 2004 FIN Operations Plan to present activities in data collection, data management, and information dissemination;
- ♦ Discussion of data management issues;
- ♦ Review of activities and accomplishments;
- ♦ Evaluation of adequacy of current marine commercial and recreational fisheries programs for FIN and development of recommendations regarding these programs;
- ♦ Review technical work group findings and recommendations for 2004 activities;
- ♦ Preparation and submission of a financial assistance proposal to support FIN activities;
- ♦ Internal evaluation of the program.

Subcommittees and Work Groups

The FIN subcommittees and work groups met during the year to provide recommendations to the committee and 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. Activities included:

- ♦ The RecFIN(SE) Biological/Environmental Work Group convened conference calls in February and December 2003 to examine the feasibility of registering all fishing tournaments (not just the ones that target highly migratory species) using hydrologic unit codes (HUCs) instead of the existing FIN water body codes, development of sampling strategies for private access sites, discuss the next steps for night fishing sampling, update the group regarding fishing tournaments, and continue development of the non rod-and-reel fisheries sampling strategies.
- ♦ The Gulf of Mexico Geographic Subcommittee met in March and October 2003 to discuss various topics including a presentation of Mississippi night fishing survey results, head boat sampling in the Gulf of Mexico, trip ticket reporting issues regarding out-of-state dealers, status of registration tracking module, status of biological sampling activities, collection of birth date for registration tracking module, development of more detailed QA/QC for Data Quality Act, detailed effort data collection in Louisiana, adoption of the for-hire telephone survey as “official” method, and fishing tournament discussions.
- ♦ The Otolith Processors Training Workshop was held in May 2003 to discuss a variety of issues including a presentation of the University of Florida amberjack project, red snapper otolith ageing techniques and associated problems, otolith processing issues and problems, conducting otolith reading activities for red snapper and greater amberjack, review and comparison of the reading exercise, status of otoliths processing, and other pertinent issues.
- ♦ The FIN For-Hire Work Group met in June 2003 to review vessel directory telephone survey (VDTS) methods and to discuss sampling methodology for field activities.
- ♦ The FIN Data Collection Plan Work Group met in June 2003 to review 2002 and 2003 otolith and length data collection and processing activities, to develop recommendations for necessary lengths and otoliths for FIN priority species, and to develop the 2004 FIN Data Collection Plan Document.
- ♦ The State/Federal Fisheries Management Committee met in August 2002 to discuss the finalization of activities for 2003 funding of the FIN cooperative agreement.
- ♦ The FIN Social/Economic Work Group met in September 2003 to develop a data collection plan for social/economic activities within FIN. This plan will assist in the development of social/economic data collection projects.
- ♦ The Caribbean Commercial Port Samplers Meeting was held in October 2003 to discuss the status of ComFIN, the yellowtail snapper stock assessment, and data collection recommendations. The group engaged in round table discussions and took a sampling trip to Vieques.
- ♦ The Gulf of Mexico Commercial Port Samplers Meeting was held in November 2003 to discuss the status of ComFIN and quota monitoring methods. The group also reviewed fish maturation photos and heard a presentation of survey for sampling methods.
- ♦ The FIN/ACCSP Registration Tracking Work Group convened a conference call in December 2003 to discuss the effectiveness of the current registration tracking module. There were concerns that existing systems would not create a unique identifier. The group was tasked to examine this issue and possibly developing alternative methods to establish unique identifiers.

Operational Activities

Operational activities continued throughout 2003 including coordination, planning, and administration of FIN activities and providing recreation and commercial information to FIN participants and other interested personnel.

The MRFSS survey was conducted in Louisiana, Mississippi, Alabama, and Florida for shore, for-hire, and private modes. Coordination of the survey, field-intercept survey for shore, for-hire, and private boat anglers to estimate angler catch, and data entry continued. Data from the survey were combined with the NMFS effort estimate telephone survey. The states conducted supplemental sampling of the intercept portion for the MRFSS for charter boats in Texas, Louisiana, Mississippi, Alabama, and Florida (both east and west coasts). Weekly telephone calls were made to a 10% random sample of charter boat captains to obtain estimates of charter boat fishing effort and social/economic data. In July 2003, the states also began calling head boat captains to obtain fishing effort. Head boat port sampling occurred in Texas, Louisiana, and Florida to collect catch reports from head boat personnel, gather effort data on head boats that primarily operate within the EEZ, and sample catch.

Sampling continued for gulf menhaden catches from menhaden purse-seine vessels operating in Louisiana. Samples were processed for size and age composition

for use in coast-wide stock assessments. Gulf menhaden stock assessments are incorporated into the FMP and are utilized by the Gulf States, the GSMFC, the menhaden industry, and the NMFS.

Further implementation of a fishery information system for the FIN based on the ACCSP model continued. The FIN Data Base Manager and ComFIN Survey Coordinator will, in conjunction with the ACCSP, develop more data modules for the FIN and ACCSP data management systems including data modules structures, routine loading of Louisiana, Mississippi (oyster only), Alabama, and Florida commercial catch effort data, Gulf biological data, Gulf recreational data; and maintenance of the data management system. It is the next step for implementing a regional system for FIN.

Trip ticket program development, implementation, and operation continued to initiate and develop a commercial trip ticket system for Texas and Mississippi. Components were developed for a commercial trip ticket system to census the commercial fisheries landings in Texas and Mississippi using ComFIN data elements and standards. These data 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 continued. The 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. Mississippi continued to implement a trip ticket system but was unable to pass legislation that would permit data collection from dealers. The state 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.

Collection of biological data from recreational and commercial fisheries continued. These data are essential to accurately assess the status of commercial and recreational species including red snapper, king mackerel, gulf and southern flounder, and greater amberjack. Based on established guidelines, port sampling will collect commercial information. Samplers will go to recreational sites and collect necessary biological data using a modified MRFSS method. The GSMFC provided coordination to collect, process, and analyze the data.

Information Dissemination

Committee members and staff provided program information throughout the year via a variety of different methods including distribution of program documents, presentations to various group, and via the Internet. These include:

- ♦ Bray, G. 2003. *Mississippi's Shore Night Fishing Survey Marine Recreational Fisheries Statistics Survey, January 2001-December 2002*. No. 113. Gulf States Marine Fisheries Commission, Ocean Springs. 29 pp.
- ♦ FIN Committee. 2003. *2004 Operations Plan for Fisheries Information Network (FIN)*. No. 114. Gulf States Marine Fisheries Commission, Ocean Springs. 26 pp + appendix.
- ♦ FIN Committee. 2003. *Annual Report of the Fisheries Information Network (FIN) for the Southeastern United States, January 1, 2002-December 31, 2002*. No. 112. Gulf States Marine Fisheries Commission, Ocean Springs. 18 pp + appendix.
- ♦ FIN Committee. 2003. *2004 FIN Data Collection Plan*. Gulf States Marine Fisheries Commission, Ocean Springs. 74 pp.
- ♦ FIN articles within the GSMFC newsletter, *Compact News*.
- ♦ Informational discussions occurred throughout the year during ASMFC, GSMFC, NMFS, and other participating agencies meetings and workshops.
- ♦ FIN has developed a data management system that provided 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 at www.gsmfc.org/data.html.
- ♦ The NMFS provided a user-friendly DMS for MRFSS that can be accessed via the web at www.st.nmfs.gov/st1/recreational/data.html.
- ♦ The GSMFC developed a FIN home page to provide programmatic and operational information.

A LABAMA MARINE RESOURCES DIVISION

Vernon Minton, Director

The Alabama Marine Resources Division (AMRD) is responsible for management of Alabama's marine fisheries resources through research and enforcement programs. Three division facilities supported an average of 54 employees of the Administrative, Enforcement, and Fisheries sections during fiscal year 2003.

SIGNIFICANT ACCOMPLISHMENTS

A program aimed at the elimination of derelict crabs in Alabama waters resulted in the removal of 1,074 derelict traps in spring 2003. This program followed a successful pilot effort in 2002 and involved numerous agencies, civic groups, and division personnel.

Enforcement officers continued to improve and expand the Coastwatch Program by training citizens to recognize and report violations of saltwater fishing laws and regulations. Information from Coastwatch members has been valuable in enforcement patrol planning and deployment of manpower and other resources resulting in saved man hours by not responding to inaccurate reports of violations. To date, 198 citizens trained during 30 sessions held in Mobile, Baldwin, and Jefferson counties. The response to the program continued to be very positive.

The U.S. Department of Commerce appropriations budget for the 2003 fiscal year contained money earmarked for cooperative enforcement initiatives between National Oceanic and Atmospheric Administration (NOAA) Office of Law Enforcement (OLE) and state fisheries law enforcement entities. The AMRD and NOAA OLE entered into a joint enforcement agreement (JEA) pursuant to the initiative. As part of the agreement, federal dollars were dedicated to increase fishery 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 AMRD enforcement section received funding as part of the agreement. The money was used to purchase one offshore vessel and surveillance equipment, which was strategically located in coastal Alabama. The JEA also provided funding to increase patrol hours for AMRD officers.

The facilities for red snapper brood fish maturation studies completed last year at the Claude Peteet Mariculture Center (CPMC) have resulted in the increased population of red snapper fingerlings. The production of these fingerlings by naturally spawning fish has enabled continued cooperative research to occur between AMRD, Auburn University, Alma Bryant High School, and the Gulf Coast Research Laboratory in 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. Once complete, it will enhance the development of red snapper production at CPMC by providing a year-round supply of high salinity water critical to the survival of larval red snapper.

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

SIGNIFICANT PROBLEMS AND SOLUTIONS

A serious controversy resulted from the use of gill nets along the front beach area of Orange Beach in Alabama. The Director worked with recreational fishermen, leaders of Orange Beach, and commercial net fishermen to develop and present a compromise solution to the problem to the Conservation Advisory Board. The plan was accepted and incorporated into regulations.

The number of crab traps in use in Alabama's estuarine area and associated derelict traps continue to be a problem. Plans are being studied to reduce the number of traps in the future along with limiting entry into this fishery. In the meantime, the AMRD is continuing a program utilizing volunteers to assist in removing derelict crabs from Alabama's coastal waters.

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

to the CPMC. The pipeline should be complete in spring 2004.

There is a need for authority to allow offenses committed in the Gulf of Mexico outside of the state's territorial waters to be heard in state district court. This could be accomplished by amending regulation 9-12-4.

Currently, no method exists to track recreational effort expended against marine resources with the use of gig, castnet, recreational crab traps, or spearfishing. 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.

At present, commercial fishermen cannot legally sell fish caught in cast nets or with gigs because no commercial license exists for this activity. A commercial license should be established.

Personnel are stretched thin within the AMRD. The enforcement section has three vacancies to reach full capability. In addition, three of the current officers were on active duty for the first six months of this year, and the possibility exists that officers could be called upon in the future, further reducing enforcement manpower.

ADMINISTRATIVE SECTION

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

Staff for the Administrative Section consisted of the division director, eight clerical workers, one custodial worker, and one marine mechanic. Offices are maintained at Dauphin Island and Gulf Shores.

Accomplishments

Construction began on a pumping system and pipeline that will extend from the Gulf of Mexico at the Gulf State Park Pier to the CPMC. When completed, the pipeline will provide a year-round supply of high salinity water, which will enhance the development of red snapper production.

Enforcement officers continued to improve and expand the Coastwatch Program.

The 2003 edition of the popular informational calendar was produced and distributed. Another edition of the children's activity book was printed

and distributed to schoolchildren throughout Alabama.

The success of the electronic trip ticket computer program continues to grow. Sixteen Alabama seafood dealers are currently online, and contribute substantial amounts of landings data to the AMRD. Seafood dealers enter landings and trip information from commercial fishermen and submit the data electronically on a monthly basis.

Future Plans

After consultation with shrimp fishermen and other affected user groups, plans to permanently close portions of Grand Bay and Mobile Bay to all shrimping are being developed.

During 2004, plans include continued work at Fairhope's Pier Street ramp with construction of an additional breakwater.

The AMRD plans to complete its Coastal Impact Assistance Program projects during 2004.

Attempts will be made to extend the jurisdiction of District Courts to offenses committed offshore from Alabama in addition to those committed fully within Alabama's territorial sea.

ENFORCEMENT SECTION

The Enforcement Section patrols Alabama's coastal waters, enforcing state and federal laws and regulations relating to the conservation and protection of marine resources. Officers also enforce laws and regulations relating to boating safety and freshwater fishing and hunting, conduct search and rescue missions, and participate in drug interdiction operations. Officers cross-train and become deputized as National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife, and U.S. Custom agents. Cooperation with these and other federal and state agencies includes coordination of joint enforcement operations, investigative and fisheries enforcement expertise, training, public safety, and other natural resources 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 are stationed in Mobile County, and the Chief Enforcement Officer is stationed at Dauphin Island headquarters. Three vacancies are scheduled to be filled in FY2003-2004, two positions in Baldwin County and one in Mobile County.

Accomplishments

Enforcement officers conducted 11,489 hours of boat and shore patrol; 8,497 boat checks; 945 seafood shop inspections; 15,879 recreational fishermen checks; and issued 1,033 citations and warnings for illegal activities. Thirty-eight percent of the citations and warnings (397) were for violations of recreational fishing laws and regulations. The 400 violations of commercial fishing laws and regulations comprised nearly 39% of the citations and warnings issued. Officers also issued citations and warnings for 171 violations of boating safety laws and regulations, 38 wildlife and freshwater fisheries, and 27 citations for other state and federal laws and regulations. A total of 8,713 hours was spent on administrative duties, court attendance, training, and equipment maintenance. Officers worked 874 hours with the NMFS interjurisdictional fisheries enforcement program.

Officers attended training courses on boat handling, criminal investigation, self-defense, supervision, and other state and federal agency law enforcement programs. Officers continued to enhance public outreach efforts to better communicate enforcement efforts to provide important information and to foster cooperative management initiatives.

Future Plans

The Enforcement Section continues to improve the Coastwatch Program and other public outreach efforts to better educate the public on enforcement efforts and important public information.

Procedures are being refined to enhance the Joint Enforcement Agreement (JEA) with NOAA and to assure that these agreements are implemented in future years. Enforcement continues to seek long-term funding to sustain JEAs.

Enforcement continued to work with the Gulf States and the NMFS to implement the *Gulf of Mexico Cooperative Law Enforcement Strategic Plan*.

Procedures are continuously being developed to provide officers with training to enhance Homeland Defense.

Efforts are fostered to allow the prosecution of violations in federal waters in the District Courts of Alabama.

FISHERIES SECTION

The activities of the Fisheries Section are directed toward management of commercial and recreational fisheries in Alabama's marine and estuarine waters.

These activities involve cooperative efforts with the NMFS in nearshore federal waters in the Gulf of Mexico and with other Gulf of Mexico state agencies to develop cooperative fisheries management programs. Most activities are funded through federal aid programs of the U.S. Departments of Commerce (NOAA/NMFS) and Interior (U.S. Fish and Wildlife Service). Biological programs not covered by federal aid such as fish kill evaluation, oyster management, shrimp management efforts, and pollution investigations are supported by commercial and recreational license fees. Section personnel also assist in oversight of natural gas activities within Alabama's coastal waters, territorial sea, and adjacent federal waters in the Gulf of Mexico and comment on applications for U.S. Army Corps of Engineer permits in the coastal area.

Fisheries facilities consist of the CPMC in Gulf Shores and the AMRD Laboratory on Dauphin Island. Personnel consist of one Biologist V, one Biologist IV, one Biologist III, four Biologist II's, one Biologist I, five Biologist Aides III, eleven Biologist Aides I/II, one ASA I/II, two by-weekly laborers, and three temporary laborers.

Accomplishments

Four new concrete pipe fishing reefs were constructed in Mobile Bay and Mississippi Sound, bringing the total of inshore fishing reefs to thirteen and completing the Roads to Reefs Program. Nine large reefs were constructed offshore in Alabama's reef zones from large-diameter concrete pipe. Benthic habitat was enhanced around three gas production platforms in lower Mobile Bay with an application of approximately 5,500 tons of soccer ball-sized limestone rock.

During the year, 841 fisheries assessment samples were taken, 91 habitat assessments were performed, and 4,477 fishermen were interviewed during creel surveys.

Federal Aid

Wallop/Breaux. Wallop/Breaux funds were administered through the U.S. Fish and Wildlife Service and were directed toward a creel survey of Alabama's seawater recreational anglers, production of the 2003 edition of the popular marine information calendar, construction of artificial 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 fishing 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 AMRD and coordinate with other Gulf States was also funded from this source. Personnel revised the Alabama Marine Resources Activity Book, which provides an interactive format for educating elementary students about the life cycles and habitats of local organisms.

Adult Finfish Sampling Program. The AMRD continued a fishery independent gillnet sampling program. Data was gathered on adult fish to assess the status of the stocks of several important species. Sampling was conducted through the use of two gillnet configurations and a stratified random design. In 2003, 7,198 finfish representing 49 species were collected. A stock assessment of striped mullet was completed and submitted to the Director.

Cooperative Statistics. Federal funds for this program were administered by the U.S. Department of Commerce (NOAA/NMFS) and were utilized by the AMRD to collect data on commercial shrimp, oyster, crab, and finfish landings. Additionally, information was compiled on processed seafood such as picked crabmeat. Landings information was collected from these fisheries. Biological information was collected on striped mullet, flounder, red snapper, and Spanish mackerel. Commercial seafood license information was stored on AMRD computers in a specifically designed database.

Southeast Area Monitoring and Assessment Program (SEAMAP). Funds from this program were administered by the U.S. Department of Commerce (NOAA/NMFS) and were utilized for the development of a long-term fishery independent database 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 provided funds for a project to independently assess the local red snapper population by video camera and fish trap sampling conducted in Alabama's offshore artificial reef permit areas in the Gulf of Mexico.

The Marine Recreational Fisheries Statistics Survey (MRFSS). All quotas established by the NMFS were met or exceeded in 2003. Personnel from the AMRD completed 2,687 interviews of fishermen. Through

July 2003 (the most recent data available), over 142,000 fish were identified representing 66 species. Of these, 6,684 fish were measured. The AMRD continued the Vessel Directory Telephone Survey (VDTS) in cooperation with the Gulf States Marine Fisheries Commission and the other Gulf States. This survey has greatly improved the estimates of effort within the charter boat industry. An economic survey was completed in June to assist in calculating the value of the charter fishing fleet in the Gulf of Mexico.

Otolith Sampling Program. In January 2002, AMRD 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 3,332 otoliths were collected in 2003.

Commercial Trip Ticket Program. Funding was provided through the Gulf States Marine Fisheries Commission and 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, is an electronic entry program. A computer program allowed seafood dealers to enter landings and trip information and submit it electronically via the internet on a monthly basis. Data from the completed trip tickets is scanned into a computer, verified, and edited. Monthly data are sent to the Gulf States Marine Fisheries Commission and will ultimately be supplied to the NMFS.

Coastal Impact Assessment Program (CIAP). These funds were administered through the Lands Division of the Alabama Department of Conservation and Natural Resources and utilized in a program to remove derelict crab traps from Alabama coastal waters and beaches. The program resulted in the removal of 1,074 derelict traps. CIAP funds also provided two renovated boat ramps and several inshore and offshore artificial reefs.

Nonfederal Aid

Alabama Oyster Reef Enhancement. A formally barren bottom and a marginally productive oyster reef in Portersville Bay, Mississippi Sound, Alabama, were planted with 20,000 cubic yards of oyster cultch material in 2002 to enhance oyster growth and create a new reef in this once productive section of Alabama waters. Both areas were surveyed by dredge in July

2003 and had caught an excellent spat set. Oysters in this area should be of harvestable size in late summer 2004.

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 AMRD continued a 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 program continued to be very successful and promoted the students' ability to participate in future fisheries.

Personnel maintained and improved the home page for the AMRD, which is associated with and accessed through the Department's home page at **www.dcnr.state.al.us**. The feedback to this site was extremely positive and proved to be a tremendous asset in getting information and assistance to the public.

Future Plans

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

Development of Mariculture procedures for commercially and recreationally important marine organisms will continue. Mariculture will be enhanced by the completion of saltwater supply pipeline from the Gulf State Park in Gulf Shores to the CPMC.

Cooperative programs will continue with Auburn University, the Dauphin Island Sealab, and the University of South Alabama to investigate artificial reef benefits and red snapper production enhancement.

The addition of new stations within inshore assessment and monitoring will provide a more comprehensive depiction of Alabama's marine waters and resources.

Continuation of the MRFSS in Alabama including creels of anglers on charter boats, private boats, and the shoreline and the continued telephone survey will better define effort within the charter fishery.

The effort to remove derelict crab traps will continue with an expanded program scheduled for spring 2004. Collection of Alabama's commercial seafood landings data via Alabama's Trip Ticket Program and collection of commercial biological fishery dependent data will continue.

F FLORIDA FISH & WILDLIFE CONSERVATION COMMISSION

Kenneth D. Haddad, Executive Director

During 2003 (i.e., state fiscal year 2003/2004), the Executive Office, Division Directors, and Regional Directors with their respective staff were actively involved in planning and implementing a reorganization of the Florida Fish & Wildlife Conservation Commission's (FWC) operational units. Goals of reorganization were to affect a better focus on mission critical activities, improve efficiency through consolidation of similar functions performed by multiple organizational units, and enhance communications within and without the agency. The Florida Legislature approved the plan, and the FWC officially reorganized on July 1, 2004. With specific references to marine fisheries, the Division of Marine Fisheries became the Division of Marine Fisheries Management, commercial saltwater fishing license staff transferred from the Division of Marine Fisheries to the new Office of Licensing & Permits, and FWC research activities were consolidated into the new Fish and Wildlife Research Institute. The following summary of agency accomplishments uses the "old" organizational nomenclature, in effect during the reporting period.

DIVISION OF MARINE RESOURCES

Mark S. 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 research education,
- 4) the state artificial reef program,
- 5) monitoring compliance with marine fisheries trip ticket reporting requirements through 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 2003 are summarized below.

Marine Fisheries Management and Policy Development

During 2003/2004 the FWC passed a rule to raise the minimum size limit for permit and pompano from 10" to 11" fork length and lowered the recreational aggregate bag limit for pompano and permit from ten to six fish in response to the latest stock assessment information that pompano is undergoing overfishing on both coasts. The rule also applied the 250 pompano commercial harvest limit to fish caught in federal waters where there were no limits before. The FWC also approved the conceptual development of fisheries strategic plans for Florida's inshore marine fisheries. A rule was issued to ban the harvest

of puffer fish from five East coast counties because of the occurrence of saxotoxin poisoning from the ingestion of puffer fish from this area. A rule was established to implement a licensing program in the 2004-2005 season for commercial lobster divers. This program includes a moratorium on the issuance of new commercial dive permits until July 1, 2010. This rule also created a daily vessel harvest and possession limit of 250 lobsters for commercial divers in Monroe, Dade, Broward, Lee, and Collier counties and a statewide vessel limit of 250 lobsters caught with commercial bully nets. It also established dive vessel marking requirements and prohibits the harvest of lobsters by commercial divers within ten years of artificial habitats. The FWC took final action on a rule to prohibit the snagging and snatch-hooking of tarpon and limit the number of fishing lines in the water per boat in the waters of Boca Grande Pass to no more than three during April, May, and June. The FWC passed a rule to permit catch-and-release red drum fishing tournaments to allow participants to catch, hold in a live well, release fish under certain conditions, and allow two-person teams to possess two fish. A rule that consolidates and reorganizes the marine Special Activity License Program into a single rule chapter and establishes various rule criteria and standards was finalized. A series of rules to address various trap-fishing issues were also approved. These included degradable panel orientation in stone crab traps, aspects of the lobster and stone crab certificate programs, and extending the blue crab trap closure throughout the Gulf of Mexico between three and nine miles from September 20 through October 4 each year. Effort management programs for the blue crab fishery and the marine ornamental fishery were also in the works.

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 Sport Fish Restoration Program. Ten fishing shows across Florida gathered over 43,000 anglers who interacted with FWC staff on a wide variety of fisheries related topics. Five *Ladies, Let's Go Fishing* clinics were held where 390 women interested in learning more about sport fishing and fish resources participated in these two-day events. A total of 11 *Kids Fishing* clinics were conducted state wide. Throughout the year, 5,085 children participated in the clinics and had a positive fishing experience learning about ethical angling and habitat conservation. The Pigeon Key facility and Cedar Key Field Laboratory were the backdrop for 1,278 students to learn how to use equipment and sampling methods that FWC biologists utilize to collect data for fisheries management. Eleven teacher workshops were conducted state wide and 166 teachers were instructed in fisheries management practices and proper specimen collecting methods for classroom learning programs.

Artificial Reef Program

During 2003/2004, \$300,000 from a USFWS Federal Aid in Sportfish Restoration grant, in concert with \$300,000 in state fishing license revenues provided funding to sixteen local coastal governments and two non-profit organizations for ten marine artificial reef construction projects, one socio-economic study of artificial reefs, and seven monitoring projects. The ten construction projects consisted of reefs using designed concrete reef modules, limestone boulders, and scrap and concrete materials. The socio-economic study was conducted in Martin County located on the East coast of Florida. The monitoring projects consisted of fish census and deployment verification mapping projects. On November 21, 2004, the FWC approved the Florida Strategic Plan developed with the assistance of a 12 person Artificial Reef Advisory Board with public input from four public workshops. On April 5, 2004, the U.S. Navy announced the award of the donation of the aircraft carrier USS ORISKANY to Florida for deployment as an artificial reef at a site located 22.5 nautical miles southeast of Pensacola Pass at a depth of 212 feet. Since then, FWC staff worked closely with the Navy and EPA on the necessary environmental cleaning preparations and addressing human health risk assessments and PCB analysis. The anticipated date of deployment is winter 2004, but deployment is subject to change based on the

completion of the EPA human health risk assessments. In 2003/2004, the Florida Legislature appropriated an additional \$195,000 (\$120,000 from a USFWS grant and \$75,000 from state fishing license revenues) for a cooperative effort with the University of Florida Department of Fisheries and Aquatic Sciences. Phase I activities include the construction and deployment of artificial reef modules off the Florida Big Bend as part of a project designed to identify and alleviate a potential bottleneck in the life history of recreationally and commercially important fish species. Construction on the gag grouper project will begin in fall 2004. The FWC awarded a \$59,940 research grant to the University of West Florida to study the effect of 502 unpublished artificial reefs deployed by the FWC during 2003 in four expansive areas off northwest Florida using three different types of prefabricated reef units.

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. Nine saltwater products wholesale dealers were audited for purchases from unlicensed fishers and compliance with trip ticket reporting requirements. Six administrative hearings were 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. The Division's liaison with commercial fishers and saltwater products dealers produced a newsletter on commercial saltwater fishing regulations, issued several notices regarding proposed regulations, workshops, etc. by e-mail and regular mail, and began development of a regulations newsletter in Spanish. The liaison also became known as the contact person for those with questions on proposed rules or problems with license application. The Florida Legislature approved industry requests to raise the spiny lobster commercial permit fee by \$25 to fund trap retrieval activities and to specifically allocate stone crab trap certificate fee revenues to trap retrieval, purchase of trap pullers for law enforcement vessels, and posting signs to warn the public that molesting or stealing traps was a felony violation with criminal and civil penalties. The program retrieved 3,001 illegal traps from bay side and ocean side waters of the Florida Keys from Key Largo to Key West. Plans to expand the effort include the addition of the Tortugas and Marquesas next year. This section administered the Federal Food Shrimp Fishery Disaster Relief Program; awards were issued in February 2004 to

1,203 eligible shrimp fishermen and wholesale dealers. The FWC entered into a contract with the Department of Agriculture and Consumer Services for implementation of a campaign to promote Florida's wild shrimp harvest.

FLORIDA MARINE RESEARCH INSTITUTE

Gil McRae, Director

Finfish

A three-year study of spotted seatrout (*Cynoscion nebulosus*) reproduction continued in Tampa Bay. Study was designed to supplement earlier work conducted on the east coast of Florida and was aimed to determine geographically-specific maturity schedules, spawning frequency, and batch fecundities in order to refine the accuracy of spawning potential ration (SPR) estimates for spotted seatrout in Florida waters. Study continued on age, growth, and reproduction of Florida pompano (*Trachinotus carolinus*) along the Gulf coast of Florida. Work also continued on the biology and ecology of reef fishes in southeast Florida, with an emphasis on the life history of yellowtail snapper (*Ocyurus chrysurus*) in support of a stock assessment conducted during the period. A study of catch and release mortality of tarpon is underway, as well as an intensive data collection program aimed at fully characterizing the state's snook fishery. Life history and fishery characterization studies were conducted for American shad and wahoo populations in Florida.

The Florida Keys Finfish Research Program continued to monitor abundance, size structure, and habitat utilization of economically important fish species (including grouper, snapper, grunt, butterflyfish, angelfish, hogfish, triggerfish, and bigeye) inhabiting reef areas in the Florida Keys National Marine Sanctuary (FKNMS) using census surveys. Most species observed during surveys have shown consistent densities and size structure over the last five years of the study. Mean densities overall were higher in 2003 (69 fish/100 m²) than in 2002 (48 fish/100m²). In addition, one-third lower densities of yellowtail snappers and gray snappers were observed during 2002 and 2003 than were observed during the first three years of the study from 1999-2001. As in previous years, grunts strongly dominated surveys, accounting for 84% of the individuals observed. Length distributions for economically important species for many of the snapper and grouper species observed have been in the smaller size classes for their species. In 2003, a low percentage of yellowtail snappers (7.4%), red groupers (17.3%), black groupers (9.8%), scamps

(5.9%), and gag groupers (4.2%) were observed at or above the legal recreational fishing size limit.

Mollusks

Bay scallop (*Argopecten irradians*) population restoration is ongoing in the area between Pine Island Sound and Crystal River, and assessment of success was evaluated via surveys of adult abundance and recruitment patterns. Studies of calico scallop (*Argopecten gibbus*) population attributes were initiated on the east Florida shelf and in southwest Florida. Larval dispersal and genetic studies of hard clams (*Mercenaria*) continue. An oyster (*Crassostrea virginica*) population monitoring program was initiated in southeast Florida.

The queen conch research and restoration program continues to monitor juvenile and adult queen conch abundance throughout the Florida Keys in order to track the recovery of the species. Since 1999, the number of adult conch in offshore breeding aggregations has increased steadily. It was estimated that there were 37,000 adults in spawning aggregations in 2003; in addition, it was estimated that there were approximately 25,000 juveniles in offshore aggregations as well.

Restoration efforts focused on transplanting non-reproductive conch from nearshore sites to offshore breeding aggregations. With the aid of volunteers, 2,000 conch were transplanted to offshore aggregations at Looe Key and Eastern Sambo. Monitoring and acoustic tracking of the most recent transplants has shown that the transplanted conch do not displace the native animals, and transplanted conch remain in the area over an extended period of time. In order to identify the locations where adult conch should be transplanted to maximize the probability that their progeny are retained and deposited in the Florida Keys, 5,000 drift vials were released over known spawning aggregations to examine the fate of the larvae. An additional 4,000 drift vials were released in Mexico and the Gulf Stream to examine the contribution to recruitment from larvae originating upstream from the Florida Keys. Finally, work has begun on a two-year EPA grant designed to determine the cause(s) of the lack of reproduction in the nearshore population using an endocrine disruption approach. Fifteen male conch were estrogenized in the lab so partners at the University of Florida can develop an enzyme linked immunosorbent assay. The blood of these conch, along with the blood of three wild males and three wild females to be used as references, was sent to the university for bioassay development.

Crustaceans

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). During the fiscal year, work continued on a three-year grant that included studies to characterize the shrimp fisheries, to gather information on the blue crab fishery, and to identify spawning beaches and determine the population genetic structure of horseshoe crabs. Manuscripts on the efficiency of BRDs in skimmer trawls and on the genetic stock structure of blue crabs, pink shrimp, brown shrimp, and white shrimp were published in peer-reviewed journals. Manuscripts are being prepared on the population biology and fisheries biology of stone crabs in northwest Florida and in the Tampa Bay area, and on the effectiveness of BRDs in roller frame trawls. Field studies continued on the population biology of blue crab and stone crab in the Tampa Bay area.

The spiny lobster program continued to monitor landings and other important fishery components for both the commercial and recreational fisheries. Commercial lobster fishery landings were 4.6 million lbs during the 2002-2003 fishing season, up from last year's 3.1 million lbs but still well below the long-term average of 6 million lbs. Recreational lobster license holders returned nearly 2,000 survey questionnaires. Their responses indicate that 340,000 lobsters were landed statewide during the Two-Day Special Sport Season and 838,000 lobsters were landed during the first month of the regular season. In order to ground truth mail surveys, a creel survey was designed. Recreational harvesters captured, on average, the same sized lobster, as do commercial fishermen. Interestingly, harvest reported by the mail surveys appeared to be slightly greater than that observed in the creel surveys.

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

Fisheries Genetics

The fisheries genetics research program has two principal directions: 1) genetic stock identification of economically important marine organisms and 2) monitoring the effects of FWRI hatchery operations on the gene pools of wild populations supplemented with hatchery reared organisms and monitoring the success of stock restoration efforts. Genetic stock identification studies of naturally hybridizing populations of weakfish and sand seatrout were completed; a summary report to the FWC was generated, and a manuscript was nearly completed. Genetic analyses of spotted seatrout, vermilion snapper, and common snook continued. A species-identification study of bonefish in south Florida was initiated.

Fisheries Statistics

The Fisheries Dependent Monitoring Program at FWRI had three distinct components:

- 1) marine fisheries trip tickets to monitor commercial landings, effort, and value;
- 2) marine recreational fisheries surveys to monitor recreational catch, harvest, and effort; and
- 3) biological sampling of specimens from commercial and recreational harvests through trip interviews (commercial) and angler interviews (recreational).

These data are useful for stock assessments in characterizing the magnitude of harvest by fisheries and in providing samples for determining the size, sex, and age composition of the harvest of many species. Additional data are taken for length-weight and length-length relationships, and in some cases other tissue samples are taken during the sampling for genetic analyses or mercury testing.

During 2003, Florida commercial landings totaled approximately 98.5 million lbs of fish, blue crab, and stone crab claws, clams (not including aquacultured clams), lobster, shrimp, and other invertebrates worth over \$170 million from 237,163 commercial trips. Marine life landings (live fish and invertebrates for aquaria and other uses) in 2003 amounted to over 6.3 million individual species worth over \$2.45 million. Live rock (aquaculture only) and live sand (both for saltwater aquaria) amounted to nearly 900,000 lbs worth about \$220,000 during 2003. The top ten species rated by the commercial value of the landings were: stone crabs (claws \$22.9 million), pink shrimp (\$21.7 million), Caribbean spiny lobster (\$18.8 million), red grouper (\$11.7 million), blue crab (including soft-shell crabs \$9.6 million), rock shrimp (\$7.5 million), gag grouper (\$7.2 million), white shrimp (\$6.1 million), bait shrimp (\$5.5 million), and

striped mullet (\$5.4 million). The commercial harvest of food shrimp was just over 21.8 million lbs in 2003 compared with a little over 20 million lbs in 2002 but averaged \$1.87 per lb in 2003 compared to \$2.01 per lb. Commercial landings during 2002 were roughly similar, with about 97 million lbs landed worth approximately \$171 million from 248,419 commercial trips.

Stock Assessment and Population Modeling

In March 2003, 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 135 species/groups during the period 1993-2002. Detailed narratives were provided on the biology, fishery, and past assessments for six popular species in Florida. The assessment group developed stock assessments for yellowtail snapper, Atlantic croaker, managed contracts for assessments on hogfish and gray angelfish, authored reports on the blue runner and black sea bass fisheries, and updated portions of assessments for Caribbean spiny lobster and striped mullet in July 2003-June 2004. 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.

Stock Enhancement

During 2003, 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 increase the population of that species without displacing wild fish. The experimental design 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%. Calendar 2003 was the fourth year of releases and by year's end, more than 3.54 million fish were released comprising five different size classes. Experimental releases were to continue through calendar year 2004. In late 2005 or early 2006, production scale releases will begin and assessment of the effect as well as a cost-effectiveness analysis will be completed.

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, National Marine Fisheries Service, and the FWC. More than 50,000 hatchery-reared snook have been released, the majority in Sarasota Bay. The goals of this project are similar to Project Tampa Bay described above.

Coral Reefs and Hardgrounds

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 (FKNMS) Coral Reef Monitoring Project. Significant declines in relative percent coral cover were documented in 1997 and 1998; however, coral cover and species diversity remained relatively stable since 1999. In 2002, additional sampling protocols were instituted at nine sites to better elucidate cause and affect relationships. Expansion of the Coral Reef Monitoring Project into Broward, Dade, and Palm Beach counties was proposed through the FDEP. Eight sites were sampled during 2002 in Dry Tortugas National Park. Coral cover and species diversity are relatively high at several reefs; however, there is 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 palmate* (inhabiting only one site in Dry Tortugas) appeared to be declining, possibly from a form of disease.

The FWRI 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 FWRI was sub-recipient of funds through Florida State University from the GMFMC 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.

Aquatic Health

The Aquatic Health Group monitors the health of marine fishes throughout the state of Florida. From July 1, 2003 to June 30, 2004, 1,408 fish were evaluated for abnormalities, parasites, and disease conditions. In the Tampa Bay Project, 718 were

evaluated. Of these, 299 were collected from the Alafia. There were also 420 cultured fish from SERF evaluated. Results continued to suggest that stocked fish are having little or no impact on the health of wild fish, and recaptured stocked fish are acclimating to health challenges in the wild.

The most common species evaluated during the year were red drum, striped mullet, southern puffer, and hardhead catfish. The **Marine Fish Kill Hotline** (1-800-636-0511) received 1,037 calls, which were responded to. Of those calls, 99% reported fish kills, fish with parasites, other aquatic mortality and disease events, or requested information. Staff investigated 18 fish kills, primarily related to low dissolved oxygen (83%) and red tide (11%); an estimated 211,032 fish were affected.

Staff completed the investigation on the cause of ulcers in marine and estuarine fish in Florida and completed two manuscripts. These reports of ulcerative mycosis caused by the fungal pathogen *Aphanomyces invadans* represent new host records for sheepshead, striped mullet, silver mullet, silver perch, black drum largemouth bass, and American shad. The manuscripts will be submitted to the Journal of Aquatic Health for publication.

Harmful Algal Blooms

The Red Tide Monitoring Program, MERHAB2002: Eastern Gulf of Mexico Sentinel Program and Harmful Algal Bloom (HAB) related research grants which focused on toxin issues, the significance of PSP to Florida, nutrient-HAB issues and ballast water introductions were the primary focus of the HAB group. Monitoring of *Karenia brevis* and other potential HABs in Florida waters increased this year due to environmental concerns in Bishop Harbor and Piney Point, the Panhandle dolphin mortality event, and puffer fish poisonings from the Indian River Lagoon and the association of *Pyrodinium bahamense*. During 2003-2004, a red tide was present from Pinellas to Sarasota County in early 2003 and continued as far south as Naples through November and north to Pinellas through the first week in March 2004. HAB staff analyzed over 3,744 water samples for HAB species identification, and conducted 86 NSP mouse bioassays and four PSP mouse bioassays for shellfish aquaculture consumer safety. The HAB toxin lab completed immunoassay, receptor-binding, and enzyme assay analyses on approximately 4,500 samples of water, animal tissues and fluids, seagrass, and sediments for the detection of brevetoxin, saxitoxin, okadaic acid, domoic acid, and microcystins. Two grant-funded studies examined saxitoxin in Indian River Lagoon

dinoflagellates, pufferfish, and other biota where pufferfish continued to be toxic and the puffer-harvesting ban was extended indefinitely. Other projects screened Florida manatees for the presence of brevetoxin, saxitoxin, and okadaic acid and studied brevetoxin accumulation in fish. Following the dolphin mortality, fish collected from St. Joseph Bay contained significant levels of brevetoxin and brevetoxin metabolites, but none were above the regulatory limit set for brevetoxin in shellfish (80 ug/100 g).

Habitat Assessment

The FWRI habitat assessment projects seek to assess the ecological status of coastal fisheries habitats, evaluate trends in coastal ecosystem health, and identify physical and biological factors that influence coastal plant communities. The FWRI staff also developed ecologically and economically sound practices for restoring coastal habitats. Seagrass habitats are the current focus of study due to ongoing decline 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 groups.

Habitat assessment research included

- 1) 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 (ecoinicators) 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.

Marine Mammals

During 2003, there were 380 manatee mortalities recorded by the FWRI. Weekly and monthly updates of manatee mortality data were posted regularly on the FWRI website for public use.

In February, 2,568 manatees were counted by 23 observers in 20 areas on both coasts during the annual state-wide synoptic survey. Aerial surveys

were flown twice monthly in Volusia and Indian River counties throughout the winter months.

Aerial surveys were conducted in Florida and its adjacent waters since 1991 to monitor the seasonal occurrence of right whales. This effort focuses on alerting vessels to the presence of right whales within the southeast critical habitat. Sixty surveys were conducted this season resulting in 42 sightings of right whales. Staff was involved in disentanglement efforts and participated in documenting and responding to several unusual right whale sightings this season.

Marine Turtles

Staff from the FWRI coordinated the Florida portion of the Sea Turtle Stranding and Salvage Network (STSSN), an 18-state program administered by the NMFS. A total of 2,184 sea turtle stranding incidences were documented in Florida during 2003. Sea turtle populations were monitored by recording numbers of nests made on Florida beaches, a number that is proportional to the number of breeding females in the population of each species. In 2003, 186 survey areas were monitored, comprising 1,301.6 km of beaches. A total of 63,446 loggerhead nests; 2,262 green turtle nests; and 842 leatherback nests were documented.

Information Science and Management

The FWRI continued to support the FWC through application of geographic information systems (GIS) and remote sensing technologies. Projects of interest to GSMFC include:

Marine Recreational Fishing. This work aims to identify the portion of the population that participates in the marine recreational fishery. The relationship between the entire population and fishery participants changed through recent history to develop a predictive model that will provide insight into possible changes in recreational fishing, given various future scenarios.

Habitat Suitability Modeling. FIM fisheries data and various statistical programs were continued 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. Work continued with the University of Florida to characterize boating activities to understand the impacts that boating has on the environment, and the

impacts that development, population growth, and management actions have upon boating.

SEAMAP

During 2003, 3,689 lots of invertebrates, 502 lots of fishes, and 34,725 lots of SEAMAP larvae were accessioned into the collections; over 300 scientific and educational specimen loan requests were received and provided; more than 400 requests 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.

DIVISION OF WILDLIFE

Frank Montalbano, Director

Imperiled Species Management

Kipp Frohlich, Section Leader

The ISM is responsible for 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 Resource Conservation Trust Fund. Save the Manatee Trust Fund provided monies for right whale protection efforts.

Marine Turtles

The Marine Turtle Protection Program worked for the protection of threatened and endangered marine turtles and their critical nesting beaches, development habitat, and foraging habitat along Florida's coast. Florida is a lead state or 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 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 habitats (management), and in public education about marine turtles.

Accomplishments:

- ♦ The marine turtle license plate went on sale in February 1998. A cumulative total of 105,937 plates have been issued generating a total of approximately \$5,589,383 in revenue for the state (including vehicle registration fees and renewals). During 2003, the state issued or renewed 68,327 turtle plates.

- ♦ During 2003, Imperiled Species Management staff managed 17 marine turtle grants including review and approval of deliverables. Staff assisted the FWRI in soliciting and reviewing marine turtle grant proposals for 2003-2004. On July 1, 2003, oversight of the marine turtle grants program transferred to the Caribbean Conservation Corporation. Oversight was provided for the marine turtle permit review and approval process through the Marine Turtle Grants Committee.
- ♦ Approximately 164 marine turtle permits were issued during 2003. This included about 87 permits for nesting survey work, about 27 permits for sea turtle stranding and salvage work as well as permits for turtle walk programs, educational display of loggerhead turtles, and rehabilitation work. 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 *Marine Turtle Permit Holder Guidelines*.
- ♦ A \$500,000 grant from the USFWS was completed which developed off-beach parking in Volusia County.
- ♦ State captive facilities that rehabilitate marine turtles or hold turtles (loggerhead and non-releasable turtles) for educational purposes were monitored. Three sea turtle holding facilities were inspected. These inspections focused on compliance with Sea Turtle Conservation Guidelines and ensure the facilities are safe for turtles temporarily or permanently held.
- ♦ The Tequesta Field Lab participated in the annual rehabilitation workshop held at Hidden Harbor Sea Turtle Hospital. The number of turtles received in rehabilitation facilities, successful rehabilitation rates, and a five-year summary of sea turtle holding facility data was presented. Certificates of appreciation were given to each rehabilitation facility in recognition of their responses to the increased rehabilitation needs associated with elevated strandings over the past two years.
- ♦ Work continued with the USFWS on a grant-funded project to minimize lighting impacts on marine turtles.
- ♦ Technical expertise was provided on marine turtle protection during the review of 263 FDEP and other state permits. This included 28 applications for coastal armoring installation or repair, 63 lighting plans, four rock revetments, ten dredging applications, and eight beach nourishment applications. Marine turtle protection conditions were provided for 177 permit applications, field permits, or special events. Numerous meetings were attended with agencies and individuals to discuss application of projects and minimization of impacts to marine turtles. Assistance in design, implementation, and review of monitoring to assess the impacts of permitted activities on marine turtles, their nests, and hatchlings continued.
- ♦ The FDEP was assisted in the development and implementation of updated standard conditions for marine turtle protection during beach cleaning and special events. A meeting was co-hosted with FDEP for beach cleaners and concessionaires to discuss these conditions.
- ♦ The 2004 International Sea Turtle Symposium was held in San Jose, Costa Rica, where staff presented a five-year summary of sea turtle holding facility data including a comparison to the previous five-year period.
- ♦ Data was presented on environmental considerations for beach nourishment at the Annual Florida Beach and Shore Preservation Society meeting.
- ♦ Staff was invited to present at the Annual Florida Local Environmental Resource Agencies, Inc. meeting on the FWC Marine Turtle Protection Program.
- ♦ Staff served as expert witness during a F.S. Chapter 120 hearing for a FDEP permit issued pursuant to F.S. 161, the Coastal Construction Control Line Program.
- ♦ The Tequesta Field Lab conducted sea turtle necropsies with the FWRI Sea Turtle Stranding and Salvage Network during two necropsy events at the pathology laboratory in St. Petersburg. Necropsy events take place every two months and gross necropsies are conducted on 40-70 sea turtle carcasses.
- ♦ Work continued with federal, county, and municipal organizations to minimize lighting impacts on marine turtles. The Tequesta office managed the hatchling disorientation database, contacted local government, and helped to formulate appropriate actions to resolve problem lights on Florida's nesting beaches. Ten nighttime lighting inspections were conducted to identify problematic light sources and provide recommendations for potential solutions for each problematic light.
- ♦ Work coordinated with the NMFS to acquire, distribute, and conduct training in the use of various mouth gags and dehooking devices. Due to a delay in production of the training video, kits were not distributed in 2003/2004.
- ♦ In cooperation with the USFWS, local governments, and local conservation

organizations, the official Marine Turtle Lighting Course was developed and implemented.

- ♦ Staff participated in the Archie Carr Working Group and attended meetings on a regular basis.
- ♦ Sea World hosted and co-sponsored the 2003 Marine Turtle Permit Holder Workshop. Approximately 200 marine turtle permit holders, volunteers, and agency staff attended this two-day event.
- ♦ Educational activities for marine turtle conservation included 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 funding-raising activities. Thirteen, colorful marine turtle decals and three posters were developed that depict the marine turtle species that occur in Florida and their marine habitat. Proceeds from the sale of these marine turtle decals, primarily associated with boat registrations and the sea turtle license plate help fund the agency's marine turtle program.

Manatees

The Imperiled Species Management Section implements many tasks of the Florida Manatee Recovery Plan. The activities focused on five program areas:

- 1) Development and implementation of county-based manatee protection plans (MPPs).
- 2) Promulgation of boat speed regulations to protect manatees.
- 3) Review of permitted activities to minimize negative impacts to manatees.
- 4) Various directed efforts to protect manatee habitat, particularly warm water refuges and seagrasses.
- 5) Outreach activities to provide education and information to the public.

Accomplishments

- ♦ Staff reviewed and prepared comments on the Brevard, Sarasota, Indian River, Duval, Volusia, Broward, and Clay counties MPP drafts. The FWC approved final plan for Sarasota County

and approved plan amendments for Indian River County.

- ♦ A total of 633 projects were reviewed during the year and biological opinions and recommendations were provided to reduce or eliminate potential negative effects of the proposed activities. Numerous meetings with Cabinet Aides were attended in order to assist with agenda items regarding impacts to manatees.
- ♦ General Provisions of the state and speed zone rule 68C-22 were amended. The Lee County speed zone rule was challenged; judges ruling found that the zones exceeded FWC statutory authority. The FWC appealed the order to the Circuit Court and the Second District Court of Appeal; however, all attempts were denied for procedural reasons.
- ♦ Lee County was notified that the FWC was considering rule making to re-address the Lee County rule and asked the county to form a Local Rule Review Committee. The committee had 60 days to submit a report.
- ♦ Speed zones for Tampa Bay were developed, and the Tampa Bay Local Rule Committee provided recommendations for FWC to consider as the proposal was developed. The FWC approved moving forward with a final rule, and two public hearings were held in the area in June. A final public hearing was scheduled for September 2004.
- ♦ Staff continued to provide the Way of the Manatee Treasure Box program to teachers in Leon and Wakulla counties. These kits, available on a loan basis, provide a free resource for teachers to educate their students on manatees, habitat protection, and their environment.
- ♦ An intranet company specializing in educational field trips on line for classroom worked with staff to develop an e-field trip about manatees. This self-guided tour into the life of the manatee meant elementary and high school students nationally and internationally could learn about the manatee. The field trip reached 25,000 public, private, and home-schooled students in 45 states. During the initial month the e-field trip went online, staff participated in a live web chat with 80 students. A written "Ask the Experts" question session provided additional contact with 250 students.
- ♦ A new message was developed for manatee outreach efforts called *The Florida Manatee – A Florida Treasure*. Posters and brochures were developed and integrated into other educational efforts.

- ♦ The FWC completed an assessment of manatee foraging impacts to aquatic vegetation in Manatee Springs off the Suwanee River. The study used cages placed around aquatic vegetation to prevent manatees from eating protected plants and assessed the recovery of resources after manatees left the system. An article entitled *Managing Natural Aquatic Plan Communities in Manatee Springs: The Effects of Manatee Grazing, Nutrient Pollution, and Flooding* was published in the August 2004 edition of *Aquatics*.
- ♦ The FWC coordinated with the ACOE and SFWMD to address central and south Florida structure-related mortality issues through the Interagency Task Force for Water Control Structures.
- ♦ The FWC co-chaired the Warm-Water Task Force (WWTF) and Habitat Working Group (HWG) with USFWS partners in 2003. An action plan was drafted and a warm-water management plan was begun. The HWG worked on refining habitat recovery criteria in the manatee recovery plan.
- ♦ The FWC continued work with federal and SFWMD partners to draft recommendations for manatee protection in Comprehensive Everglades Restoration Plan (CERP). Recommendations will address culvert and water control structure installation, potential Aquifer Storage and Recovery thermal effects, potential manatee entrapment in canal networks and in-water construction effects. Manatee Habitat Evaluation Surveys were conducted in over 100 miles of flood control canals in the Everglades and Everglades Agricultural Area.
- ♦ Work began in cooperation with the Kings Bay Advisory Group to restore submerged aquatic vegetation in the Kings Bay in Crystal River. Assessments were performed of invasive algae removal techniques to determine if those efforts improved flowering plant abundance. Through regional citizen and interagency coordination, the group hoped to complete ecological restoration of Kings Bay.

Florida Department of Agriculture and Consumer Services
Division of Aquaculture
Bureau of Aquaculture Development
Mark Berrigan

During 2003/2004, the bureau continued its commitment to encourage the development of the aquaculture industry in Florida. Aquaculture will

become an integral segment of Florida's agricultural and economic future by providing high quality aquaculture products to worldwide markets while advancing resource management. Numerous activities were conducted to promote development of aquaculture. These activities included regulatory, administrative, advisory, and technical functions directed toward ensuring that aquaculture activities 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 components:

- 1) Aquaculture Certification Program
- 2) Sovereign Submerged Lands Aquaculture Leasing Program
- 3) Oyster Culture and Shellfish Resource Development Program
- 4) Technical Support Program (Ombudsman, training, technical outreach, 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. Its core programs offer unique and essential services to this emerging sector of Florida's agricultural community. The bureau's programs provided the regulatory framework for aquaculture programs, provided specific farming areas on state-owned submerged lands, and provided responsible stewardship for Florida's natural aquatic resources.

The Florida Agricultural Statistics Service (2004) reported sales of Florida aquaculture products exceeded \$95 million in 2003, a moderate decline of 4% from 1999. Sales of hard clams and oysters contributed substantially to the decline in reported values; decreasing to \$13 in 2003 from \$18.3 million in 2001. Production of hard clams was lower than in 2003, but the unit price for hard clams declined 20%-25% over the period affecting the overall product value.

Aquaculture Certification Program

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

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

During 2003/2004, 1,018 aquaculture facilities were certified. Shellfish producers (509 farmers) make up 50% of the certified farms, 222 ornamental producers make up 22% of the certified farms, and 202 food fish producers make up 20% of the certified farms. The remainder produced live rock, alligator, and bait. Certified farms were found in 61 of the state's 67 counties: The highest number of certified farms occurred in Levy County (20%), Hillsborough County (10%), and Dixie County (9%).

Sovereignty Submerged Lands Leasing Program

The bureau is responsible for the Aquaculture Lease Program under provisions in Chapter 253, F.S. It administered 664 aquaculture leases containing about 1,581 acres and 82 shellfish leases containing about 1,321 acres. Leases are located in ten counties, including Brevard, Charlotte, Dixie, Franklin, Indian River, Lee, Levy, Monroe, Pinellas, and Volusia counties. By statutory mandate, the bureau identified tracts of submerged lands throughout the state that are suitable for aquaculture development. Twenty special aquaculture use areas were identified and authorized by the Board of Trustees in eight coastal counties including Franklin, Dixie, Levy, Charlotte, Lee, Indian River, Brevard, and Volusia counties. Potential aquaculture use areas in the Ten Thousand Islands located in Collier County were evaluated. In cooperation with the Office of Agricultural Law Enforcement, bureau staff 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 producing clams on submerged lands is the largest marine aquaculture business in Florida. Hard clam sales accounted for \$13 million in 2003 (Florida Agriculture Statistics Service 2004). Farming hard clams is different from many other agriculture activities since cultivation usually requires the use of state-owned land. Unlike many upland agriculture activities conducted on privately held lands, marine aquaculture must be conducted on or over submerged lands that are largely held in the public domain. Only a small amount of suitable

submerged acreage is privately owned; therefore, marine aqua-farmers are dependent upon the use of public lands to grow their crop. Accordingly, the department must act on behalf of the Governor and Cabinet to administer and manage public lands in the best interest of the people of Florida while protecting valuable natural resources.

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 actively enhanced shellfish resources and restoring reefs on public submerged lands. During 2003/2004, 63,116 bushels of processed oyster shell from Franklin County processors were collected and 127,872 bushels were planted on public reefs. Oyster resource development projects were conducted in cooperation with local oystermen's associations in four coastal counties. A total of 261,870 bushels of live oysters were re-planted on public reefs in Franklin, Wakulla, Dixie, and Levy counties.

Conserving Public Oyster Reefs

The bureau applied its expertise and equipment to mitigate potential impacts on oyster resources in Apalachicola Bay. The department completed a joint project with the Florida Department of Transportation and the FDEP to enhance and restore public oyster reefs as part of the St. George Bridge Replacement Project. The mitigation plan involved the restoration of oyster reef habitat by placing processed oyster shell and live oysters on designated reefs.

Technical Support Programs

Substantial technical and administrative support for aquaculture operations was provided through site visits, compliance inspections, and workshops. More than 2,000 site inspections were conducted to assist aqua-farmer and to ensure compliance with best management practices. Water quality studies continued in order to evaluate the effectiveness of best management practices. Research was also conducted to quantify the impacts of clam culture in the Alligator Harbor Aquaculture Use Area and on adjacent aquatic communities. The research objectives were:

- ♦ Developing baseline ecological data
- ♦ Sampling fish communities
- ♦ Analyzing benthic core samples
- ♦ Collecting physical and water quality data
- ♦ Determining the quality and condition of seagrass habitat

These data provide baseline information to evaluate changes that may occur as clam production increases in the aquaculture use area. Three projects related to the aquaculture production of sturgeon were completed. Results of this research are expected to provide the regulatory and technological basis for commercial production of non-native sturgeon in Florida.

L LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF FISHERIES
Dwight Landreneau, Secretary

The mission of the Louisiana Department of Wildlife and Fisheries (LDWF) Office of Fisheries is to conserve and protect Louisiana's renewable aquatic resources for present and future generations of Louisiana citizens by controlling harvest and replenishing and enhancing stocks and habitat. This mission is accomplished through activities of the Marine Fisheries Division programs, which include shellfish (fish and crabs), mollusc (oyster), finfish, habitat, and research. Clients served by these programs include present and future generations of Louisiana citizens, as well as national and international interests that derive benefits from Louisiana's fisheries resources. The LDWF sets seasons and size and possession limits, restricts fishing gear use, or uses other means to protect key resources. Other conservation/protection methods are 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 LDWF also conducts research to provide insight into the proper functioning of natural systems and educates the public to promote wise use of resources.

SHELLFISH

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

Shrimp

Federal Shrimp Fisheries Disaster Assistance Grant. NOAA Award NA03NMF4520310 provided \$8,688,866 to the LDWF. This award funded project activities including:

- ♦ a 2% distribution to commercial shrimp fishermen who demonstrated a record of compliance with turtle excluder and bycatch reduction devices,
- ♦ 10% to commercial shrimp fishermen as incentive to ensure widespread and proper use of turtle excluder and bycatch reduction devices,
- ♦ 70% for direct personal assistance to commercial shrimp fishermen, and

- ♦ 13% to promote and market wild caught Louisiana shrimp with the initiation of a quality certification and marketing program.

No more than 5% of these funds will be used for administrative expenses. If another Gulf State provides financial assistance to their residents and equally treated Louisiana residents and their residents, Louisiana's plan allows the nonresident shrimpers to qualify for assistance similarly to Louisiana residents.

Qualifying criteria used for the distribution of economic assistance to commercial shrimp fishermen were determined through the examination of 2001 and 2002 trip ticket records. Under the plan, trip tickets submitted after February 28, 2003, were not considered for qualification. A summary of the specific qualifying criteria used under each component follows.

- ♦ Economic assistance to commercial shrimp fishermen who demonstrated a record of compliance with turtle excluder and bycatch reduction devices. Commercial shrimp fishermen who reported sales of trawl-caught shrimp on LDWF trip tickets in 2002 and were not found in violation of a turtle excluder device (TED) or bycatch reduction device (BRD) regulation shared equally in the 2% of funds allocated.
- ♦ Economic assistance to commercial shrimp fishermen as incentives to ensure widespread and proper use of TEDs and BRDs in the fishery. Commercial shrimp fishermen who reported sales of trawl-caught shrimp on LDWF trip tickets in 2002 shared equally in the 10% of funds allocated.
- ♦ Direct economic assistance to commercial shrimpers. Commercial shrimp fishermen who reported sales of shrimp on LDWF trip tickets in 2002 shared equally in the 5% of funds allocated. Commercial shrimp fishermen who reported sales of over 2,000 pounds of shrimp on LDWF trip tickets in either 2001 or 2002 shared equally in the 40% of funds allocated. Commercial shrimp fishermen who reported sales of over 20,000 pounds of shrimp on LDWF trip tickets in either 2001 or 2002 shared equally in the 25% of funds allocated.

Commercial shrimp fishermen were notified by mail of their status of qualification for economic assistance under this program. These notices also contained a page entitled "Qualifications for Commercial Shrimper's Economic Assistance Payments" which listed the components of the program each individual qualified for, based on LDWF trip ticket records. Shrimp fishermen were asked to carefully review the document and complete the "Certification Form" and "Form W-9" in order to receive any economic assistance for which they qualified.

The promotion and marketing of wild caught Louisiana shrimp was conducted through the Louisiana Seafood Promotion and Marketing Board. Promotion and marketing efforts utilized billboard, radio, seafood directory, seafood trade magazine, newspaper and television advertisements as well as sponsorship of promotional events featuring shrimp and a direct mailing campaign targeting seafood businesses.

Management Actions. In recognition of differences in shrimp recruitment, emigration, and growth patterns among Louisiana coastal areas, the LDWF managed the shrimp fishery in inside waters utilizing the concept of shrimp management zones. The zoning concept was implemented in 1975 and provided the flexibility needed to create staggered opening and closing dates, season extensions, special seasons, and special gear seasons between shrimp management zones. Louisiana's three shrimp management zones consists of:

- ♦ 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.

Recommendations for the opening dates of the spring shrimp season in inside waters were determined by projecting when 50% of the inshore population of brown shrimp sampled within each zone are 100 shrimp per pound or larger. Closure of the spring shrimp season in inside waters was 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 were based upon the number and size of over-wintering white shrimp sampled in outside waters.

Offshore Shrimp Season. State outside territorial waters south of the inside/outside shrimp line from the eastern shore of Freshwater Bayou to the USCG navigational light off the northwest shore of Caillou Boca at latitude 29°03'10"N and longitude 90°50'27"W were closed to shrimping on February 10, 2003, to protect significant numbers of over-wintering white shrimp smaller than legal possession size limit. A portion of these outside 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 as delineated by the River Channel buoy line were reopened to shrimping on March 28, 2003. The remaining portion of these closed waters reopened to shrimping on May 13, 2003, in conjunction with the opening of the spring season in inside waters in Shrimp Management Zone 2.

Inshore Shrimp Seasons. The open water of Breton and Chandeleur sounds in Shrimp Management Zone 1 closed March 31, 2003, and later reopened May 13, 2003. The inside waters of Zone 2 opened May 13, 2003, followed by the opening of the remainder of Zone 1 on May 26, 2003. Zone 3 opened May 26, 2003, except for a portion of inside waters within Timbalier and Terrebonne bays from a point along the inside/outside shrimp line east of East Timbalier Island at longitude 90°15'W, thence due north to latitude 29°10'N to the intersection of the Houma Navigational Channel, thence south along the eastern edge of the Houma Navigational Channel as delineated by the USCG Channel red buoy line to a point originating along the inside/outside shrimp line in Cat Island Pass, which was extended to June 28, 2003. The spring shrimp season in the inside waters of Zone 1 and 3 closed July 7, 2003, except for the portion of Mississippi Sound originating at a point along the Mississippi-Louisiana territorial sea boundary at longitude 89°30'00"W, then due south to latitude 30°05'00"N and longitude 89°30'00"W, thence southeasterly to the USCG navigational light off the eastern shore of Three-Mile Pass at latitude 30°03'12"N and longitude 89°21'30"W, thence northeasterly to a position which intersects the menhaden line as described in the Menhaden Rule (LAC 76:VII, 307D) north of Isle au Pitre at latitude 30°10'00"W which was extended to July 25, 2003. The open waters of Breton and Chandeleur sounds, as described in the Menhaden Rule, remained open to shrimping.

The 2003 fall shrimp season in inside waters in Zones 2 and 3 opened August 11, 2003, and Zone 1 opened August 18, 2003. Zones 2 and 3 closed December 16, 2003, and Zone 1 closed December 31,

2003, except Breton and Chandeleur sounds which remained opened to shrimping until March 31, 2004.

Landings and Value. According to LDWF trip ticket report data, 2003 commercial shrimp landings totaled 126,249,581 pounds (all species combined/heads on weight) and were valued at \$136,431,330. Landings increased approximately 11.6 million pounds from the previous year. Brown shrimp landings exceeded the long-term mean (1976-2003) by 5 million pounds while white shrimp landings exceeded the long-term mean by 11.5 million pounds. White shrimp landings in 2003 were the third highest total on record.

Crabs

In 2003, Louisiana blue crab landings totaled 47.97 million pounds, a decrease of 6.03 million pounds from 2002. The dockside value of 2003 landings was \$33,545,317. In 2003, stone crab landings were 12,274 pounds, compared to 8,125 pounds and 26,511 pounds the previous two years. Stone crab landings were valued at \$43,106 in 2003. The derelict crab trap removal program was a major activity within the LDWF. Two trap sweeps to remove derelict crab traps were planned. A shallow water winter cleanup was scheduled from February 28 to March 14, 2004, in the upper Terrebonne Bay estuary. A deep-water spring closure was scheduled from May 14 to May 22, 2004, in Western Vermilion Bay. The winter closure would be dependent upon a broad-based group of volunteers to actively target derelict traps in shallow water whereas the spring closure would depend upon shrimp fishermen who inadvertently pick up traps in their shrimp gear. The Crab Trap Task Force continued to meet and address issues confronting the industry. The task force actively participated in development of the trap removal program. The task force supported legislation on a commercial crab trap gear license moratorium and subsequent limited entry for the commercial blue crab fishery.

MOLLUSC PROGRAM

Oyster Seasons

Oyster areas in Louisiana are divided into public seed grounds (know as seed grounds, seed reservations, and tonging areas) and privately-leased water bottoms. The department managed public oyster seed grounds to provide seed oysters for transplant to leases. When a healthy supply of marketable oysters existed on seed grounds, seasonal harvest was allowed. Public grounds were sampled on a monthly basis, and a stock assessment was performed in July to prepare for the upcoming season. Most seed grounds open each year, although some public areas

open every other year depending on the health of the oyster population.

The 2003/2004 Louisiana oyster season began with the opening of the Bay Gardene Public Oyster Seed Reservation and the Little Lake Designated Temporary Natural Reef on September 3, 2003. The Little Lake area was a temporary public ground designated by the Louisiana Wildlife and Fisheries Commission for the 2003/2004 season in order to allow harvest of oyster resources located in the outfall area of the proposed Davis Pond freshwater diversion. The public oyster seed grounds east of the Mississippi River and the Hackberry Bay Public Oyster Seed Reservation opened one week later on September 10, 2003. All areas closed April 1, 2004. The Bay Junop Public Oyster Seed Reservation opened for one-week on September 10, 2003 and closed September 16, 2003. No harvest was documented during the short opening, and an addition five-day season opened October 27, 2003 and closed October 31, 2003. During both openings, harvest was restricted to the northern portion of the bay. The Sister Lake Public Oyster Seed Reservation opened for harvest on September 10, 2003 and was scheduled to close November 18, 2003. However, heavy harvest from the lake was documented, and excessive amounts of shell material were observed in some seed oyster loads. The lake closed by emergency action on October 10, 2003. The Calcasieu Lake public tonging area opened October 15, 2003 and closed April 30, 2004. Calcasieu Lake opened and closed within the season framework by DHH based on the level of the Calcasieu River. During the 2003/2004 season (199 total days) Calcasieu Lake was open for harvest 86% of the time. Oyster production on the public seed grounds during the 2003/2004 season were estimated at over 579,000 sacks of market oysters and nearly 372,000 barrels of seed oysters. The public grounds east of the Mississippi River and south of the Mississippi River Gulf Outlet accounted for roughly 50% of the total sack production from public grounds in Louisiana. Although Sister Lake accounted for less than 0.5% of the total public ground acreage, it contributed nearly 20% of the total 2003/2004 public ground season harvest while open for only one month. Overall, harvest for market oysters (3") was well below the previous season as an estimated 579,054 sacks were harvested during the 2003/2004 season as compared to roughly 958,000 sacks harvested in the 2002/2003 season. Landings for 2003 (a combination of landings from portions of the 2002/2003 season and the 2003/2004 season) on public oyster grounds totaled nearly 5.5 million pounds of meat.

Oyster Leasing

The Louisiana Wildlife and Fisheries Commission declared a moratorium on the issuance of new leased acreage on March 7, 2003; this moratorium remains in effect. The request for a lease moratorium was made by the Louisiana Department of Natural Resources to limit the state's liability for oyster damages as a result of coastal restoration efforts. No leases were auctioned during the year. Leased acreage totaled nearly 400,000 acres spread over 8,348 active leases owned by approximately 1,400 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 LDWF continued to work toward the completion of the Louisiana Oyster Shell Recovery Pilot Program (NOAA Award NA96FK0188). 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; 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 investigated. Heavy oyster mortalities were sustained in the wake of Hurricane Lili and Tropical Storm Isidore in fall 2002. The LDWF secured federal disaster funds to rehabilitate selected public grounds where mortality was most severe. The LDWF will use a \$2,000,000 project awarded by NOAA NA03NMF4520316 entitled "The Louisiana Oyster Rehabilitation and Promotion Project," to build new reefs and implement marketing campaigns for Louisiana oysters.

FINFISH PROGRAM

The primary objective of this program was to develop and maintain a database of scientific information for use in making rational recommendations for the management of coastal finfish stocks. The recreational marine finfish harvest for 2003 was 13,523,445 fish weighing 27,969,370 pounds; which, for the 22-year period examined (1981-2003), ranked 2003 ninth by number of fish and third by total weight. Total commercial landings during 2003 were

973,928,353 pounds or 20,214,823 pounds excluding menhaden.

Monitoring

In 1985, a comprehensive monitoring program was developed to protect or enhance 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 were used coast wide to sample various year classes of estuarine dependent fish. A bag seine was 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 was used to sample juvenile, sub-adult, and adult fish and provided information on relative abundance, year class strength, movement, and gonadal development. 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 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 was 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:

- ♦ inner wall-1⅝" bar, 3⅝" stretched, number six twine
- ♦ outer wall -6" bar, 12" stretched, number nine twine

Gill net samples were taken semi-monthly from April to September and monthly from October to March, trammel net samples were taken monthly from October to March, and seine samples were taken monthly from January to August and semi-monthly from September to December. Hydrological readings (conductivity, salinity, and water temperature) were in conjunction with biological sampling. Samples were taken at specific locations arranged in such a manner to cover the beach, mid-marsh, and upper marsh areas of all major bay systems throughout coastal Louisiana. The catch and hydrological information was summarized for each coastal area on

a monthly basis to give resource managers the current conditions of the resource. Pertinent life history information for important species was used to develop analytical and predictive models.

Finfish Stock Assessments

Division personnel updated stock assessments for black drum, mullet, southern flounder, and sheepshead in 2003. 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.

Black Drum. Results of YPR analysis indicated 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 above F_{MAX} with yield of 92% 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 SPR being 57% to 66%, respectively.

Southern Flounder. Results of YPR analysis indicated that for the years assessed (1994-2002) if $M=0.5$ (the most conservative value within the range of estimates), the fishery before existing regulations was operating between $F_{0.1}$ and F_{MAX} with yields of 93% to 95% of maximum and SPR at 27% to 29%. An M of 0.8 (the highest value within the range examined) would produce yields of 57% to 60% of maximum with SPR at 50% to 54%, respectively.

Striped Mullet. Results of YPR analysis indicated that if $M=0.3$ (the most conservative value within the range of estimates), the fishery before existing regulations was operating above $F_{0.1}$ and F_{MAX} with yield of 96% to 99% of maximum and SPR at 31% to 38%. An M of 0.6 would indicate a more lightly fished stock with yield being 67% to 88% of maximum and SPR at 62% to 74%, respectively.

Sheepshead. Results of YPR analysis indicated that if $M=0.2$ (the most conservative value within the range of estimates), the fishery in the years assessed (1997-2002) was operating well below $F_{0.1}$ and F_{MAX} with yield of 34% to 74% of maximum and SPR at 53% to 81%. An M of 0.3 (the highest value examined) would indicate a more lightly fished stock with yield being 0% to 40% of maximum and SPR being 71% to 100%.

Sport Fish Restoration

In 2003, 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 Research Program),
- 3) continuation of the new Marine Fisheries Research Laboratory planning and design phase,
- 4) continuation of the project evaluating sports fish use of created wetlands in the Atchafalaya Delta (contracted to LSU Coastal Fisheries Institute, and
- 5) continuation of the project identifying essential fish habitats in Barataria Bay (a joint project 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 important habitat for many of Louisiana's coastal fishes. Federal law and international treaty require removal of platforms one year after production ceases. Since the program's inception, 34 petroleum companies participated in the program; in addition to material, these companies contributed to Louisiana's Artificial Reef Trust Fund for operation, maintenance, and research. Since January 2003, 21 projects across the coast were completed. To date, 132 platforms were converted into artificial reefs. Hurricane Lili (October 2002) offered the program unique opportunities when five platforms toppled or were damaged beyond repair. The platforms offered critical habitat for scamp and gag grouper and were allowed to remain on location as artificial reefs (once meeting the USCG clearance requirements and confirmed free-and-clear of all hydrocarbons and hazardous material). In cooperation with the Lake Pontchartrain Basin Foundation, the LDWF created four experimental reefs utilizing reef balls in 2003. Reef balls were created to explore the feasibility of using this material in an estuarine situation.

Southeast Area Monitoring and Assessment Program (SEAMAP)

This state/federal/university program collects, manages, and disseminates fishery-independent data and information in the southeastern U.S. Louisiana participated in planning and resource surveys during the 20 years of this NMFS funded cooperative project. Planning activities included identifying priorities for data acquisition and coordinating Gulf-wide resources by SEAMAP participants. The LDWF 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 provided 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 LDWF's Oil Spill Task Force focused on Natural Resource Damage Assessment (NRDA) activities and developing restoration plans during 2003. Along with other state and federal trustees, the LDWF continued to develop a pilot plan for regional restoration planning program for Louisiana that will provide a means to efficiently restore habitat and other natural resources damaged because of small spills.

Pre-assessment data collection for NRDA began for two spills that occurred in 2003. These were:

- ♦ December/January 2003, a Shell/Texaco pipeline blowout in Terrebonne Bay south of Cocodrie
- ♦ March 2003, an Exxon/Mobile oil spill in Lake Washington out from Port Sulphur

NRDA activities for oil spills continued during 2003 including:

- ♦ State and federal natural resource trustees began damage estimates for the April 2002 BP/Amoco pipeline spill in Little Lake in Barataria Basin near Galliano
- ♦ Cooperative damage assessment for the May 2002 Forrest Oil pipeline spill in East Lake Palourde Field near Franklin
- ♦ Site visit to the August 2002 Forrest Oil spill and fire resulting from a lightning strike on a tank battery in Magnolia Field near Pointe a la Hache. No permanent damage was caused, and the case was closed.
- ♦ Cooperative damage assessment for the September 2002 Ocean Energy well blowout at North Pass of the Mississippi River near Delta National Wildlife Refuge and Pass-a-Loutre State Wildlife Management Area.
- ♦ Site visits for damage assessment determinations of the December 2002 Hilcorp pipeline spill at Duck Lake in the Atchafalaya Basin.
- ♦ 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 was accomplished for the November 2000 T/V WESTCHESTER tanker spill in the Mississippi River. Focus of restoration was the area on and around Pass-a-Loutre State Wildlife

Management Area where a delta splay project was constructed to compensate for marsh and other habitat damage. Improvements were made to campground facilities. Monitoring continued.

- ♦ A marsh creation project near the site of a September 1998 Equinox well blowout in Lake Grand Ecaille, Plaquemines Parish, was 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 was an excused performance because of substantial damage to the island during Tropical Storm Isidore and Hurricane Lili in 2002. The project was fertilized in spring 2003; trustees are awaiting the final monitoring report.
- ♦ Restoration planning activities for the June 1997 Apache Corporation pipeline spill in coastal Vermilion Parish continued in 2002.
- ♦ The LDWF continued work with other state and federal trustees to determine the extent of natural resource damages resulting from the spill and develop suitable restoration alternatives for a Sonat well blowout in August 1997.

The LDWF participated in an interagency project initiated by the Louisiana Oil Spill Coordinator's Office to develop regional plans to restore nature damaged from oil spills. The first plan developed was for Region 2 and was almost complete. The LDWF continued to participate with other state and federal entities in planned restoration of sites contaminated by hazardous material. Two planning activities are underway: Bayou Trepagnier in St. Charles Parish and Calcasieu River in Calcasieu Parish. The LDWF responded to approximately 3,000 oil spill notifications received on a daily basis from state police. Notifications cover a range of hazardous emissions and chemical spills, as well as oil spill related incidents.

Statewide Hydrographic Monitoring

Through an interagency agreement with the U.S. Geological Survey (USGS), the LDWF continued to collect records of salinity, water temperature, tide level, wind speed and direction, barometric pressure from one coastal Louisiana station. Data were collected in near real-time, and the 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 tide in Louisiana coastal waters. Data also 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 at:

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

or

<http://www1dlabrg.er.usgs.gov/hydrowatch.htm>

These data are posted in raw, unedited form within four hours of the time the instrument measurement was recorded in the field. The data are updated to provide the most accurate information possible. The 2003 data were examined against long-term data sets to determine variations in environmental conditions. Data indicated air and water temperatures were normal; salinity was also normal. Rainfall was slightly below normal, and water elevation was below normal for the period.

National Coastal Assessment

The LDWF participated in the EPA's National Coastal Assessment Program (formerly known as Coastal 2000). During the fourth 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 a comparative assessment of the health of the Gulf of Mexico waters. During 2003, results from earlier years of sampling began to return with generally good dissolved oxygen readings and levels of sediment toxicity that were not significantly different from controls. These levels showed improvement of conditions compared to results of samples collected during a similar assessment performed in the early 1990s.

Monitoring the Impact of Environmental Perturbations on Commercial Fishermen

The objective of 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 fishermen and charter boats. The project provided a basis, over the long term, for an objective determination of the effects of such events on commercial fishing and allowed integration of these events into the management regime for those fisheries. The project was funded by NOAA and was completed in 2002; the final report included two parts: Biological Effects and Economic Effects.

Components of the project were logbooks and environmental monitoring. Commercial harvesters and charter boats used logbooks to identify vessel movement, fishing location, and catch. Logbook information was compiled into a data set during 2002, and analyses by economists and biologists continued to determine patterns and trends between environmental/climatological conditions and fishing patterns. The environmental monitoring segment gathered data regarding major climatological and/or environmental disturbances that affect the coast and emphasized the hypoxic zone that develops each summer offshore from Jefferson, Lafourche, and Terrebonne parishes. The LDWF continued to participate in various national and state task force meetings on the subject of hypoxia in the Gulf of Mexico. Recent hypoxia samples can be viewed at: <http://www.wlf.state.la.us/apps/netgear/index.asp?cn=lawlf&pid=900>.

Gulf-Wide Information System

The LDWF developed a geographic information system (GIS) database of environmental sensitivity for the Louisiana Gulf Coast. Participants in this Minerals Management Service-funded project also included LSU's 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. Data were made available to the public through OSRADP and the Louisiana Geographic Information Council in early 2003 at:

<http://atlas.lsu.edu>

Seismic Monitoring

The Seismic Section was created in 1939 specifically to protect oysters, fish, shrimp, wildlife, and associated habitat from injury due to seismic exploration. During 2003, the LDWF monitored 15 projects.

Caernarvon Biological Monitoring

Since 1991, the U.S. Army Corps of Engineers and the LDNR 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. The LDWF conducted extensive monitoring in the Breton Sound Estuary and continued biological monitoring to accurately measure effects of the project on fish

and shellfish populations. Biological monitoring occurred in three phases:

- 1) preconstruction (four years), which determined the conditions in the basin before the project went online,
- 2) post construction (four years), an intensive study of the biological effects of the diversion, and
- 3) long term (46 years), to monitor the extended project effects.

Oyster, shrimp, crab, and finfish samples were collected at stations situated from the diversion outfall to the Gulf. The eighth year of the long-term phase of the monitoring program (post construction) was in 2003. Studies gathered both fishery dependent and fishery independent data.

Davis Pond Biological Monitoring

In 1998, the LDWF began a three-phase sampling program, which will span more than 50 years to monitor effects of the Davis Pond Freshwater Diversion Structure. The LDNR led the overall monitoring effort in coordination with the U.S. Army Corps of Engineers.

In January 1997, work began on Davis Pond in St. Charles Parish. The structure, capable of delivering up to 10,650 cubic feet per second 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 cubic feet per second.

The Davis Pond project was designed to compensate for the loss of freshwater, nutrients, and sediment by providing a controlled flow of freshwater from the Mississippi River into a target area in the Barataria estuary to benefit thousands of acres of marshland. To determine how fish and shellfish populations changes, thousands of oyster, shrimp, crab, and finfish samples will be taken at stations located from the diversion outfall to the Gulf. Commercial fishery harvest will also be monitored. In addition, water quality readings at 38 locations within the basin are taken each month to provide a complete picture of how salinity and flow patterns change. An extensive study of recreational fishing in the project area began in July 1999. The creel study covered 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 were monitored using point-access surveys and aerial counting/mapping surveys.

Coastal Wetlands

The LDWF, in cooperation with other state and federal agencies, continued to plan and implement

projects throughout the coast that impact marine habitat and dependent species.

RESEARCH PROGRAM

Lyle S. St. Amant Marine Laboratory

The primary mission of the laboratory is to conduct research needed to manage the state's marine fisheries and is the only facility on the Louisiana coast devoted to marine fisheries. Since 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 LDWF's Education Section of Fur and Refuge conducted a teacher workshop, "Wetshop," at the laboratory during the summer. In conjunction with LSU Sea Grant and Agricultural Extension, the laboratory conducted the award-winning "Marsh Maneuvers for 4 H Students." Monitoring continued on the Grand Isle Sulphur Mine Reef for the Louisiana Artificial Reef Program.

Age, Growth, and Fecundity

To increase accuracy of stock assessments, the laboratory undertook a long-term project to obtain age, growth, and fecundity data for important finfish species. Otoliths were collected through fishery independent sampling and sampling from the commercial and recreational fisheries; otoliths were sectioned and annular rings, which are indicators of age, were counted. In 2003, otoliths were collected from black drum (516 collected, 516 aged); striped mullet (760 collected, 144 aged); sheepshead (491 collected, 120 aged); gray snapper (80 collected, 80 aged); spotted seatrout (1,187 collected, 1,187 aged); and redfish (1,005 collected, 1,005 aged). Gonads were collected and examined to obtain data for fecundity indices. Gonads from 81 gray snapper were collected and analyzed at the LSU Coastal Fisheries Age and Growth Laboratory.

DEQ Mercury Sampling

In May 2002, the Louisiana Department of Environmental Quality (LDEQ) requested the LDWF conduct mercury marine fish sampling from the Gulf of Mexico. Significant commercial and recreational harvest of marine fishes occurs in Louisiana. Data are necessary to assess potential impacts that mercury levels in marine fishes may have on the health of citizens of Louisiana and the U.S. A total of 63 samples were provided from each of the three coastal areas on dolphin (fish); tuna (yellow, blue, or blackfin); greater amberjack; red snapper; cobia; grouper (any species); and king mackerel. Coastal areas 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

The LDWF Marine Fisheries Division continued to support university research by providing access to the Lyle St. Amant Marine Laboratory, other field research stations, boats, and personnel. Research projects supported were:

Oyster Reefs and Restoration. LSU 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. Personnel assisted with the project and provided boats and access to the Sister Lake research station. 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 without reefs.

Black Drum Study. LSU Department of Biological Science. The LSU black drum group was active at Grand Terre since fall 1999. The first set of experiments emphasized whether scent cues (scent of dead conspecifics) would deter black drum predation on oyster reefs. In 2003, research emphasis switched to looking at sound cues as deterrents.

Essential Fish Habitat. LSU Coastal Fisheries Institute. Identifying Essential Fish Habitats in Barataria Bay and Quantifying Their Value to Import Sport Fish Species. Objectives of the study were 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 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.

MARINE FISHERIES MANAGEMENT

Objectives

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

- ♦ Design and initiate projects to collect and analyze data required for population dynamics estimates and other fisheries management projects;
- ♦ Develop scientifically-based management recommendations;
- ♦ Monitor the condition of fish stocks and the fisheries that depend upon them;
- ♦ Provide information transfer and liaison activities with regional fisheries management entities and others;
- ♦ Provide technical support to the Mississippi Commission of Marine Resources (MCMR) in developing fishery management plans, amendments, stock assessments, and technical analysis;
- ♦ Provide a state representative to serve on fisheries related boards, committees, panels, etc. as required; and
- ♦ Provide administrative services, general maintenance, locate funding sources, and other fisheries management support services as required.

Status

During 2003, public notice was given to open and close commercial seasons for shrimp, oyster, blue crab, king mackerel, red snapper, red drum, and large coastal sharks. Regional management activities included membership on the GSMFC's TCC Artificial Reef Subcommittee, the TCC Blue Crab Subcommittee, the TCC Data Management Subcommittee, Sheepshead Technical Task Force, Commercial/Recreational Fisheries Advisory Panel, Technical Coordinating Committee, and State/Federal Fisheries Management Committee. Grant documents and proposals were prepared to secure funding for fisheries management projects under the Sports Fish Restoration Act, the Cooperative Fishery Statistics Program, the Interjurisdictional Fisheries Act, and liaison with Gulf of Mexico Fishery Management Council.

MARINE COMMERCIAL FISHERIES STATISTICS

Objectives

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

Status

Fisheries landing data were collected weekly and monthly according to schedule. The data were processed, edited, and submitted to the NMFS in accordance with established data handling procedures. 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 fish was collected from major landing sites on a monthly basis. The information was submitted to the NMFS for inclusion in its trip information system. Both state and federal fisheries managers utilized these data to properly manage valuable resources. Biological data were collected for selected, commercially important finfish species from major seafood dealers along the Mississippi Gulf Coast. Some information will be utilized in the development of both state and regional fishery management plans. The trip ticket system was improved for oyster and live bait fisheries. Data are being scanned into a database and transferred to the GSMFC.

Objectives

Oysters, as sessile filter feeders, are more susceptible to influences of environmental conditions than mobile species. Accordingly, landings change dramatically from year to year. In addition to rainfall fluctuations, upland pollution can leave abundant supplies of oysters unsuitable for harvest. During the oyster season and throughout the year, field-sampling trips are made to oyster reef stations to collect water samples for fecal coliform analysis.

Reef areas are opened and closed based on the level of fecal coliform in the water column at the time of

sampling. Oyster reefs in certain areas close after significant rainfall or river stage events until water quality significantly improves. Multiple stations are sampled in each reef area, and clean samples must be obtained from each area before the area reopens for harvest. Throughout the year, water quality samples are obtained to properly classify shellfish growing areas.

The Shellfish Sanitation Program is one of the most labor-intensive efforts of the department, requiring almost daily, routine water quality sampling and laboratory analysis for fecal coliform bacteria. The data are used to classify oyster-growing waters in accordance with guidelines from the National Shellfish Sanitation Program (NSSP) and to provide justification to reopen oyster reefs following closures. For areas classified as “approved,” the geometric mean fecal coliform level most probable number (MPN) cannot exceed 14; no more than 10% of the samples taken can exceed 43 MPN. Additionally, the FDA specifies minimum sampling frequencies at each of nearly 170 sampling stations in the Mississippi Sound. Approved areas are those in which water quality does not degrade at any rainfall level. Areas classified as “conditionally approved” are subject to frequent openings and closures due to rain or river stage. Along with water quality monitoring, other work performed on the reefs included revitalization efforts such as reef turnover, oyster relaying, and planting cultch material.

SHELLFISH MANAGEMENT PROGRAM

Objectives

- ♦ Maintain program compliance with the Interstate Shellfish Sanitation Conference NSSP;
- ♦ Map Mississippi oyster reefs;
- ♦ Survey potential cultivation and cultch planting sites;
- ♦ Cultivate oyster reefs;
- ♦ Cultch management; and
- ♦ Assess reef areas.

Status

During the 2003-2004 season, 491,050 sacks of oysters were harvested. Oyster harvesting waters are divided geographically into eight major areas and open and close according to close monitoring. Potential cultivation and cultch planting sites were surveyed. A scannable oyster trip ticket continued to be improved, and oyster check stations were computerized. In 2003, about 200 acres of new oyster reef were created in the Western Mississippi Sound.

Major Accomplishments

- ♦ Planted 17,500 cubic yards of cultch material to enhance oyster reefs (funded by shell retention fees collected from oyster harvesters and processors as authorized by statute).
- ♦ Over 280 acres of oyster reef were cultivated with MDMR equipment and personnel.
- ♦ Continued collection of shell retention fees to generate funds for shell planting and reef revitalization.

Shrimp and Crab Management

Objectives

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

Key Responsibilities

- ♦ Long-term monitoring of shrimp populations in order to make management recommendations. Nearly 250 trawl samples were collected as part of the shrimp-monitoring program. Data collection included monitoring surface and bottom hydrological parameters at each station (salinity, temperature, and dissolved oxygen).
- ♦ Inspection of live bait shrimp operations and compilation of reports. The Live Bait Program included monthly compilation of Confidential Dealer Reports and licensing and inspecting live bait facilities. A trip ticket program was

developed to improve data collection for this fishery.

- ♦ Approximately \$1,000,000 in federal disaster relief funds were distributed to Mississippi shrimp fishermen.
- ♦ The Mississippi Crab Task Force was supported to allow various user groups to provide input and voice concerns.
- ♦ Development continued on constant recorder instruments along the coast for real-time hydrological monitoring.
- ♦ Real-time data from seven Mississippi Sound sites were available on the MDMR web site.
- ♦ The Shrimp and Crab Bureau continued to issue saltwater scientific collection permits. Ordinance 18.000 was developed and established guidelines and procedures to obtain various types of Special Permits. Recipients must submit an application and a report of their collection or harvesting activities to the MDMR. Forty-three special permits were issued.
- ♦ Coordination of Sport Fish Restoration grants continued.
- ♦ The Derelict Crab Trap Recycling Program included recording the numbers of traps and area collected as well as documented ghost fishing (capture of animals other than crabs). To date, over 5,000 traps were collected and recycled.
- ♦ A closed season was held in January 2003 to clean up derelict traps in Mississippi waters. The two-week cleanup included volunteer efforts from the public.

FINFISH MANAGEMENT

Staff worked closely with appropriate federal and state agencies, various user groups, and the public. They strived to promote, conserve, and regulate these fisheries based on the best available biological, social, and economic data. Saltwater scientific collection permits were issued in a manner to protect Mississippi's marine resources while allowing legitimate research and development. Constant recorder instruments were monitored and maintained to allow optimum data availability. Sport Fish Restoration grants were closely monitored to ensure pre-established goals of each project were achieved.

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 MDMR web administrator with acquired coordinates of reef material, reef

orientation, and maps and charts so that a portion of the web page can be created for the sports fishing community to access this information;

- ♦ Identify areas conducive for artificial reef development and enhancement both near shore and offshore within the framework of Mississippi's Artificial Reef Plan;
- ♦ Monitor artificial reef development in Mississippi's marine waters and adjacent federal waters; and
- ♦ Obtain artificial reef material from state, federal, and private entities through donations.

Status

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 (152 deployments), 64 steel hull vessels (including barges), one oil rig living quarters, two oil rig jackets, and 122 armored personnel carriers. Mississippi permitted 45 near shore artificial reef sites. These reefs were located inshore so fishermen can take advantage of the fish that inhabit these reefs. The materials of the near shore reefs consist of limestone, concrete rubble (when water depth allows), oyster shells, and fly ash. Near shore reefs were deployed at strategic times of the year when optimum oyster spat will settle for future growth of the reef. Two methods used to monitor and update coordinates and orientation of past artificial reef material deployments were side scan sonar (used primarily offshore) and sounding with a pole (primarily inshore). Thirteen of the 14 artificial reef sites located offshore 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 pole sounding. All coordinates obtained from side-scan sonar and soundings are listed on the MDMR web site and available to the 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.
- ♦ Examine the role of *Sargassum* as habitat for juvenile fish, including a general assessment of

the ecological relationship between juvenile fish and the *Sargassum* community; and

- ♦ 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 the survey. The data were processed, edited, and submitted to the GSMFC. The information provided a continuous standardized database of marine recreational catch, effort, and participation in the world. This data provided various fisheries councils the information necessary to make wise management decisions. Pressure estimates were submitted to the GSMFC according to schedule. These estimates, along with historical productivity, were used to estimate the number of assignments needed to achieve a given quota for each month. The MRFSS Program included a telephone survey of the charter boat fishery, and weekly telephone interviews were conducted. The number of telephone interviews was based on random selection of 10% of the charter boats in Mississippi. Data were entered and sent to the GSMFC weekly. The information was used to obtain precise effort estimates for the charter and head boat sectors.

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

Objectives

- ♦ To describe species diversity, determine temporal and spatial occurrence, and develop indices of relative abundance for juvenile fishes that occur in *Sargassum* and frontal zones;
- ♦ To 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 (estimated length, width, and depth) and maps sampled.

Status

In 2001, the MDMR received 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. A portion was provided to the Gulf Coast Research Laboratory for the study of juvenile fish in *Sargassum*. More than

25,000 larval and juvenile fish that utilized *Sargassum* and frontal zones were collected and identified in 57 families and at least 135 species. Larval billfishes, bluefin and yellowfin tuna, dolphin and amberjack are a few of the important fishery species found in samples. Work continued to clearly establish the role of *Sargassum* in providing essential fish habitat for these important fish species.

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

Objectives

- ♦ Continue angler-cooperative tag and release of spotted seatrout in Mississippi coastal waters specifically to obtain data on the seasonal movement patterns of fish of legal size (14" and larger).
- ♦ Continue 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.
- ♦ Initiate 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.
- ♦ 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 208 specimens with two (1.0%) recaptured. Similar trends of limited movement were observed in recaptured fish as in other years. Seasonal movement and growth of cobia were studied utilizing angler tagged and released cobia in the Gulf of Mexico. Tagging included 476 specimens with 29 (6.1%) recaptured. The longest time out for a tagged fish was 1,462 days; the greatest distance traveled was 980 nautical miles. Similar trends of movement were observed in recaptured fish as in other years. Seasonal movement and growth of tripletail were studied utilizing angler tagged and released tripletail in Mississippi coastal waters and adjacent Gulf of Mexico waters. Tagging included 139 specimens with 11 (7.9%) recaptured. The longest time out for a tagged fish was 112 days; the greatest distance traveled was 185 nautical miles. This is the third year of the tripletail project and the first year in which recaptured fish were reported. Future recaptures will supplement these initial data and allow for the analysis of migration trends.

SEAFOOD TECHNOLOGY PROGRAM MANAGEMENT

Objectives

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

Status

A total of 3,500 technical assistance actions were provided. Examples were:

- ♦ Technical advice and 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*” to the industry and public;

- ♦ Participated in the 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 Food Security Symposium held in Jackson, Mississippi;
- ♦ Hosting training courses on Basic HACCP and plant sanitation in April and co-sponsored training courses in September with the MSU CREC;
- ♦ Provided HACCP and sanitation assistance to the Louisiana Shellfish Control Authority;
- ♦ Assisted in Louisiana’s 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 with confidence in Mississippi-inspected seafood products; and to aid in marketing Mississippi seafood products;
- ♦ Conducted onsite 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 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 with confidence in Mississippi-inspected seafood products; and to aid in marketing Mississippi seafood products;

- ♦ Participated in the shellfish processing plant regulatory review and evaluation by the FDA; and
- ♦ Received FDA notification that the Mississippi Shellfish Sanitation Program met NSSP requirements.

- ♦ development of memorandum of understanding and coordination; and
- ♦ Participated at the deliberation of issues and resolutions on shellfish sanitation at the Gulf and South Atlantic States Conference.

Types and Number of Seafood Facilities Permitted

Shrimp – 26

Crab – 15

Oyster – 41

Total number of seafood sanitation/processing permits – 82.

These 82 permits represent 600 inspected seafood units.

Examples of seafood sanitation and health safety regulatory activities conducted by the Seafood Technology Bureau include: 2,200 seafood facility inspections and associated actions and 201 water sample collections of processing plant source water samples for testing. Conducted inspections and associated actions to determine compliance with the following sanitation and seafood health safety regulations:

- ♦ Molluscan shellfish sanitation inspections covered under the NSSP;
- ♦ Sanitation inspections on seafood species other than molluscan shellfish to aid the industry in meeting compliance conditions when the FDA conducted official inspections;
- ♦ Conducted quarterly inspections of all permitted facilities and conducted follow-up inspections as needed, completed re-certification inspections of certified dealers, and issued permits;
- ♦ Work with seafood processors to correct deficiencies to meet FDA seafood compliance criteria;
- ♦ Work on management criteria and forms for dealers converting selected critical limits and critical control points from under HACCP management to management under standard operating procedures;
- ♦ Prepared consolidated report of inspection results for the FDA according to NSSP requirements;
- ♦ Prepared and distributed letters to molluscan shellfish dealers regarding ISSC meeting actions and updated HACCP plans;
- ♦ Answered the Gulf Oyster Industry Council's *Vibrio vulnificus* survey;
- ♦ Prepared NSSP HACCP comments for the FDA on critical limits and correction action in the model ordinance; and
- ♦ Met with Mississippi Department of Health and Mississippi Department of Agriculture and Commerce on inspection coordination and

TEXAS PARKS AND WILDLIFE DEPARTMENT COASTAL FISHERIES DIVISION *Mike Ray, Division Director*

The Texas Parks and Wildlife Department (TPWD) Coastal Fisheries Division is responsible for making management recommendations regarding 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 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 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 FY2003 (September 1, 2002 through August 31, 2003) included participation in the development, review, and revision of GMFMC and GSMFC fishery management plans. The division participated in workshops and advisory meetings with both the Council, Commission, and other management authorities.

Resource and Harvest Monitoring

Monitoring the relative abundance of adult fish in Texas bay waters was accomplished using 600' gill nets with individual 150' sections of three, four, five, and six inch stretched mesh. Bag seines (60'½" mesh) and trawls (20'½" mesh) are used to determine abundance of juvenile and subadult finfish, shrimp, blue crabs, and associated organisms. Oyster dredges (19.5" wide) were used to collect oyster abundance data. Inshore waters (within 9 nm) were also sampled with trawls. Total sampling effort included 760 gill net sets; 2,160 bag seine tows; 2,637 bay and gulf trawls; and 1,106 oyster dredge tows.

Relative abundance of finfish and shellfish in Texas offshore waters is monitored through long-term monitoring programs and a cooperative agreement with the GSMFC. Texas participated in the SEAMAP, a cooperative program between the Gulf States and federal government for collection, management, and dissemination of fishery-independent data and information in the southeast U.S. Data obtained from this sampling effort was used in evaluating the "Texas Closure" management measure of the GMFMC Shrimp Management Plan and to provide information on shrimp and groundfish stocks in the northern Gulf from inshore waters to 50 fm. In fulfillment of SEAMAP requirements, the TPWD collected 160 shrimp trawl and eight long line samples in 2003.

Sport landings (private and guided boat) and associated angler activities were derived from on-site creel interviews of recreational anglers at the completion of their trips. Roving trailer and wet slip counts were used to assess relative pressure at sampling sites. Relative pressure was used to determine how often a site should be selected for a survey; higher use sites are surveyed more often than low use sites. A total of 1,212 survey days were

spent to estimate landings and pressure of private and party boat fishermen.

Routine collection, editing, summarization, and publication of self-reported commercial landings data continued through a formal cooperative statistics agreement with the NMFS. Landings were obtained from commercial seafood dealers through submission of Monthly Aquatic Products Reports. The TPWD collected commercial landings statistics on crab, oyster, and finfish, while the NMFS continued to gather landings statistics on shrimp.

Crab Trap Cleanup Program

Rules stemming from the last legislative session allowed the TPWD to close coastal waters to crab fishing from February 22 to March 2, 2003. Before this ruling, only the trap's owner or a TPWD game warden could legally remove a crab trap. During the closed season, volunteers, coastal fisheries staff, and game wardens picked up 3,858 abandoned crab traps. A total of 494 volunteers assisted and 152 vessels were used. The most traps were picked up in Galveston Bay where 159 volunteers recovered 1,558 traps. Many thousands of the wire mesh cages used to catch crabs are lost or abandoned each year. State game wardens pick up more than 2,500 traps annually, yet there are many more left in the water to foul shrimpers' nets, snag fishermen's lines and create an unsightly view of Texas shores. This cleanup program will continue each year during the closed season.

Research

The Perry R. Bass Marine Fisheries Research Station (Palacios) 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 life history and genetics of important recreational and commercial species and seagrasses. In the past year, genetic studies were conducted on Gulf menhaden, spotted seatrout, sheepshead, bonnethead and blacktip sharks, and shoalgrass. Collection and processing of genetic samples from these species continued. Otoliths were collected from red drum and spotted seatrout to estimate age structure of Texas populations and update age-length keys for these fish. Projects continued to identify spotted seatrout spawning areas and examine reproductive biology of Atlantic croaker. A cooperative project with the GSMFC continued to collect age and growth on commercial and recreational catches of Southern flounder, king mackerel, red snapper, greater amberjack, and Gulf

flounder. A routine fishery monitoring project using bag seines and gill nets continued in the Cedar Lakes area near the mouth of the San Bernard River.

Legislative and Regulatory Changes

The 78th Texas Legislature met in 2003. Two bills passed which affected coastal issues in Texas. Senate Bill 607 amended Chapter 78, Parks and Wildlife Code, by amending Section 78.155(a) to designate crab traps as abandoned beginning the first day of a closed season for crab fishing as established by the TPWC. This amendment abolishes the initial seven-day period at the beginning of the closed season when only game wardens could remove traps. The purpose of the bill is to simplify enforcement of the closed season.

Senate Bill 608 amended Chapter 47, Parks and Wildlife Code, by amending Section 47.001 to change the definition of a fish guide to include a person that accompanies, assists, or transports a persons fishing in public waters. Senate Bill 608 amended Section 47.004 and established a resident guide license and created rules to establish separate resident guide fishing licenses for use in saltwater and freshwater. Section 47.005 created a nonresident fishing guide license and created rules to establish separate nonresident fishing guide licenses for saltwater and freshwater. Section 47.006 set the fee for a resident, nonresident, freshwater, and saltwater guide's license. The bill clarified the definition of a fishing guide, gave the TPWD authority to create a separate license for a resident and nonresident fishing guide, and gave the TPWD authority to create separate fees for resident and nonresident guides fishing in saltwater and freshwater.

House Bills 2470 and 1858 required the TPWD to increase certain commercial fishing and business licenses by 10% and to deposit the proceeds to the newly-established Shrimp Marketing Account for use by the Texas Department of Agriculture in conducting and operating the new Texas Shrimp Marketing Assistance Program.

Several new rules regarding saltwater fishing were approved by the TPWC. The bag and size limit for spotted seatrout were amended to impose a 25" maximum length limit (except one fish greater than 25" may be retained per day). The change allowed better distribution of harvest of large spotted seatrout among more anglers over a greater period. Data indicated the proportion of fish greater than 25" declined while fishing pressure on seatrout increased;

the change will protect fish greater than 25" and increase overall spawning-stock populations.

An aggregate bag limit was established for guided fishing parties which is equal to the number of licensed anglers, less the fishing guide and deck hand, multiplied by the personal bag limit for each species. The change ensured equitable distribution of opportunity to all users of the resource. Data indicated guided fishing parties catch far more fish than unguided anglers.

License fees for fishing guides operating in freshwater were raised from \$75 to \$125; fees for fishing guides operating in saltwater were raised from \$75 to \$200. In addition, the TPWC adopted a provision that any person seeking a fishing license for use in coastal waters possesses a valid appropriate U.S. Coast Guard Operator's License. The rule is necessary to clarify that persons who guide in saltwater are required to show proof of possession of this operator's license in order to obtain a fishing guide license and are subject to the higher license fee.

Various recreational and fishing license fees as well as boat registration fees increased by approximately 20%. Certain commercial fishing and business license fees increased by 10% to comply with provisions of House Bills 2470 and 1858.

Modifications to oyster dredge gear restrictions were made to aid enforcement of the one-dredge rule by requiring that spare winch chains, cables or ropes, as well as lifting blocks are secured below deck while operating during the public open season.

Fish Stocking

Efforts continued to spawn and rear marine fish for stock enhancement at the CCA/CPL Marine Development Center (MDC) in Corpus Christi, Perry R. Bass Marine Fisheries Research Station (PRB) in Palacios, and Sea Center Texas (SCT) in Lake Jackson. Controlled photoperiod and temperature protocols were used to induce captive broodfish to spawn at the hatcheries. During peak spawning periods, personnel collected 1.5-2 million eggs per day. After hatching, larval fish were transferred to outdoor rearing ponds and grown to a target size of 30 mm TL. A total of 35.4 million red drum fingerlings and 4.0 million spotted seatrout fingerlings averaging 32.9 mm TL were stocked into marine water. Approximately 1.7 million red drum fingerlings were released into inland freshwater reservoirs. Cutting-edge research included automated routine respirometry and broodfish

genotyping to strengthen the scientific basis of the stock enhancement program. Technical information on fish hatchery development was provided to other coastal states in a cooperative effort to enhance coastal marine fisheries.

In addition to stock enhancement, each facility provided public outreach activities. Interpretive displays, touch tanks, and aquaria appeal to visitors. Sea Center Texas welcomed 68,189 visitors in 2003. The Marine Development Center toured 2,367 visitors, and the PRB satellite pond facility received 187 visitors. These facilities, touted as the world's largest red drum hatcheries, represent a unique merger of fisheries science and visitor education.

Artificial Reef Program

The Artificial Reef Program was responsible for maintaining 49 permitted reef sites and seven buoys (five permanent). The program received nine petroleum structures in the Outer Continental Shelf area of the Gulf of Mexico in 2003. Four structures were deployed in the Galveston area (GA-288 and GA-296); three structures were deployed in the Matagorda Island area (MI-A-7), and two were deployed in the High Island area (HI-A-330 and HI-A-349). Two structures were removed by explosives and towed to an appropriate site, seven were partially removed by mechanical cutting and reefed in place. The Texas Artificial Reef Fund received \$1,463,810 in donations. An exhibit and workshop at the Houston Sea Space Exposition in June 2003 promoted the understanding of artificial reefs and the identification of fish and invertebrates living on the reefs. Development of the nearshore reef strategic plan continued in 2003. To enhance the nearshore Basco's Reef in the High Island area (HI-117), 73, 5-12 ton quarry rocks were deployed. Property was purchased in Brazoria County near Freeport to serve as a staging area for nearshore reef material. Staging sites were leased in Port Mansfield, Rockport, and Sabine.

NATIONAL MARINE FISHERIES SERVICE, SOUTHEAST REGION
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE
Roy E. Crabtree, Regional Administrator

The mission of NOAA Fisheries is stewardship of the nation's living marine resources. Through conservation and wise use, these resources and their habitats can be managed effectively and efficiently to maximize the benefit to the nation without jeopardizing future options.

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

The NOAA Fisheries Southeast Regional Office (SERO) is located in St. Petersburg, Florida. The regional administrator represents the agency's assistant administrator with state conservation agencies, recreational interests, commercial industries, consumers, environmentalists, and the general public. Through a range of programs, the SERO planned, organized, and implemented fishery management and conservation including regulatory requirements, fishery management plans, and recreational and international fisheries. It provided administrative and technical support to regional fishery management councils including program planning and evaluation, budgeting, and administrative support. Support services were provided to other NOAA and NOAA Fisheries elements collocated with the SERO.

The NOAA Fisheries Southeast Fisheries Science Center (SEFSC) is located in Miami and has laboratories in Miami, Panama City, Beaufort, Pascagoula, Stennis Space Center, and Galveston. The SEFSC conducted multi-disciplinary research programs to provide management information to support national and regional programs and to respond to the needs of regional fishery management councils and other user groups. The SEFSC developed the scientific basis required for status of stocks and status of fisheries reports; environmental

assessment and environmental impact statements for management plans and/or international negotiations; and pursued research to answer specific needs in habitat conservation, aquaculture, fishery engineering, marine mammals, endangered species, fishery oceanography, food sciences, and fishery economics.

FISHERY RESOURCE CONSERVATION AND MANAGEMENT

Gulf Shrimp Fishery

Annual Texas Closure

The annual closure of the shrimp fishery in the western Gulf of Mexico was established to allow brown shrimp to reach larger (and more valuable) size before harvest which will prevent discard and waste of brown shrimp smaller than the preferred market size. Commercial shrimp fishing in federal waters off Texas closed May 15, 2003. The fishery reopened July 15, 2003.

Control Date for Gulf Shrimp Fishery

On April 23, 2003, NOAA Fisheries published an advance notice of proposed rulemaking to announce that the GMFMC was considering December 6, 2003, as a possible control date for the Gulf shrimp fishery. Use of a control date in future management meant that anyone entering the fishery after the control date would not be assured of future access to the fishery. The Council may choose to give variably weighted consideration to fishermen active in the fishery before and after the control date and may apply qualifying criteria for entry into the fishery. The Council may choose a different control date, a management regime that does not use a control date, or no action to control entry or access to the fishery in which case the control date may be rescinded.

Gulf Reef Fish Fisheries

Charter Boat Permit Moratorium Revision

On May 15, 2003, NOAA Fisheries published a final rule to implement an amendment to revise one of the eligibility criteria to obtain a charter vessel/head boat permit under the moratorium for the reef fish and coastal migratory pelagics fisheries in the Gulf exclusive economic zone (EEZ). The revision removed the requirement to have had a valid permit on the effective date of the final rule that

implemented Amendments 14 and 20 (July 29, 2002) and made the criterion less restrictive. The rule extended all applicable deadlines associated with permit application and the moratorium.

Greater Amberjack Rebuilding Plan

On July 3, 2003, NOAA Fisheries published a notice of agency action to announce approval of Secretarial Amendment 2 to the Reef Fish FMP to establish a ten-year stock-rebuilding plan for greater amberjack in the Gulf of Mexico. The plan outlined a three-year management goal and measures necessary to achieve the goals determined by stock status during each of the three-year intervals. Amendment 2 established biomass-based stock rebuilding targets and thresholds [i.e., MSY, OY, maximum fishing mortality threshold (MFMT)], and minimum stock size threshold (MSST) consistent with Magnuson-Stevens Act requirements.

Red Snapper

In 2003, NOAA Fisheries monitored two seasonal commercial quotas that total 4.65 million pounds and a recreational quota of 4.47 million pounds in the Gulf. On August 7, 2003, NOAA Fisheries published a notice closing the commercial red snapper spring fishery effective from August 7 to October 1. The fall commercial fishery that began October 1 closed December 7. The recreational fishery was managed through size and bag limits and a closed season (January 1-April 20 and November 1-December 31).

Vermilion Snapper

On November 5, 2003, NOAA Fisheries published notice that the vermilion snapper fishery in the Gulf was designated overfished and undergoing overfishing. Under the Magnuson-Stevens Act, that designation triggered the requirement that the GMFMC (within one year) propose a rebuilding plan and take action to end overfishing. The GMFMC immediately began to address those responsibilities.

Red Snapper Individual Quota (IFQ) Referendum

Under Section 407(c) of the Magnuson-Stevens Act, the GMFMC was authorized (if certain conditions are met) to prepare and submit a plan amendment and regulations to implement an IFQ program for the commercial red snapper fishery. The preparation of such a plan and implementing regulations must be approved in a referendum. If the referendum is approved by a majority vote, the GMFMC would be responsible for preparing the plan amendment and regulations through normal Council and rulemaking processes. The submission of the amendment and regulations to the Secretary of Commerce to review,

approve/disapprove, and implementation must be approved in a subsequent referendum. Both referendums must be conducted in accordance with §407(c)(2) of the Magnuson-Stevens Act. On December 30, 2003, NOAA Fisheries published a proposed rule to provide information on scheduling, procedures, and eligibility requirements to participate in the referendums to determine whether an IFQ program should be prepared and, if so, whether it would subsequently be submitted to the Secretary of Commerce for review. The proposed rule addressed who would be eligible to vote in the referendums, how votes were weighted, procedures to conduct the referendum, determination of the outcome (i.e., majority of cast votes), and subsequent procedures if the first referendum was approved. Ballots from the first referendum had to be received by NOAA Fisheries by February 27, 2004.

Coastal Migratory Pelagics Fisheries: King and Spanish Mackerel

Stock Status Determination Criteria

On October 14, 2003, NOAA Fisheries published a proposed rule (68 FR 59151) to establish biomass-based stock status determination criteria for king and Spanish mackerel (under the jurisdiction of the GMFMC) consistent with the requirements of the Magnuson-Stevens Act. These criteria include specifications of maximum sustainable yield (MSY), optimum yield (OY), MSST, and MFMT.

Quota Monitoring

- ♦ NOAA Fisheries monitored eight commercial quotas for king and Spanish mackerel. In addition to e-mail and fishery bulletins, NOAA Fisheries posted updated quota-monitoring reports on the regional web site <http://sero.nmfs.noaa.gov>. For commercial fisheries, vessel trip limits were adjusted, and fisheries were closed when projections indicated that the specified quota was reached. The following actions were taken in 2003:
- ♦ The trip limit for the commercial hook-and-line fishery for king mackerel in the Florida East Coast subzone was increased to 75 fish per day effective from February 1 to March 31.
- ♦ The commercial gill net fishery for king mackerel in the southern Florida West Coast subzone closed from February 4, 2003 until January 20, 2004.
- ♦ The trip limit for the commercial hook-and-line fishery for king mackerel in the southern Florida West Coast subzone was reduced to 500 lbs per day effective from March 5 to June 30.

- ♦ The commercial fishery for king mackerel in the western zone of the Gulf of Mexico was closed effective September 24, 2003 until June 30, 2004.
- ♦ The trip limit for the commercial hook-and-line fishery for king mackerel in the northern Florida West Coast subzone was reduced to 500 lbs per day effective October 30, 2003 until June 30, 2004.
- ♦ The commercial fishery for king mackerel in the northern Florida West Coast subzone was closed from November 13, 2003 until June 30, 2004.

Experimental Fishing Permit

Denial

On December 23, 2003, NOAA Fisheries announced the disapproval of a request for an exempted fishing permit (EFP) from Florida Offshore Aquaculture, Inc., in Madeira Beach, Florida. The EFP would have authorized a 24-month feasibility study for net cage culture of cobia, mahi-mahi, greater amberjack, Florida pompano, red snapper, and cubera snapper at a site approximately 33 statute miles west-southwest of Johns Pass, Florida. The denial was based on concerns expressed by the GMFMC, the FDEP, environmental organizations, and individuals, as well as numerous deficiencies in the application and associated documentation.

PROTECTED RESOURCES DIVISION

Biological Opinions

- ♦ Dredging of Gulf of Mexico Navigation Channels and Sand Mining areas using hopper dredges by COE Galveston, New Orleans, Mobile, and Jacksonville Districts.
- ♦ Continued operation of Atlantic shark fisheries (commercial shark bottom longline and drift gill net fisheries and recreational shark fisheries) under the Fishery Management Plan for Atlantic Tunas, Swordfish, and Sharks (HMS FMP) and the proposed rule for Draft Amendment 1 to the HMS FMP, July 2003.
- ♦ Mobile District COE regarding Naval Air Station Pensacola Channel, Florida: Impacts of Dredging and Spoil Deposition via Hopper Dredges.
- ♦ Jacksonville District COE regarding construction of a dock in Miami-Dade County, Florida.
- ♦ Jacksonville District COE regarding construction of an observation platform in Miami-Dade County, Florida.
- ♦ Jacksonville District COE for improvement of the Port of Miami in Miami-Dade County, Florida.

- ♦ Jacksonville District COE regarding construction of a residential development and its impact to seagrass and Johnson's seagrass in Vero Beach, Florida.
- ♦ Jacksonville District COE regarding maintenance dredging and creation of access channel in Martin County, Florida.
- ♦ Jacksonville District COE regarding the construction of a fishing pier in Duval County, Florida.
- ♦ Jacksonville District COE regarding the Indian River County Beach Nourishment Project in Indian River, Florida.
- ♦ Mobile District COE regarding maintenance dredging of the Navigation Channel between Santa Rosa Island and Perdido Key, Florida.
- ♦ Jacksonville District COE regarding dock and bulkhead construction in Honda, Culebra, Puerto Rico.

Other Activity

- ♦ Extended Letter(s) of Agreement for a period of one-year for participants of the Southeast U.S. Marine Mammal Stranding Network.
- ♦ Developed SER's contribution to the annual List of Fisheries under the Marine Mammal Protection Act.
- ♦ Published final rule to designate critical habitat for Gulf sturgeon.
- ♦ Provided funding to the University of Southern Mississippi for Gulf sturgeon research.
- ♦ Consulted on a Regulatory Amendment to suspend the Texas closure in accordance with the FMP for the Shrimp Fishery in the Gulf of Mexico.
- ♦ Completed a final rule to increase the size of TED openings.
- ♦ Completed proposed and final rules to allow the use of a large hoped hard TED in offshore waters.

HABITAT PROTECTION

The Habitat Conservation Division (HCD) used authorities from federal law and Executive Orders to manage and influence the outcome of activities that may affect essential fish habitat (EFH) and other fishery resources and, ultimately, the production of import commercial and recreational fisheries. 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 and marine

fisheries commissions), coordination between science and management, and outreach. The HCD continued its intensive involvement in activities promoting restoration, enhancement, creation, and preservation of coastal wetlands, riverine habitats, and nearshore areas utilized by important commercial and recreational fishery species.

The HCD accomplished its missions through personnel stationed in the SERO and eight field offices in key locations throughout the region where interaction with federal, state, and local officials; corporations, and private citizens occurred frequently. Consultation services were provided through field inspections, meetings, public hearings, and document review. Recommendations were provided to sequentially avoid, minimize, and offset adverse impacts to EFH and other fishery habitats. During 2003, the HCD:

- ♦ Reviewed 4,781 individual proposals to develop in wetlands.
- ♦ Reviewed 67 large federally-constructed or sponsored projects.
- ♦ Recommended measures to protect living marine resources on over 1,000 proposals, which included detailed conservation recommendations on 350 EFH consultations initiated by federal action agencies.
- ♦ Participated in activities associated with mitigation planning and habitat restoration unrelated to other habitat programs and activities detailed here. The majority was related to federal regulatory programs. Considerable effort was devoted to mitigation bank development, mitigation guideline development, and general mitigation planning.
- ♦ Engaged in activities related to the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA, also known as the Breaux Act). During 2003, NOAA Fisheries completed construction of the Pecan Island Terracing Project and participated in engineering and design efforts for three other major wetland restoration projects. NOAA Fisheries was directly responsible for restoration projects that benefit, restore, or protect more than 129,550 acres of Louisiana wetlands.
- ♦ Completed 154 reviews on National Environmental Policy Act actions.
- ♦ The HCD disbursed \$360,000 in Coral Reef Initiative Funds to support seven restoration and educational projects. Funds supported coral reef protection projects in the U.S. Virgin Islands and Puerto Rico and facilitated development of Local Action Strategies in the U.S. Caribbean and Florida.

- ♦ Aggressively engaged in outreach, 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; and
 - ♦ Responding to requests for information from private citizens, news media, and local, state, and federal agencies.

COOPERATIVE AGREEMENT AND GRANT PROGRAMS

In 2003, 119 grants and cooperative agreements totaling \$66,270,613 were awarded to states, universities, non-profit/profit institutions, and individuals. Three fishery management councils in the Southeast U.S. received a total of \$5,063,163 in 2003 to conduct fisheries management activities in accordance with the Magnuson-Stevens Fishery Conservation and Management Act. NMFS SERO awarded \$2,423,000 to the Institute for Marine Mammals Studies for the Center for Marine Education and Research. The center provided rescue and rehabilitation of marine mammals in the north-central Gulf of Mexico (Mississippi-Alabama-Louisiana). The research facility supported and accommodated research consistent with the Marine Mammal Protection Act. Other funded programs were:

- ♦ The Southeast Area Monitoring and Assessment Program (SEAMAP) - \$1,110,993
- ♦ The State-Federal Cooperative Fisheries Statistics Program - \$1,129,673
- ♦ The Anadromous Fisheries Program - \$112,751
- ♦ The Interjurisdictional Fisheries Program - \$1,007,588
- ♦ Atlantic Coastal Fisheries Cooperative Management Act Program - \$751,640
- ♦ Atlantic Coastal Cooperative Statistics Program - \$156,489
- ♦ The Marine Fisheries Initiative (MARFIN) Program – Twenty-four previous multi-year awards were funded totaling \$2,360,678
- ♦ The Saltonstall-Kennedy (S-K) Grant Program – The competitive program was not conducted in 2003 due to an insufficient funding allocation. The Gulf and South Atlantic Fisheries Development Foundation, Inc. received a Congressional Earmark for \$223,751 for

educational outreach to high-risk consumers of raw shellfish.

- ♦ The Cooperative Research Program - \$1,186,912
- ♦ Unallied Science Program - \$8,931,298
- ♦ Unallied Industry Projects - \$41,812,677

ECONOMICS PROGRAM

Review and authorship activities continued for fishery management plans and amendments including Coastal Migratory Pelagic framework action, Gulf For-hire Moratorium Interim Rule and Revised Amendment, Gulf Red Snapper Referendum, Gulf Reef Fish Amendment 21 (spawning reserves), Gulf Secretarial Amendment 1 (red grouper rebuilding), South Atlantic Dolphin Wahoo, South Atlantic *Sargassum*, South Atlantic Snapper-Grouper Amendment 13A (*occulina* closure), and Protected Resources Bottlenose Dolphin Take Reduction Plan. Participation continued 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 and the Socioeconomic Work Group. Other activities in 2003 included:

- ♦ Worked with three southeast fishery management councils to develop the economic and social portion of Operations Plans for products and services.
- ♦ Conducted an economic assessment of the Texas cooperative shrimp closure.
- ♦ Monitored a grant to the South Atlantic Fishery Management Council to conduct research on fishing communities.
- ♦ Implemented a contract to collect research on fishing communities in the Gulf of Mexico.
- ♦ Implemented a contract to collect cost and earnings data for the offshore commercial shrimp fishery in the Gulf of Mexico.

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

Wayne Swingle, Executive Director

The Gulf of Mexico Fishery Management Council (GMFMC) is one of eight regional fishery management councils that were established by the Fishery Conservation and Management Act in 1976 (now called the Magnuson-Stevens Act). The Council prepares fishery management plans designed to manage fishery resources from where state waters end out to the 200-mile limit of the Gulf of Mexico. These waters are referred to as the exclusive economic zone (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),
- ♦ 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), and
- ♦ four nonvoting members representing the U.S. Coast Guard, U.S. Fish and Wildlife Service, U.S. 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 is taken on any proposed rule change, public hearings are held throughout the Gulf, as well as at the Council meeting when final action is scheduled. Then proposed rule changes are submitted to the NMFS for further review and approval before implementation. When reviewing potential rule changes, the Council draws upon the services of knowledgeable people from other state and federal agencies, universities, and the public who serve on the following panels and committees:

- ♦ Advisory Panels are comprised of recreational and commercial fishermen, charter boat operators, buyers, sellers, and consumers who are knowledgeable about a particular fishery. Advisory Panels in 2003 included Billfish, Butterfish, Coastal Migratory Pelagics, Coral, Habitat Protection (three panels for Florida/Alabama, Mississippi/Louisiana, and Texas), Highly Migratory Species, Red Drum, Red Snapper, Reef Fish, Shrimp, Spiny Lobster, and Stone Crab.

- ♦ Scientific and Statistical Committees are comprised of economists, biologists, sociologists, and natural resource attorneys who are knowledgeable about the technical aspects of fisheries in the Gulf. Besides the standing committee, special SSCs included Butterfish, Coral, Mackerel, Special Oceanic Migratory Species, Red Drum, Reef Fish, Shark, Shrimp, Spiny Lobster, and Stone Crab.
- ♦ Stock Assessment Panels are comprised of 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. The SAPs included Ad Hoc Crustacean, Mackerel, Red Drum, Reef Fish, and Shrimp.
- ♦ The Socioeconomic Panel is comprised of economists and sociologists trained to evaluate the economic and social costs associated with various management measures and advise the Council of the economic and social costs associated with these measures.

The Council reviewed the membership of its advisory panels and scientific committees at its March meeting. The review process is conducted every two years to fill vacancies on the panels. In 2003, 29 new appointments were made to the various advisory panels, seven new appointments to the scientific and statistical committees, and six new appointments to the stock assessment panels.

The following illustrates the variety of activities conducted by the Gulf Council in 2003. Narrative was adapted from the Council's newsletter *Gulf Fishery News*, which is published six times per year.

In January 2003, the Council recommended to maintain the closure for 2003 of the EEZ off Texas. The Council reached this decision after hearing an update on the conditions of the Texas shrimp stocks, an economic analysis of the 2001 Texas closure, and public comment. The purpose of the closure is to protect juvenile shrimp migrating from the bays to the Gulf of Mexico and to allow shrimp to grow to a larger, more valuable size.

The Council reviewed the red grouper stock assessment and a stock assessment for yellowedge grouper. The red grouper stock was found to be in an improved condition compared to 1997, due in part to

improved biological information on fecundity and a strong 1996 year class. However, it is not yet at a biomass level that will allow maximum sustainable yield. Consequently, the requirement remains to rebuild the stock to maximum sustainable yield by 2012. Fortunately, less restrictive measures are needed than previously proposed; only a 10% reduction in harvest is needed as opposed to the 45% reduction previously sought.

The Gulf Council moved that NOAA Fisheries proceed with the initial referendum for the commercial red snapper individual fishing quota (IFQ) program. During the early to mid 1990s, the GMFMC devoted over three years to develop an individual transferable quota program (ITQ) for the commercial red snapper fishery. It was scheduled for implementation in 1996; however, Congressional action in late 1995 prohibited implementation before October 2000. Subsequently, the moratorium was extended until October 1, 2002. In addition to the moratorium, Congress specified that a referendum be conducted among license holders before any ITQ plan development and a second referendum be held following plan preparation before submission to the Secretary of Commerce.

In March 2003, the GMFMC finalized preferred alternatives for status criteria and benchmarks for managed species under the Coastal Migratory Pelagics FMP, including Gulf group king and Spanish mackerel and cobia. These estimates of maximum sustainable yield and optimum yield, as well as definitions of overfishing and the overfished conditions for these stocks are required by the Magnuson-Stevens Act. These criteria guide future management decisions of these stocks.

Due to uncompleted research needed by the Council to make final decisions regarding fishing restrictions within the Madison-Swanson and Steamboat Lumps Marine Reserves, the Council delayed final action on Reef Fish Amendment 21 from the May Council meeting until the July 14-17, 2003 meeting. Research was conducted as part of a settlement to a legal challenge brought against NMFS by the Coastal Conservation Association (CCA). The CCA contended that trolling for pelagic and surface fish does not impact reef fish and should be allowed within the reserves.

In May 2003, the Council reviewed a set of scoping options for Amendment 15 to the Coastal Migratory Pelagics FMP, a joint plan with the South Atlantic

Fishery Management Council (SAFMC). Options considered included:

- ♦ Adding additional species to the management unit such as dolphin, wahoo, little tunny, cero, bluefish, blue runner, and blackfin tuna;
- ♦ Prohibiting the sale of recreationally caught fish under the Coastal Migratory Pelagics FMP;
- ♦ Increasing the minimum size limit or reducing the bag limit on cobia;
- ♦ Establishing a standardized bycatch reporting methodology for the Coastal Migratory Pelagics FMP as required by Section 303(a)(11) of the Magnuson-Stevens Act.

The Council voted to add an alternative to require a commercial vessel permit to sell mackerel. The current federal king and Spanish mackerel permits are issued in order for the owner/operator to exceed the bag limit. To legally sell mackerel, they need only comply with applicable state law. The Council added an option for a single Coastal Migratory Pelagics vessel permit with separate endorsements for the managed species that fishermen desire to harvest. The Council voted to develop options to end the moratorium on the issuance of new Gulf group king mackerel permits and replace it with a permanent license limitation system. This process will likely be conducted through a separate amendment and will be conducted in concert with the SAFMC.

The Council reiterated to the NMFS the rationale to require bycatch reduction devices (BRDs) in federal waters of Statistical Subareas 1-3 (Monroe and Collier counties on the southwest coast of Florida). Invertebrates make up a large portion of the bycatch in Statistical Subareas 1-3; the ratio of finfish to shrimp is 1.3 to 1. However, many invertebrate species do not suffer bycatch mortality and even though invertebrate bycatch may not be affected by the use of BRDs, finfish bycatch will be reduced by at least 30%. Although most of the finfish bycatch does not include managed species, these species have ecological importance and are equally subject to the Magnuson Stevens Act requirement under National Standard 9 to reduce bycatch where practicable. BRDs are required in all Florida state waters and in all waters of the EEZ west of Cape San Blas, Florida. Expanding the BRD requirement to include all Gulf EEZ waters will eliminate any dividing lines and will reduce a significant enforcement problem. It is practicable to require BRDs throughout the EEZ of the Gulf. The following vessels would be exempt:

- ♦ vessels trawling for royal red shrimp beyond the 100-fathom contour;
- ♦ vessels trawling for groundfish or butterfish;

- ♦ vessels with a single try net with a headrope length of 16' or less per vessel; and
- ♦ vessels with no more than two rigid-frame roller trawls limited to 16' or less, such as those used in the Big Bend area of Florida

Additional bycatch reduction will result in better compliance with National Standard 9 to minimize bycatch.

At a special June meeting in New Orleans, the Council reviewed the Essential Fish Habitat Draft Environmental Impact Statement (EFH DEIS). The main purpose of the meeting was to select preferred alternatives for identifying EFH, designating Habitat Areas of Particular Concern, and identifying alternatives for preventing, mitigating, or minimizing adverse effects of fishing on EFH.

The Gulf Council took final action on Reef Fish Amendment 21 at its July 14-17, 2003 meeting. The amendment contained proposals to continue the marine reserves at Madison-Swanson and Steamboat Lumps (scheduled to expire June 16, 2004). The marine reserves at Madison-Swanson and Steamboat Lumps are each slightly over 100 square nautical miles in size. Madison-Swanson is approximately 40 nautical miles south of Apalachicola, Florida. Steamboat Lumps is approximately 95 nautical miles west of Tarpon Springs, Florida.

The Council proposed a six-year extension of the reserves until June 2010. During the extension, fishing would be allowed by surface trolling only during the months of May through October for coastal pelagic species (king and Spanish mackerel, cero, dolphin, cobia, and little tunny) and for highly migratory species (billfish, swordfish, marlin, sharks, and tunas other than blackfin tuna). Fishing for all species or by any other fishing method would be prohibited, and all fishing would be prohibited during November through April, including most of the gag spawning season. To improve enforceability, the possession of reef fish would be prohibited aboard all vessels in the reserves except those that are in continuous transit. The Council requested that the NMFS Highly Migratory Species Division implement compatible regulations to control fishing for those species within the reserves. The final amendment and a minority report from several Council members opposed to allowing surface trolling in the reserves was submitted to the NMFS for review and implementation before the existing four-year time period expires.

During the September 2003 meeting held in Baton Rouge, Louisiana, the Gulf Council elected Bobbi Walker and Julie Morris as Chairman and Vice-Chairman, respectively. Ms. Walker is a charter boat owner from Orange Beach, Alabama. She was appointed to the Council in 2000 and served as the Council's Vice-Chair during 2002/2003. During 2002/2003, Ms. Walker served as Chair of the Council's Advisory Panel Selection Committee and Ad Hoc Marine Reserves Committee. Ms. Morris is the coordinator of the Environmental Studies Program at New College in Sarasota, Florida. Before appointment to the Gulf Council, Ms. Morris was a Commissioner of the Florida Game and Freshwater Fish Commission and served as the first Chair of the Florida Fish and Wildlife Conservation Commission during 1999 and 2000.

On October 30, 2003, NOAA Fisheries formally notified the Gulf Council that the vermilion snapper stock in the Gulf of Mexico is overfished and undergoing overfishing. Under the provisions of the Magnuson-Stevens Act, the Council has one year to prepare and submit a plan to end overfishing and to rebuild the vermilion snapper stock. During their November 2003 meeting, several Council members expressed concern about developing a rebuilding plan based on a stock assessment with data only through 1999. The earliest that an updated vermilion snapper assessment can be conducted would be fall 2004/spring 2005, and a planned assessment for scamp would need deferral. The Council will consider asking NOAA Fisheries to replace the scamp assessment with a vermilion snapper assessment. In the meantime, development of a rebuilding plan will proceed.

The Gulf Council reviewed a draft of Reef Fish Amendment 22 and Supplemental Environmental Impact Statement at its November meeting. Public hearings will be held in January 2004 at a variety of Gulf State locations.

The first stock assessment prepared and reviewed by the Gulf Council under the new Southeast Data, Assessment, and Review (SEDAR) stock assessment process was the yellowtail snapper stock assessment from Florida Marine Research Institute. For the assessment, yellowtail snapper along the Atlantic and Gulf Coasts were considered a single stock, separate from yellowtail snapper in the Caribbean or Mexico. Researchers continued to conduct genetic studies, and the stock definition and range could change in the future. The assessment found that yellowtail snapper are neither overfished nor undergoing overfishing.

At its November meeting, the Gulf Council finalized its mariculture policy in the Gulf of Mexico EEZ. Mariculture presents both potential benefits as well as potential negative impacts; it is the policy of the Gulf Council to encourage environmentally responsible mariculture. The policy encouraged the use of native species to the Gulf of Mexico and opposed the use of non-native species unless demonstrated that no detrimental impacts will occur to native species. The Council specifically opposed the use of non-native species in open water environments where escapement can occur. The policy addressed record keeping of all transactions to verify origin of the cultured species, protection of habitat, and ongoing research. The policy also contained provisions for location, design, and operation of mariculture facilities to prevent adverse impacts to estuaries, marine habitats, and native fishery stocks, and to avoid or at least minimize conflicts with or restrictions on recreational, for-hire, or commercial fishing activities. Mariculture facilities should be designed, maintained, and operated in such a manner to avoid impacts to the local environment and minimize negative impacts of discharge from the facility. In addition, mariculture facilities should develop procedures for effective disease control using FDA approved therapeutic and chemical treatment as part of best management practices.

The Gulf Council reviewed an exempted fishing permit (EFP) from Florida Offshore Aquaculture, Inc. of Madeira Beach, Florida. According to the applicant, the EFP would be used to conduct a feasibility study for 24 months of net cage culture of cobia, mahi-mahi, greater amberjack, Florida pompano, red snapper, and cubera snapper. The proposed study would determine the feasibility to grow commercial quantities of native fish species in the offshore environment of the eastern Gulf of Mexico using mariculture techniques. An environmental assessment prepared by NOAA Fisheries concluded that the project would not have a significant impact on the environment. However, Council members raised numerous concerns about the plan including (but not limited to) the locations of nearby licensed aquaculture dealers, the boat being used by the company to transport feed and fish to and from the cages, DNA fingerprinting to track the fish throughout their sale, escapement and its impact on wild stocks, type of food used for feeding, transfer of disease to wild fish, timing of cage and fingerling placement, expertise and ability of the group, associated penalties for violating the EFP, and environmental damage responsibilities. The Council felt too many questions were unanswered regarding general operational procedures and environmental

concerns to justify the issuance of an EFP and strongly recommended denial of the permit. Subsequently, Florida Offshore Aquaculture responded to the Council's concerns in writing, and the application stands under review by NOAA Fisheries.

In November, the Council reviewed Joint Public Notice MD02-02232-G regarding the proposed relocation by Biotechnologies, Inc. of a mariculture facility in the Gulf of Mexico off Alabama. Biotechnologies proposed to annually produce five million pounds of cobia, red drum, red snapper, hybrid striped bass, grouper, mahi-mahi, greater amberjack, and red porgy. The Council expressed concern that project location and fencing public waters would cause user conflicts. The proposed location is immediately adjacent to a safety zone and could create a hazard to navigation. Further, the applicant did not apply for an EFP. Their recommendation was that the current application for a proposed relocation be held in abeyance until the applicant applied for and received an EFP. These concerns were conveyed to the U.S. Army COE, Mobile District, the responsible party to approve or disapprove the proposed relocation.

The Council participated in the *Managing Our Nations Fisheries* conference held in Washington, D.C. on November 13-15, 2003. The conference brought together representatives from each of the eight regional fishery management councils and NOAA Fisheries to review what the regional councils and NOAA Fisheries are doing to protect and preserve the nation's living marine resources. The Council's Deputy Executive Director/Senior Fishery Biologist, Rick Leard, gave a PowerPoint presentation on the past, present, and future of fisheries management in the Gulf of Mexico. The presentation included an overview on the status of stocks in the Gulf, accomplishments, ongoing problems, and future directions in fishery management.

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 Gulf States Marine Fisheries Commission (GSMFC) spring (Point Clear, Alabama, March 17-20) and fall (Corpus Christi, Texas, October 13-16) semi-annual meetings. Participation included meetings of the Habitat Subcommittee, Technical Coordinating Committee (TCC), State-Federal Fisheries Management Committee (S-FFMC), and Commission Business Sessions. Participating personnel included Columbus Brown, Special Assistant to the Southeast Regional Director for Councils, Commission, and Gulf of Mexico Program; Doug Frugé, Gulf Coast Fisheries Coordinator in Ocean Springs, Mississippi; and Marilyn Lawal of the Southeast Region Federal Assistance Office in Atlanta, Georgia. John Forester, Project Leader of the FWS Baton Rouge Fisheries Resource Office (FRO) represented the FWS at a meeting of the S-FFMC on August 21.

ANADROMOUS FISHERIES

Striped Bass Fishery Management Plan Revision

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

Major accomplishments and activities included:

- ♦ Chairing a meeting of the TTF in Baton Rouge, Louisiana, on January 29-31;
- ♦ Chairing a meeting of the TTF in Biloxi, Mississippi, on June 10-12;
- ♦ Chairing a meeting of the TTF in Apalachicola, Florida, on November 19-20;
- ♦ Conducting a comprehensive literature search for information needed to draft or revise various sections of the document resulting in acquiring over 320 references; and
- ♦ Drafting and revising various sections of the revision document including those on biological description, geographical distribution, habitats, impacts of barriers and impediments to migration, impacts of non-native species, impacts of thermal discharge, management goals

and recommendations, management history, reproduction, stock status, and stocking.

Apalachicola-Chattahoochee-Flint (ACF) Rivers Striped Bass Restoration Technical Committee

Personnel from several FWS offices (Panama City FRO; Southeast Regional Office, Atlanta, Georgia; Warm Springs Fisheries Technical Center (FTC) and National Fish Hatchery (NFH), Georgia; Welaka NFH, Florida) attended the annual *Morone* workshop in Bainbridge, Georgia, sponsored by the Apalachicola-Chattahoochee-Flint rivers system Striped Bass Technical Committee on February 12-13. Personnel of the FWS also participated in a meeting of the ACF Striped Bass Technical Committee at Chattahoochee, Florida, on December 11.

Striped Bass Fry/Fingerling Production and Stocking

Through cooperative efforts of a number of FWS field stations (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, Georgia, and Mississippi, approximately 2,343,200 Phase I and 160,300 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 fry used to produce 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) continued to coordinate and manage a contract with the New York University School of Medicine for striped bass broodfish genetics screening during the 2003 spawning season. This was the first option year for continuation of a multi-year contract for this purpose. The purpose of the screening is to determine specific genotypes of striped bass used for hatchery production and subsequent restoration stocking within the ACF and other river system. Knowledge regarding the specific genotypes of fingerlings in

production is essential in applying genetic tagging procedures and to assure only Gulf race striped bass are used for restoration. These data are also useful in monitoring genetic composition of the broodstock sources used in restoration. The office continued to develop a historical database on genetic analyses conducted on striped bass in Gulf of Mexico rivers.

In January 2003, Warm Springs FTC began to tank spawn domestic striped bass broodstock. Warm Springs NFH evaluated handling and hauling techniques to determine if alternative methods may improve the quality of distributed fish. Warm Springs NFH and Fish Health Center (FHC) reviewed and developed protocols to assess potential eye damage during Phase II striped bass harvesting. An important criterion addressed was differences in potential survival of distributed fish that might be associated with the presence of corneal ulcers.

Other Striped Bass Restoration Activities

The Panama City FRO in cooperation with Welaka NFH, Natchitoches NFH, and Warm Springs, NFH continued evaluation of the relative importance of stocking Phase II striped bass in the Apalachicola River. In 2003, about 117,300 Phase II tagged fingerlings were stocked into the river. Sampling for striped bass occurred during the year to determine survival and growth rates and the ultimate contribution of Phase II striped bass to the population in the river. The Florida Fish and Wildlife Commission (FWC) provided internal anchor tag assistance. The Panama City FRO continued to coordinate revision of the Apalachicola-Chattahoochee-Flint River Striped Bass Restoration Plan.

Gulf Sturgeon Recovery Activities

On January 6-9, several FWS field stations [Baton Rouge FRO, and Alabama, Louisiana, and Panama City Ecological Services Field Offices (ESFOs)] cooperated with the MDMR, COE, NOAA, and LDWF in Mississippi Sound studies to assess the potential effects of commercial trawling on Gulf sturgeon. Four telemetry-tagged Gulf sturgeon were located in the Sound. None were captured in trawls.

The Baton Rouge FRO assisted the LDWF from January through April in efforts to track sonic-tagged Gulf sturgeon in Lake Pontchartrain, Louisiana, and Mississippi Sound as part of a study to determine coastal bay habitat use by the species. From March to May, Baton Rouge FRO assisted the LDWF with Gulf sturgeon studies in the Pearl River from Columbia, Mississippi, northward toward Monticello

and southward to the Mississippi/Louisiana state boundary. Studies involved searching for sonic-tagged Gulf sturgeon in an effort to identify potentially suitable spawning habitats. Egg collection mats were deployed. During June, the FRO assisted in population sampling in the lower Pearl River.

On March 19, the final rule designating critical habitat for Gulf sturgeon was published in the *Federal Register*. The rule, published jointly by the FWS and NOAA Fisheries, designated 14 geographic areas among Gulf of Mexico rivers as critical habitat. The total area encompassed approximately 2,783 river kilometers (1,730 river miles) and 6,042 square kilometers (2,333 square miles) of estuarine and marine habitat. Critical habitat is specific areas considered essential to the conservation of a listed species and that may require special management considerations for protection. Section 7(a)(2) of the Endangered Species Act (ESA) required that all federal agencies ensure any actions authorized, funded, or carried out are not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat.

The Warm Springs FTC continued work on the use of sterilized Gulf sturgeon as sentinel fish to help locate important habitats in river systems.

The Panama City FRO continued to work with the University of Florida in Choctawhatchee Bay to refine lavage techniques to determine Gulf sturgeon food habits and available prey species. This work will help to understand food preferences and differences between bay and open Gulf prey availability and identify habitat protection areas. The Panama City FRO also conducted population sampling for Gulf sturgeon in the Escambia River during October.

Numerous FWS representatives attended the annual Gulf Sturgeon Workshop in Mobile, Alabama, on October 23-24.

The Gulf Coast FCO drafted a letter recognizing the efforts of three individuals who rescued a stranded 6.5' Gulf sturgeon in the Pascagoula River near Vancleave, Mississippi, on November 20. The letter was submitted to the FWS regional office for the regional director's signature.

OTHER COASTAL FISHERIES

FWS Special Agents assisted in an investigation that resulted in the arrest and conviction of two men for illegal interstate commerce of oysters. In the joint operation with the LDWF, the men were sentenced under the Lacey Act in the Southern District Court of Mississippi in August/September 2003. Sentences involved up to 51 months in federal prison and \$2,500 fines.

Southeast Aquatic Resources Partnership

In coordination with state fish and wildlife agencies in the southeastern U.S., the FWS established the Southeast Aquatic Resources Partnership (SARP) in 2001. The SARP was formed to better unify joint agency efforts to address numerous aquatic resource challenges in the region. The SARP functions similarly to migratory bird joint ventures, but its focus is aquatic resources with emphasis on habitat protection, restoration, and enhancement. Although SARP began primarily inland, the long-term vision encompasses coastal and nearshore marine interests. The FWS presented SARP to the S-FFMC on October 15, and during their Business Session on October 16, the GSMFC decided to become a signatory to the SARP Memorandum of Understanding.

HABITAT PROTECTION/ENHANCEMENT

The FWS ESFOs at Vero Beach, Jacksonville (St. Petersburg Suboffice), and Panama City, Florida; Daphne, Alabama; Jackson, Mississippi; Lafayette, Louisiana; and Houston and Corpus Christi, Texas, continued efforts to protect and restore coastal habitats through a variety of activities. These efforts included application review for COE permits, consultation on potential effects to ESA listed species, and FWS Environmental and Coastal Programs. Examples included:

- ♦ Consultation by the Panama City ESFO with Pensacola Naval Air Station regarding potential disorientation effects from a proposed new light system on hatchling sea turtles;
- ♦ A study on methylmercury and other contaminants in fish and wildlife in Mobile Bay;
- ♦ Sea turtle nesting protection activities by Panama City ESFO and Bon Secour National Wildlife Refuge focusing on beach driving in Gulf County including Eglin Air Force Base and beach development in Gulf Shores.

The FWS (primarily Panama City and Daphne ESFOs) continued work on efforts to determine and protect water needs of aquatic resources in ongoing negotiations with the states of Alabama, Florida, and

Georgia and various federal agencies on water use and allocations in the Alabama-Coosa-Tallapoosa (ACT) and the ACF river basins.

The Florida Gulf Coastal Program, through Jacksonville and Panama City ESFOs, contributed funding and technical assistance to numerous partners for a variety of habitat protection and restoration projects. The FWS provided comments to the GSMFC draft Derelict Crab Trap Removal Guidelines document.

The Lafayette ESFO represented the FWS on the interagency team for Coastal Wetlands, Planning, Protection, and Restoration Act (CWPPRA or Breaux Act). The team developed and sponsored wetland restoration projects focused on reducing subsidence and erosion-related wetlands loss in coastal Louisiana. The Lafayette ESFO also acted as the FWS lead in the Louisiana Coastal Area Study with the U.S. COE and the LDNR. The Lafayette ESFO participated in the Sand Task Force, a Minerals Management Service Program to mine sand from federal waters offshore Louisiana for use in shoreline restoration and protection.

The FWS continued its support of operations at Rancho Nuevo, Mexico, to protect the Kemp's ridley sea turtle nesting area. During 2003, there were 8,297-recorded Kemp's ridley sea turtle nests on Rancho Nuevo beaches, continuing the consistent increase in nest counts that began in the early 1990s. Of those, 8,184 nests were protected. In Texas, 19 nests were recorded, and two were recorded in other U.S. areas. In addition to hatchlings fledged from these nests, over 474,000 hatchlings were released.

Gulf of Mexico Program

Several FWS offices in the Southeast and Southwest regions represented the agency on focus teams and committees. These included

- ♦ Columbus Brown on the Management Committee;
- ♦ Patricia Carter, Southeast RO and Bob Pitman, Southwest RO on the Invasive Species Focus Team;
- ♦ Larry Goldman, Daphne ESFO on the Habitat Focus Team; and
- ♦ Doug Frugé, Gulf Coast FCO and John Forester, Baton Rouge FRO on the Nutrient Enrichment Focus Team

Mississippi River/Gulf of Mexico Watershed Nutrient Task Force

Participation continued in the Mississippi River/Gulf of Mexico Watershed Nutrient Coordination Committee. Doug Frugé represented the FWS and participated in conference calls on April 3, September 23, and November 13.

Information was provided to the U.S. Geological Survey on April 11 regarding FWS habitat restoration contributing to nutrient reduction. The information will be submitted to the EPA in response to a Congressional inquiry.

John Forester (Baton Rouge FRO) represented the FWS at meetings of the Louisiana Hypoxia Working Group on April 28, May 7, July 10, September 15, and October 21. The working group is a subcommittee of the Lower Mississippi River Sub-basin Team established under the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force Action Plan. Columbus Brown (FWS SERO) represented the FWS at the November 19 meeting in St. Louis, Missouri.

Fish Passage

The FWS continued a project through the FWS Fish Passage Program to evaluate alternative lock operational scenarios at Miller's Ferry Lock and Dam on the Alabama River in order to facilitate fish passage, potentially benefiting anadromous fish species. The Alabama ESFO through a contract with the Geological Survey of Alabama coordinated the project.

FEDERAL AID FUNDING

The FWS continued to provide 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 provisions 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 and initiated in 2003 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. Work under this project included fishery-dependent and fishery-independent data collection, public outreach, habitat enhancement, and life history research. Also included were

maintenance and improvement of facilities and equipment including the Alabama Marine Resources Division office on Dauphin Island.

Florida

- ♦ Marine Artificial Reef Planning, Assessment, Development, and Administration. Activities included planning, development, and assessment of artificial reefs in state and federal marine waters off Florida's Gulf and Atlantic coasts.
- ♦ Fisheries Statistics. This project provided statistical expertise for design and analysis of fisheries, studies, enhance analytical capabilities of field personnel, and assimilated statewide fishery information into comprehensive databases.
- ♦ Enhancement of a Recreational Fisheries Component of the Marine Resources Geographic Information System. This project provided enhanced Internet mapping and data delivery tools, better characterization of human use of the marine environment, and improved models of fish-habitat interactions.
- ♦ Investigations into Nearshore and Estuarine Gamefish Abundance, Ecology, and Life History in Florida. Research was conducted on aspects of life history, behavior, and other important ecological processes (catch and release mortality, movement, and critical habitat utilization) for snook, spotted seatrout, and tarpon.
- ♦ Application of Population Genetics to Florida Sportfish Species for Fishery Management. Objectives were to determine genetic stock structure and the geographic extent of genetic stocks of selected sportfish species and to monitor the effects of releasing hatchery-reared red drum into the wild on the genetic diversity of wild populations.
- ♦ Health Monitoring of Florida's Sportfish. Fish health data were collected to develop a species-specific health criteria for profiles to be included in a statewide marine fish stocking policy.
- ♦ Southeast Florida Reef Fish Abundance and Biology. This project provided life history and population dynamics information necessary for stock assessment, development, or improvement of fisheries management plans, and the establishment of harvest regulations designed to maintain viable, productive recreational reef fisheries in southeast Florida. Focus was primarily on yellowtail snapper, lane snapper, and red grouper.
- ♦ Aquatic Resource Education Program. A statewide marine aquatic education program was implemented to increase the public participation in management and preservation of Florida's

marine resources by heightening awareness and personal responsibility toward these resources.

- ♦ Florida Saltwater Angler and Boater Outreach Program. Efforts included development of audio/video written program updates, web pages, public displays, media components, and public surveys portraying the benefits of the state's sport fish restoration program in order to enhance support for the program.

Louisiana

- ♦ Stock Assessment of Louisiana's Important Marine Finfishes. The spawning potential ratio of major recreational saltwater finfish were determined in order to comply with legislative mandates to ensure that stocks of finfish are not overfished when the spawning potential ratio falls below 30%.
- ♦ Identifying Essential Fish Habitat in Barataria Bay. Under this project sidescan sonar, split beam hydroacoustics, and stable isotope techniques were used to identify essential fish habitat in Barataria Bay and to quantify their value to important sportfish species in order to address protection and conservation of habitats important to marine, estuarine, and anadromous species.
- ♦ Evaluating Sport Fish Use of Created Wetlands in the Atchafalaya Delta. The project evaluated potential wetland creation sites in the Atchafalaya River delta area.
- ♦ Louisiana Marine Sport Fish Investigation, Laboratory Acquisition/Development, Southeast Louisiana. This project entailed design and construction of a marine fisheries laboratory on a 7.8-acre tract in Grand Isle, Louisiana.
- ♦ Industrial Canal Fishing Pier, Calcasieu Parish. A fishing pier was constructed in association with a parish boat ramp and recreational area in order to provide access to prime marine fishing areas.
- ♦ Reserve Boat Launch, Phase III, St. John the Baptist Parish. Two new boat launch facilities were constructed with 120' piers, and parking was expanded to improve fishing and boating access to Lake Maurepas.
- ♦ Burns Point Park Boat Launch Improvements. An expanded boat trailer parking area, concrete apron, and extension of the north walkway were constructed at the Burns Point Launch located on East Cote Blanche Bay in St. Mary Parish.
- ♦ Ashland Boat Launch, Terrebonne Parish. The boat launch and parking facilities near Houma were renovated and expanded.
- ♦ Lockport Boat Launch, Lafourche Parish. The existing parking lot was elevated with limestone

to improve drainage. Concrete ramps and wooden docks were repaired on the boat launch.

Mississippi

- ♦ Mississippi's Gulf Coast Striped Bass Restoration Program. Striped bass were intensively cultured for stocking and then tagged and released into Mississippi coastal rivers.
- ♦ Gulf Coast Fisheries Outreach. Information on the benefits and results of Sport Fish Restoration effects in coastal Mississippi was disseminated through production of public service announcements, written materials, web pages, public displays, and multimedia presentations.
- ♦ Mississippi Artificial Reef Program. This project monitored reef development, identified suitable locations for new reefs, and developed outreach.
- ♦ Research on Juvenile Fishes in Sargassum in Mississippi Marine and Gulf Waters. Investigations were conducted on larval fish populations associated with *Sargassum* and frontal zone habitats. Species present, species diversity, and relative abundance were related to selected parameters found in these habitats.
- ♦ Assessment of Concrete Rubble as Artificial Reef Material in Mississippi Coastal Waters. Fish populations associated with artificial reefs constructed of concrete rubble were evaluated.
- ♦ Sport Fish Studies in Mississippi Coastal Waters. Populations of marine sport fish, including spotted seatrout, sheepshead, sand trout, and various shark species were evaluated and monitored.
- ♦ Sport Fish Tag and Release in Mississippi Coastal Waters and the Adjacent Gulf of Mexico. Anglers were enlisted to gather various types of data and tag their catches. The project primarily focused on spotted seatrout, cobia, and triple tail. Public workshops were held on fishery research and management procedures.

Texas

- ♦ Marine Fisheries Research. In order to help develop management plans, information was generated on the genetic makeup and population structure of Bonnethead Shark in Texas coastal waters.
- ♦ Perry R. Bass Marine Fisheries Research Station. Development and maintenance continued at the facility, which conducts research on several marine species and produces 4.5 million fry/fingerling red drum and spotted seatrout annually.

- ♦ GCCA/CPL Marine Development Center. New facilities were constructed as needed; old facilities were renovated. Existing facilities were maintained at the GCCA/CPL Marine Development Center for the production of marine species to support sport fishing on the Texas Gulf Coast.
- ♦ TEXAS CLIPPER Artificial Reef. The 473' TEXAS CLIPPER was acquired, cleaned, and sank for an artificial reef to enhance fishery resources by creating habitat to improve recruitment and spawning potential of reef associated species.
- ♦ Conservation Genetics of *Archosargus probatocephalus*. This project assessed temporal stability within and among localities and genetic variability and structure in the sheepshead population of the Texas coast.
- ♦ Population Genetics of *Halodule wrightii*. In order to identify genetically correct subspecies for reintroduction efforts, the genetic structure was assessed along the Texas coast.
- ♦ Population Structure in the Blacktip Shark. Population structure of blacktip sharks in the northern Gulf of Mexico and western North Atlantic was determined using restriction fragment length polymorphism analysis of mitochondrial DNA. The information assisted in the development of management plans for the species.
- ♦ Hydrophone Use to Identify Spotted Seatrout. The objective of the project was to identify sound production associated with reproductive activities of spotted seatrout in Texas bays to help identify and classify spawning areas in order to undertake protective actions for the areas.
- ♦ Saltwater Game Fish Environmental Assistance and Technical Guidance. Field studies and assessments were undertaken to identify the extent of human impact upon water and sport fish in coastal areas and to provide technical advice and recommendations to private entities and local, state, and federal regulatory agencies involved in managing these resources.
- ♦ Genetic Monitoring of Spotted Seatrout. This project monitored temporal genetic variability in spotted seatrout populations in Texas bays to provide better information to manage the species.
- ♦ Conservation Genetics of Gulf Menhaden. The objective of this project was to assess spatial and temporal genetic variability and genetic structure in Gulf menhaden populations of the Texas coast to provide information for developing management plans.
- ♦ Atlantic Croaker Maturation and Spawning in Texas Marine Waters. Age at maturation, spawning frequency, fecundity, and spawning seasons were determined for Atlantic croaker in Texas marine waters to provide information to help manage the species.
- ♦ Sabine Pass Battleground State Historical Park Bulkhead and Boat Ramp. This project provided an expanded four-lane boat ramp facility, lagoon excavation, and bulkhead renovation providing public boating and fishing access opportunities.
- ♦ Coastal Fisheries Research Administration at Perry R. Bass Marine Fisheries Research Station. Administrative support was provided for all sport fish research activities at the facility.
- ♦ Coastal Fisheries Monitoring and Management Programs. This project monitored trends in landings, relative abundance, and size of recreationally important fishes in the marine waters of Texas.
- ♦ Sea Center Texas. Operational and maintenance was provided for Sea Center State Fish Hatchery, which annually produced and stocked approximately 15.5 million red drum and seatrout.

GULF STATES MARINE FISHERIES COMMISSION

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

for the year ended
December 31, 2003

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