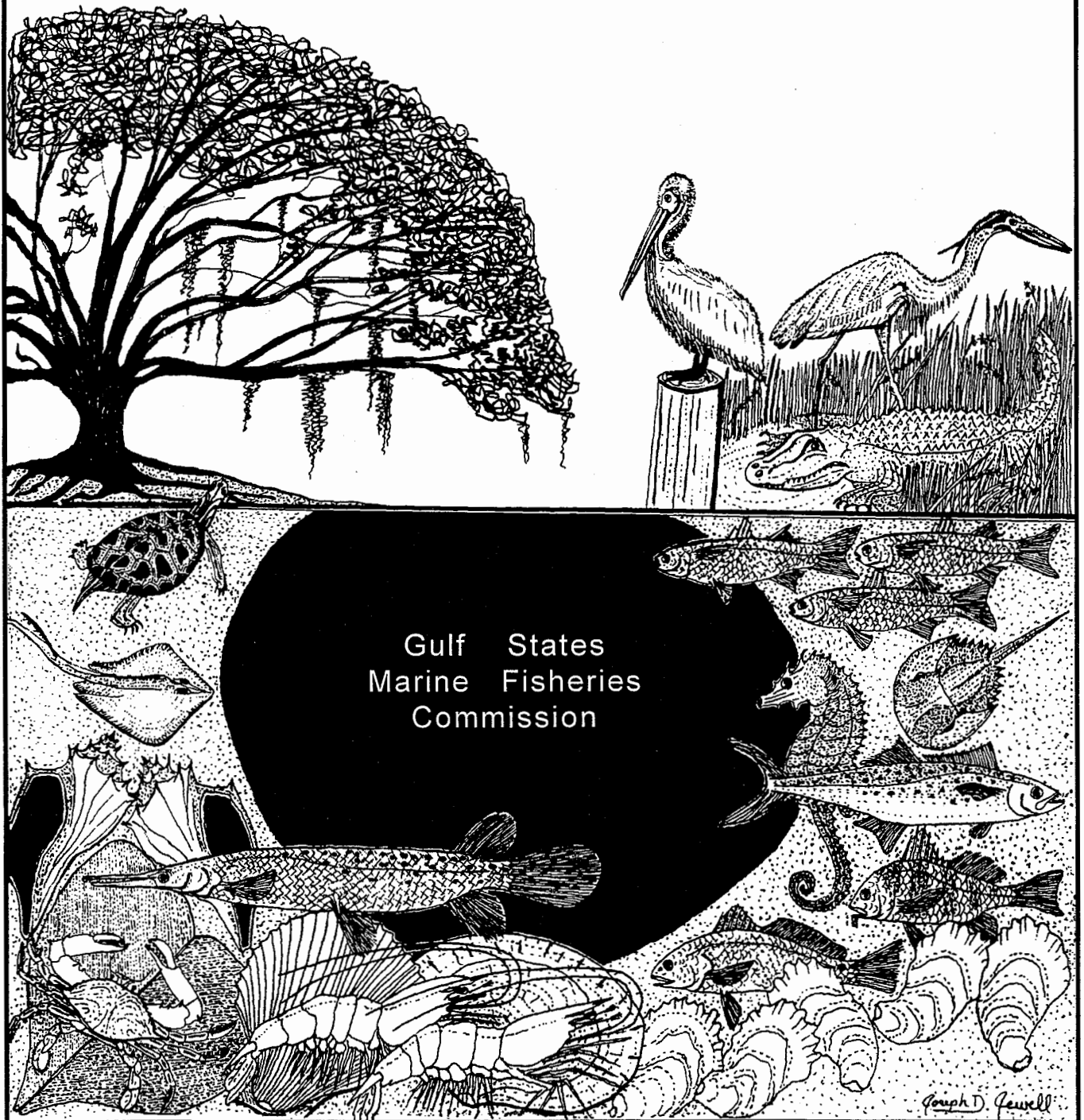


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Forty-Sixth Annual Report
of the
GULF STATES MARINE FISHERIES COMMISSION

FOR THE YEAR 1995



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

FORTY-SIXTH ANNUAL REPORT
(1995)

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

Gulf States Marine Fisheries Commission
Larry B. Simpson, Executive Director
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Acknowledgment

In submitting this Forty-sixth 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 forty-six years could not have been possible without such valued assistance. This acknowledgment is also extended to the directories 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,

Edwin J. Conklin, Chairman
Willaim S. "Corky" Perret, Vice Chairman
Larry B. Simpson, Executive Director

Table of Contents

Commission Roster	iv
Commission Officers	v
Commission Activities January 1, 1995 - December 31, 1995	1
Meetings/Activities of the Executive Director	2
Southeast Area Monitoring and Assessment Program	3
Cooperative Interstate Fishery Management in the Territorial Sea of the Gulf of Mexico	9
Interjurisdictional Fisheries Management Program	12
Commercial Fisheries Information Network (ComFIN) and Southeast Recreational Fisheries Information Network [RecFIN(SE)]	14
Alabama Department of Conservation and Natural Resources	18
Florida Department of Environmental Protection	23
Mississippi Department of Marine Resources	45
Louisiana Department of Wildlife and Fisheries	60
Texas Parks and Wildlife Department	69
Southeast Region - National Marine Fisheries Service	72
Gulf of Mexico Fishery Management Council	76
U.S. Fish and Wildlife Service	88
Financial Report for the Fiscal Year Ended December 31, 1995	93

Commission Roster

Chairman: Edwin J. Conklin

Vice Chairman: William S. "Corky" Perret

Commissioners

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

ALABAMA

James Martin
Alabama Department of Conservation &
Natural Resources
Montgomery, AL

Walter Penry
Alabama House of Representatives
Daphne, AL

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

FLORIDA

Virginia Wetherell
Florida Department of Environmental
Protection
Tallahassee, FL

Allen Boyd
Florida House of Representatives
Monticello, FL

LOUISIANA

William S. "Corky" Perret
Louisiana Department of Wildlife &
Fisheries
Baton Rouge, LA

Frank J. Patti
Louisiana House of Representatives
Belle Chasse, LA

Leroy Kiffe
Lockport, LA

MISSISSIPPI

E. Glade Woods
Mississippi Department of Marine
Resources
Biloxi, MS

Tommy Gollott
Mississippi Senate
Biloxi, MS

George Sekul
Gulf Central Seafoods, Inc.
Biloxi, MS

TEXAS

Andrew Sansom
Texas Parks & Wildlife Department
Austin, TX

Robert Saunders
Texas House of Representatives
Austin, TX

Jan J. Harper
Lake Jackson, TX

Staff

Larry B. Simpson
Executive Director

Ronald R. Lukens
Assistant Director

Richard L. Leard
IJF Program Coordinator

David M. Donaldson
SEAMAP Coordinator

Virginia K. "Ginny" Herring
Executive Assistant

Nancy K. Marcellus
Administrative Assistant

Cynthia B. Yocom
Staff Assistant

Cheryl R. Noble
Staff Assistant

Madeleine A. Travis
Staff Assistant

Commission Officers

Chairman: Edwin J. Conklin
1st Vice Chairman: William S. "Corky" Perret
2nd Vice Chairman: Chris Nelson

Committee Officers

Executive Committee Edwin J. Conklin, Chairman
Technical Coordinating Committee William S. "Corky" Perret, Chairman
Tom Van Devender, Vice Chairman
TCC Anadromous Fish Subcommittee Doug Frugé, Chairman
Charles Mesing, Vice Chairman
TCC Crab Subcommittee Tom Wagner, Chairman
TCC Data Management Subcommittee Henry S. "Skip" Lazauski, Chairman
Joe Shepard, Vice Chairman
TCC Habitat Subcommittee David Ruple, Chairman
TCC SEAMAP Subcommittee Walter Tatum, Chairman
Richard Waller, Vice Chairman
Commercial Fisheries Advisory Committee Chris Nelson (moderator)
Law Enforcement Committee Jerald Waller, Chairman
State-Federal Fisheries Management Committee Larry B. Simpson, Chairman
S-FFMC Menhaden Advisory Committee John Merriner, Chairman

GULF STATES MARINE FISHERIES COMMISSION

ACTIVITIES

During 1995, the Gulf States Marine Fisheries Commission and its member states were deeply involved with gill net legislation and shrimp bycatch activities in the gulf. The states of Louisiana, Mississippi, Florida, and Alabama had in-depth legislative sessions on the gill net issue. In Florida, a constitutional amendment was passed by the citizens of that state calling for major restrictions on the use of gill nets and shrimp nets in state waters. Since its passage, the state has dealt with gear buy back provisions and legal interpretations of just how the net restrictions must be enforced.

The Mississippi Legislature directed the Mississippi Commission on Marine Resources to oversee the gill net issue in that state. The Commission developed a compromise action of tending, locating, and construction of nets prior to the legislative session and remained with that plan for the next year to determine its success before taking any other actions.

The Louisiana Legislature passed a bill to severely restrict gill netting. The legislation was hastily written during the end of the session, and as a result, the law is undergoing departmental and legal interpretation. Litigation is ongoing to determine if the legislation is legal and, if so, under what circumstances.

Alabama Marine Resources Division Director Vernon Minton was able to develop a program of limited entry and management measures accepted by both recreational and commercial users. Through tedious work that included cooperative workshops with all involved parties, a workable solution has been established to limit the use of gill nets. At the same time, the program allows fishermen to enhance their economic viability for the future. The process was time consuming and difficult, but the result is an example of the leadership of Alabama's Division Director to develop farsighted solutions for gill net management.

Shrimp bycatch revolved around turtle and finfish bycatch this year. Although the shrimp industry was more than 95% in compliance with turtle excluder device (TED) requirements, some components of the environmental community brought suit against the National Marine Fisheries Service (NMFS) to close the industry down to prevent any additional turtles from being killed. The suits have all been dropped at this time, and the shrimp industry is largely focused on management measures to reduce the bycatch of red snapper and other finfish by 50%.

Larry B. Simpson
Executive Director

MEETINGS/ACTIVITIES OF THE EXECUTIVE DIRECTOR

GULF STATES MARINE FISHERIES COMMISSION

State Directors' Meeting on Vessel Registration, Houston, TX - January 1995
U.S. Fish & Wildlife Service Informal Audit, Ocean Springs, MS - January 1995
GSMFC Annual Spring Meeting, Orlando, FL - March 1995
State Directors' Conference Call on Vessel Registration, Ocean Springs, MS - April 1995
Joint GSMFC/ASMFC/PSMFC Meeting, Washington, DC - April 1995
RecFIN Meeting with NMFS Chief Scientist, Washington, DC - June 1995
Summer State Directors' Meeting, Grande Terre, LA - July 1995
Marine Fisheries Advisory Committee, DOC, Galveston, TX - August 1995
GSMFC Annual Meeting, Mobile, AL - October 1995
Marine Fisheries Advisory Committee, DOC, Portland, OR - November 1995
MARFIN Conference, Tampa, FL - November 1995
State Directors' Meeting, Corpus Christi, TX - December 1995

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

January 1995	Houston, TX
May 1995	Tampa, FL
July 1995	Key West, FL
September 1995	Biloxi, MS
November 1995	New Orleans, LA

CONGRESSIONAL MEETINGS

Testimony presented on the Magnuson Fishery Conservation and Management Act Amendments, Senate Bill 39, before the Commerce, Science and Transportation Subcommittee on Oceans and Fisheries, Field Hearing, New Orleans, LA - May 1995

OTHER MEETINGS AND ACTIVITIES

Mississippi Department of Marine Resources Commissioners' visit to GSMFC Office, Ocean Springs, MS - January 1995
Speaker, Minerals Management Service Meeting-Concerns of the Fishing Community Regarding Obsolete Rig Removal, Houston, TX - January 1995
Meeting with Baker and Schmitten on Turtles, Washington, DC - February 1995
Committee on Removal of Fixed Offshore Rigs, Metairie, LA - March 1995
National Bycatch Workshop, Seattle, WA - September 1995
Gulf and South Atlantic Fisheries Development Foundation's Gulf Bycatch Meeting, Atlanta, GA - October 1995

SOUTHEAST AREA MONITORING AND ASSESSMENT PROGRAM (SEAMAP)

The Southeast Area Monitoring and Assessment Program (SEAMAP) is a state/federal/university program for collection, management, and dissemination of fishery-independent data and information in the southeastern United States. The program presently consists of three operational components, SEAMAP-Gulf of Mexico, which began in 1981; SEAMAP-South Atlantic, implemented in 1983; and SEAMAP-Caribbean, formed in 1988. Each SEAMAP component operates independently, planning and conducting surveys and information dissemination in accordance with administrative policies and guidelines established by the states and National Marine Fisheries Service (NMFS).

In 1995, SEAMAP operations continued for the fourteenth consecutive year. SEAMAP resource surveys included the Fall Shrimp/Groundfish Survey, Spring Plankton Survey, Reef Fish Survey, Summer Shrimp/Groundfish Survey, Fall Plankton Survey, and plankton and environmental data surveys. Other 1995 activities included SEAMAP information services and program management.

RESOURCE SURVEYS

Fall Shrimp/Groundfish Survey

The Fall Shrimp/Groundfish Survey was conducted from October 14 to November 20, 1994, from off Mobile, Alabama to the U.S.-Mexican border. Vessels sampled waters out to 60 fm, covering a total of 373 trawl stations, in addition to plankton and environmental sampling. Sampling design was similar to the Summer Shrimp/Groundfish Survey, and the main purpose of the survey was to determine abundance and distribution of demersal organisms from inshore waters to 60 fm in the Gulf of Mexico.

During the survey, the NOAA Ship OREGON II sampled 242 stations in offshore waters and territorial Louisiana and Texas waters. The R/V VERRILL sampled eight stations in Alabama territorial waters. The R/V TOMMY-MUNRO sampled 23 stations in Mississippi territorial and offshore waters. The R/V PELICAN sampled 20 stations in Louisiana territorial and offshore waters. Texas vessels sampled 80 stations within their territorial waters.

In addition, ichthyoplankton data were collected by NMFS and Louisiana vessels at sample sites occurring nearest to half-degree intervals of latitude/longitude. A total of 52 stations was sampled with bongo and/or neuston nets, as encountered along cruise tracks. The samples, except those taken by Louisiana, will be sorted by the Polish Sorting and Identification Center (PSIC). Once sorted, all specimens and data will be archived at the SEAMAP Archiving Center.

Spring Plankton Survey

For the thirteenth year, plankton samples were collected during the spring in the northern Gulf of Mexico. The NOAA Ship CHAPMAN and Florida's R/V SUNCOASTER sampled offshore waters from the western edge of the West Florida Shelf to the Texas-Louisiana border from April 14 to June 10, 1995. A total of 142 stations was sampled.

Plankton samples were taken with standard SEAMAP bongo and neuston samplers. The bongo samples consisted of two conical 61-cm nets with 333-micron mesh. Tows were oblique, surface to near bottom (or 200 m) and back to surface. Wire angle was maintained at 45 degrees. Neuston samples were taken with 947-micron mesh nets on 1 x 2-meter frames towed at the surface for ten minutes. Right bongo and neuston samples were initially preserved in 10% buffered formalin and after 48 hours were transferred to 95% ethyl alcohol for final preservation. Left bongo samples were preserved via an ethanol/ethanol transfer to aid in preservation of larval otoliths. In addition, surface chlorophylls, salinity, temperature and dissolved oxygen from surface, midwater and near bottom and Forel-ule color were collected at all stations.

Right bongo and neuston samples collected from SEAMAP stations will be transhipped to the PSIC. Left bongo samples will be archived at the SEAMAP Invertebrate Plankton Archiving Center (SIPAC).

Reef Fish Survey

The fourth Reef Fish Survey was conducted from June to November 1995. Vessels from NMFS, Texas, Mississippi, and Alabama sample inshore and offshore waters, in addition to plankton and environmental sampling. Approximately 190 stations were sampled throughout the Gulf of Mexico. Randomly selected sites from Brownsville, Texas to Key West, Florida are chosen from known hard bottom locations. The major objective of the survey is to assess relative abundance and compute population estimates of reef fish using a video/trap technique.

Stations are randomly-selected 100 m² sites which are designated as "reef areas". There are several aspects of the reef fish survey: 1) locating and compiling known hard bottom reef habitat locations; 2) survey site selection; 3) sampling protocol using a fish trap and video camera; and 4) analyses of video records. Data are collected using the trap/video methodology where a fish trap containing a video camera is deployed onto the selected reef site. Trap soak time is one hour. After trap deployment, hydrographic data including a STD/light meter, transmissometer drop, secchi disk reading and surface chlorophyll samples are collected. Also, after the last trap/camera set, one ichthyoplankton station is completed each day with a surface neuston net and Tucker trawl. Environmental and plankton samples collected will use established SEAMAP protocols, and plankton samples will be transshipped to the PSIC.

Final analyses of video tapes are accomplished at the Pascagoula Lab, where data is recorded onto standard SEAMAP forms. Tapes are analyzed either in their entirety or by randomly-selected one minute intervals. The determinant factors for sampling are based on whether the reader can identify and count fish entering the camera field of view and record the data.

Summer Shrimp/Groundfish Survey

The main purpose of the survey is to monitor size and distribution of penaeid shrimp during or prior to migration of brown shrimp from bays to the open Gulf. The survey occurred from June 1 to July 19, 1995 where a total of 323 trawl samples was taken from coastal and offshore waters out to 50 fm from Mobile Bay, Alabama, to Brownsville, Texas. All vessels took environmental data, including temperature, salinity, oxygen, and chlorophyll at each station.

During the survey, the NOAA Ship OREGON II and R/V TOMMY MUNRO sampled offshore and inshore Gulf waters with 40-ft trawls. Alabama's R/V VERRILL sampled offshore Alabama waters with 40-ft trawls. The R/V PELICAN sampled both Louisiana state waters and offshore waters with 40-ft trawls, and Texas vessels sampled Texas state waters and offshore waters with 20-ft trawls.

Fall Plankton Survey

The fall ichthyoplankton survey was conducted from September 6 to September 29, 1995. Vessels from Florida, Alabama, Mississippi, Louisiana, and NMFS surveyed stations located along a 30-minute latitude/longitude grid from inshore waters to the shelf edge. The main objective of the survey is to assess abundance and distribution of king mackerel eggs and larvae.

The NOAA Ship CHAPMAN sampled 110 stations from Tampa Bay, Florida to Brownsville, Texas at depths from 5 to 100 fm. The R/V VERRILL sampled nine stations at the mouth and outside Mobile Bay. The R/V TOMMY MUNRO sampled 49 stations south of Mississippi Sound along a 30-minute grid. The R/V PELICAN sampled seven stations in Louisiana territorial waters. And Florida's R/V SUNCOASTER sampled 25 stations off Tampa Bay south to the Florida Straits area.

Stations were sampled with standard SEAMAP bongo nets and in accordance to established plankton sampling methodologies (see Spring Plankton Survey section).

Plankton and Environmental Data Surveys

As in previous years, plankton samples and environmental data were collected routinely during most SEAMAP trawling surveys. Objectives of these piggybacked surveys were: (1) to collect plankton samples throughout the survey area; and (2) to collect associated hydrographic and environmental data at each plankton station. Additionally, environmental data (salinity, temperature, and oxygen from surface, mid-depth and bottom waters, and chlorophyll from surface and bottom waters) were collected during the shrimp/groundfish surveys. Wind direction, wind speed, and wave height were taken at all trawl stations.

Samples from the right side of the bongo nets and neuston samples were shipped to the NMFS-Pascagoula Laboratory for shipment to Poland, where they will be sorted to the family level (both ichthyoplankton and selected crustacean and molluscan species). The left bongo sample from each station is retained as a back-up in the event of damage or loss of the specimens and maintained at the SIPAC. In addition to these piggybacked surveys, two major SEAMAP plankton surveys were conducted in 1995, as detailed earlier.

INFORMATION SERVICES

Information from the SEAMAP activities is provided to user groups through the program administration and three complementary systems: the SEAMAP Information System, SEAMAP Archiving Center and SIPAC. Products resulting from SEAMAP activities can be grouped into two major categories, data sets (including broadly, digital data and collected specimens) managed by SEAMAP Information System, SEAMAP Archiving Center and SIPAC and program information.

SEAMAP Information System

Biological and environmental data from all SEAMAP-Gulf surveys are included in the SEAMAP Information System, managed in conjunction with NMFS-SEFSC. Raw data are edited by the collecting agency and verified by the SEAMAP Data Manager prior to entry into the system. Data from all SEAMAP-Gulf surveys during 1982-1994 have been entered into the system, and data from 1995 surveys are in the process of being verified, edited, and entered for storage and retrieval. Verified, non-confidential SEAMAP data are available conditionally to all requestors, although the highest priority is assigned to SEAMAP participants. A total of 162 SEAMAP data requests have been received and processed. In some instances, requests were filled promptly; in many cases, however, a substantial lag occurred because of the extremely large amount of data being collected on an increased number of surveys over those of past years. Requested SEAMAP data were used for a multitude of purposes in 1995 including evaluating the abundance and size distribution of penaeid shrimp in federal and state waters to assist in determining opening and closing dates for commercial fisheries; assessing shrimp and groundfish abundance and distribution and their relationship to such environmental parameters as temperature, salinity, and dissolved oxygen; identifying environmental parameters associated with concentrations of larval finfish; compiling the 1993 SEAMAP Biological and Environmental Atlas; and comparing catches of shrimp and groundfish captured by 40-ft versus 20-ft trawl nets.

The SEAMAP data management system is decentralized, *i.e.*, distributed. Thus, the SEAMAP users are able to locally, and directly, enter and retrieve data. This system decreases the time necessary to enter and retrieve data and provides powerful and flexible local data analysis and display capabilities. Under the system, each SEAMAP site enters, verifies, and edits their data, eliminating the mail-oriented loop necessary to enter/edit/verify data. Secondly, each site has the capability of locally accessing SEAMAP data. Local data retrieval allows the data to be accessed in a timely manner with a minimum amount of effort and programming skills. Under the system, outside users (*e.g.*, Minerals Management Service, U.S. Army Corps of Engineers, etc.) may request special data sets for research or study. The outside users submit the request to the SEAMAP Subcommittee through the SEAMAP-Gulf Coordinator for approval to proceed. Once the request is approved, the information is provided by the Data Manager and staff members through a priority-based, mail-oriented system.

A major function of the SEAMAP Information System in 1995 was the processing of catch data from the Summer Shrimp/Groundfish Survey as near-real-time data. Data were transmitted three times weekly via cellular phone to the NMFS Mississippi Laboratories from the NOAA vessel, while the states' data were entered into the system

weekly. Plots of station locations and catch rates of shrimp, squid, and dominant finfish species were prepared and edited at the NMFS Mississippi Laboratories, and processed by GSMFC for weekly distribution to management agencies, fishermen, processors, and researchers. Management agencies also received comprehensive data listings showing penaeid shrimp length frequencies, sampling parameters, and environmental conditions.

SEAMAP Archiving Center

Larval fish and fish egg samples sorted to the lowest taxa level possible by the PSIC are returned to the SEAMAP Archiving Center for archiving and loan to researchers. Approximately 12,600 vials have been returned from the PSIC. Data entry for most of the returned sorted samples is completed in an improved and simplified SEAMAP data management system. Samples cataloged to date represent 18 orders, 126 families, 235 genera and 245 species.

The SEAMAP Archiving Center, which is managed in conjunction with Florida Department of Environmental Protection (FDEP) in St. Petersburg, Florida, processes both specimen loans and requests for associated plankton survey environmental data. Seven such requests have been accommodated in the present fiscal year. Currently, the FDEP is in the process of renovating the existing building which houses the SEAMAP Archiving Center, allowing for expansion of the climate-controlled storage area.

SEAMAP Invertebrate Plankton Archiving Center

The SEAMAP Invertebrate Archiving Center is in its eleventh year of operation. The mission of the SIPAC is to archive and manage the large collection of plankton samples acquired during SEAMAP cruises and to obtain specimens and/or data on selected invertebrate larval stages from those samples. The SIPAC provides unsorted plankton samples and data or specimens of larval invertebrates to qualified researchers upon request.

During 1995, a total of 225 SEAMAP plankton samples were received and logged into the SIPAC database. The samples were obtained from various SEAMAP cruises. A total of 428 neuston samples in the SIPAC collection that were collected during 1986 and 1987 have been transferred to the NMFS-Pascagoula for shipment to the PSIC. The number of samples currently catalogued in the SIPAC collections is 5,627. Samples currently on loan include 146 samples to various researchers in the Southeast Region.

In an effort to keep the space required to house the SIPAC collection of unsorted plankton samples to a minimum, samples that have been in the collection for over seven years and duplicate samples sorted and received from the PSIC are aliquoted to 1/4 their original volume and placed into 100ml vials. To date, approximately 1,200 samples collected from 1982-1985 have been aliquoted and prepared for long-term storage.

During 1995, SEAMAP plankton samples collected during various cruises samples collected were sorted for selected invertebrates following previously established protocols. A total of 436 lots of specimens were obtained from those samples. To date, the total number of SEAMAP samples sorted for invertebrates is 1,458, and the total number of lots obtained is 6,233.

During the next fiscal year, the SIPAC will continue to manage SEAMAP plankton collections and generate specimens and data on selected invertebrate species. A general inventory of sample holdings and verification of computer records will be conducted.

PROGRAM MANAGEMENT

The SEAMAP is administered by the SEAMAP Subcommittee of the TCC through the SEAMAP Coordinator, who is under the technical direction of the Subcommittee Chairman and administrative supervision of the GSMFC's Executive Director. Personnel associated with SEAMAP program management included the Coordinator, Data Manager, SEAMAP Archiving Center Curator, SIPAC Curator, and the NMFS-Pascagoula Laboratory Director, serving as Program Manager.

Planning

Major SEAMAP-Gulf Subcommittee meetings were held in October 1994 and March 1995, in conjunction with the Annual Fall and Spring Meetings of the GSMFC. All meetings included participation by various work group leaders, Coordinator, Data Manager, and the GSMFC Executive Director. In addition, to prepare for the discussion of the new SEAMAP Strategic and Management Plan, a subgroup consisting of the three components' chairmen and coordinators and the SEAMAP technical monitor met in Gulf Shores, Alabama on June 15, 1995. The group discussed what types of report(s) should be developed by the SEAMAP, the time frame which the plan will cover, the review and approval process of the report(s) and possible future activities of the program. Representatives from the Gulf program also met with the South Atlantic and Caribbean representatives in August 1995 to discuss respective program needs and priorities for 1996.

SEAMAP-Gulf work groups met this past year to provide recommendations to the Subcommittee for survey and data management needs. The Environmental Work Group met March 7 to discuss the method for collection of chlorophyll and standardization and calibration of environmental gear and to review the environmental section of the SEAMAP Operations Manual. The Red Drum Work Group met on April 6 (via conference call) to discuss the method for sampling red drum in offshore waters. And the Reef Fish Work Group sponsored a workshop concerning sampling artificial, vertically-distributed habitat (oil and gas structures) in the Gulf of Mexico on Grand Terre Island on April 26-27, 1995.

Coordination of program surveys and distribution of quick-report summaries of a Gulf-wide survey to management agencies and industry were major functions of SEAMAP management in FY1995. Other important management activities included coordinating data provision and specimen loans, preparing publications and documents and assisting in the preparation of state/federal cooperative agreements, including amendments to permit extension of activities previously not detailed in the agreements.

INFORMATION DISSEMINATION

The following documents were published and distributed in 1995:

- *1995 SEAMAP Marine Directory*. Inventories of marine agency contacts (state, federal and university) concerned with fishery research in the Gulf of Mexico, and summaries of information provided by these organizations: target species, types of fishery-independent sampling gear and platforms, annual sampling effort, and other materials.
- *SEAMAP Subcommittee Report to the GSMFC Technical Coordinating Committee -October 1, 1994 to September 30, 1995*. A detailed summary of program accomplishments, emphasizing survey design, material collected, data dissemination, budget information, and future survey activities.
- *Annual Report of the SEAMAP Program - October 1, 1993 to September 30, 1994*. A summary of FY1994 activities and proposed FY1995 events for the SEAMAP-Gulf, South Atlantic, and Caribbean Programs.
- *Environmental and Biological Atlas of the Gulf of Mexico, 1993*. A compilation of information obtained from the 1993 SEAMAP surveys including catch rates of shrimp and finfish, abundance and distribution of plankton in the Gulf of Mexico and environmental data from all surveys.

- *Proceedings from the SEAMAP Reef Fish Workshop.* A compilation of the presentations from invited speakers regarding their work as it pertains to sampling of oil and gas structures and recommendations formulated by the group concerning this type of sampling.
- *Real-time Data Summaries, 1995.* Data summaries which show pounds/hour and counts of brown, pink and white shrimp caught and finfish catches during the SEAMAP Summer Shrimp/Groundfish survey.

David M. Donaldson
Program Coordinator

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

During the period covered by this report (January 1, 1995 - December 31, 1995), the Gulf States Marine Fisheries Commission (GSMFC) continued to coordinate recreational fisheries programs throughout the Gulf of Mexico through funding provided by the administrative portion of the Federal Aid in Sport Fish Restoration Program administered by the U.S. Fish and Wildlife Service. As a part of the program activities, the Program Coordinator sponsored and/or attended/participated in several meetings and planning development activities pertinent to carrying out responsibilities of this Grant Agreement. Minutes of all meetings conducted by the GSMFC under this program are available upon request. Documents completed as deliverables for this program have been provided to the FWS and are available from their Region 4 Office or our office. A brief report on program progress follows.

Contract Issue

During the 1995 project year, the GSMFC was able to secure a Cooperative Agreement from the National Marine Fisheries Service (NMFS) to support the administrative functions of the Recreational Fisheries Information Network (RecFIN). Since some of those activities were proposed for the GSMFC Sport Fish Restoration Administrative Program for 1995, a change was requested in the expenditure of those funds. Since the change was related to RecFIN activities, there was no need to request an amendment. The change was approved by the FWS Region 4 Office. Another change was related to the Stock Assessment Training Workshop. Since funds were being provided for that workshop through a grant to the NMFS from the Environmental Protection Agency, the GSMFC did not fund that activity through the Sport Fish Restoration Administrative Program. The funding was spent instead to support ongoing artificial reef activities.

Anadromous Fish Restoration Activities

The primary activity during this program year was the collection of striped bass genetic samples by the state and federal agencies participating in the striped bass restoration effort and the analysis of those samples by Dr. Ike Wirgin. This year marks the last in a three-year effort to collect and analyze striped bass DNA samples. During 1993, 132 samples were analyzed. During 1994, the total was 172, while 135 samples were analyzed as of October 1995. This totals 449 samples over the three-year period. Preliminary analyses of the data indicate that all fish sampled are of Atlantic coast origin, with the exception of fish from the Apalachicola River in Florida. It should be noted that positive data are not available from all samples analyzed. The primary reason for this is that some samples are not of high enough quality to yield results. However, the overwhelming majority of samples did yield results. During the 1996 project year, the GSMFC will be combining the DNA data with several other data elements and entering the combined data into a data base. This data base will be used to determine the distribution of striped bass genotypes representative of the areas from which the samples were collected. The data base can also be used as a baseline to determine differences in the proportion of Gulf and Atlantic genotypes in these same areas following several years of stocking Gulf striped bass exclusively.

Artificial Reef Activities

The Artificial Reef Subcommittee consists of the artificial reef program managers in each state, a representative each from the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, and a representative from the South Carolina artificial reef program who provides an Atlantic coast perspective to the subcommittee. The primary activity of the subcommittee during this program year was to complete the development of the guidelines' document on artificial reef materials that have been used in the United States. The final report, which is scheduled to be completed during 1996, will provide artificial reef program managers and others interested in developing artificial reefs the information on benefits and drawbacks of using certain materials and recommendations on the most effective and efficient ways to use those materials. This is the third of three years that were set aside for development of the materials guidelines document.

Other important issues addressed during 1995 include the use of coal combustion and municipal solid waste incineration ash in artificial reef materials. In 1991, the GSMFC, at the request of the Artificial Reef Subcommittee, approved a resolution that called for a moratorium on issuing permits to construct artificial reefs from materials that contain coal combustion and municipal waste incineration ash except on an experimental basis. During 1995, a set of guidelines was established and adopted by the GSMFC for the use of coal combustion fly ash as artificial reef material. As a result, coal combustion fly ash was removed by reference from the above cited resolution. The other ash streams from coal combustion, and municipal solid waste incineration ash, continue to be subject to the resolution.

The use of army tanks and other military hardware as artificial reef material continued to be an important issue for the subcommittee. It is expected that a large number of tanks and armored personnel carriers will be continue to be deployed in the Gulf of Mexico as artificial reefs. The GSMFC, through the Artificial Reef Subcommittee, will continue to provide the coordination role between the military and the state artificial reef programs.

For the past several years, the Sport Fishing Institute in Washington, D.C. has been housing and maintaining a national data base for artificial reefs within the Artificial Reef Development Center (ARDC). Recently, that organization underwent restructuring and is now a part of the American Sportfishing Association. As a result, they have discontinued the operation of the ARDC and the national artificial reef data base. The GSMFC now has all of the data for the Gulf of Mexico and has set up computer hardware and software to house and maintain the data base on an ongoing basis. The Artificial Reef Subcommittee has determined that the data base needs complete revision and has begun the process to review the existing data categories and elements. This activity will be one of the primary jobs for the subcommittee during 1996. The data base is an integral part of the overall artificial reef activities supported by the GSMFC Sport Fish Restoration Administrative Program and is a very important tool in the development and management of artificial reefs in the Gulf of Mexico.

Fishery Data Activities

Of vital interest to fisheries programs in the Southeast Region are the Recreational Fisheries Information Network [RecFIN(SE)] and the Commercial Fisheries Information Network (ComFIN). During May 1995, an external review of the RecFIN was conducted. The result of that review was extremely favorable, recommending that the RecFIN move out of the pilot phase (first three year period) and become established as a long term program. In joint action during the September 1995 meeting of the RecFIN and ComFIN committees, a combined Memorandum of Understanding (MOU) for the RecFIN and ComFIN programs was developed and approved. As of December 1995, all but three of the signatures for the MOU were obtained. The remainder will be obtained in early 1996. This action was extremely important establishing the Fisheries Information Network (FIN) as of January 1, 1996. Work is ongoing to complete several activities under the various work groups and subcommittees of both the RecFIN and ComFIN. During the course of the year, the GSMFC staff organized and coordinated several conference calls for subcommittees and work groups of the RecFIN(SE) and ComFIN. An annual report of the 1995 RecFIN(SE) and activities will be completed in time for the February 1996 RecFIN(SE) meeting and will be provided to the Atlanta Office of Federal Aid as soon as it is available. It will provide details of the accomplishments of the program during the 1995 program year. Minutes and reports of all RecFIN(SE) and ComFIN activities are available upon request. As mentioned, dedicated funding to support the administrative activities of the RecFIN(SE) and ComFIN has been received; however, those funds were not effective until July 1, 1995, requiring that Sport Fish Restoration Administrative support for those activities through June 30, 1995.

Through the GSMFC Sport Fish Restoration Administrative Program, funding to conduct a comparative trawl survey study has been provided to the GSMFC Southeast Area Monitoring and Assessment Program (SEAMAP). Fishery independent data and information have been collected through SEAMAP for more than ten years; however, due to differences in catch characteristics between and among state and federal vessels involved in collecting the data, the data base is sometimes split into state- and federally-collected data, depending on the type of analysis being conducted. Thus, a comparative trawl survey study was initiated to assess the magnitude, if any, of difference between and among vessels collecting fishery independent data through the SEAMAP.

In 1993, the R/V TOMMY MUNRO from Mississippi and the R/V VERRILL from Alabama were involved in the study. In 1994, the R/V TOMMY MUNRO and the R/V PELICAN from Louisiana were involved in the study. The vessels trawled side-by-side at designated sites in northern Gulf of Mexico waters. The following protocol was used:

- utilize time tows of 15 minutes bottom time
- adhere as close as possible to the SEAMAP gear configuration as outlined in the SEAMAP Onboard Operations Manual
- conduct trawls using an inshore/offshore transect, with tows beginning in 5 fathoms and continuing offshore to 25 fathoms, and then back inshore
- count and weigh all organisms and get length measurements for red snapper, Atlantic croaker, mackerels, and brown shrimp

Initial analysis of the data is being conducted by the National Marine Fisheries Service-Pascagoula Laboratory, and preliminary results indicate no significant differences between the R/V TOMMY MUNRO and the other two vessels. Since there were no significant differences between the MUNRO and the VERRILL, and there were no significant differences between the MUNRO and the PELICAN, it was determined that the state vessels used in the study to date are not significantly different in their catch. That being the case, the final phase of the study is to use the MUNRO as a representative for the state vessels and conduct a comparative tow survey between the MUNRO and the R/V OREGON II of the National Marine Fisheries Service to determine if there are significant differences between the catch of those two vessels. That survey was scheduled for 1995; however, weather conditions caused the cruise to be canceled, and the vessels were committed to other activities and could not be rescheduled during 1995. The final comparative tow cruise will be conducted during October 1996.

Other important issues addressed by the Data Management Subcommittee include data confidentiality, the development of the proceedings of a workshop on Geographic Information Systems (GIS), and stock assessments for fisheries.

Miscellaneous

- During the 1995 program year, the Program Coordinator attended and participated in a number of meetings of the Mississippi Wildlife Federation, a state-wide organization dedicated to conservation of natural resources. The group is often involved in issues related to marine fish species that are of recreational importance.
- The Program Coordinator attended and participated in the midyear and annual meetings of the International Association of Fish and Wildlife Agencies. That organization provides opportunities to cooperate with state and federal resource management agencies to affect federal programs and Congressional actions.
- The Program Coordinator attended and participated in several meetings of the Gulf of Mexico Program, administered by the U.S. Environmental Protection Agency, serving as a member of the Living Aquatic Resources Committee.
- The Program Coordinator attended and participated in a variety of other meetings that are relevant to achieving the tasks set forth in this Grant Agreement. Examples include meetings addressing artificial reef development and management, collection and management of fisheries data, and management of Gulf striped bass. Meetings were sponsored by such organizations as the Atlantic States Marine Fisheries Commission, the Gulf of Mexico Fishery Management Council, the American Fisheries Society, the Gulf Coast Research Laboratory, and various state agencies.

Ronald R. Lukens
Assistant Director

INTERJURISDICTIONAL FISHERIES MANAGEMENT PROGRAM

In 1995, the Gulf States Marine Fisheries Commission continued its work to coordinate and facilitate the development of gulf wide fishery management plans (FMPs) among the five Gulf States. This effort was authorized by the Interjurisdictional Fisheries (IJF) Management Act of 1986 (PL 99-659) and supported by funding from the Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS).

The IJF program continues to provide the Gulf States with the best available scientific information on interjurisdictional stocks and appropriate recommendations for management of these fisheries. This information is continually being used by the states in their respective management programs.

PROGRAM ACTIVITIES

In 1995, the IJF program focused on completion of the Striped Mullet FMP and development of a FMP for spotted seatrout. Activities under the program also included work on other important interjurisdictional fisheries. The following is a brief account of the IJF program activities in 1995.

Striped Mullet

During the first half of 1995, work on a draft of the Striped Mullet FMP continued to be slow primarily because of the inability of TTF members to devote the necessary time to development of key sections of the FMP. This problem was exacerbated by controversies in some states over the use of gill nets and other entangling nets. These controversies caused a great deal of time to be spent by TTF members working with respective state's commissions and legislatures.

In May and June 1995, the Striped Mullet TTF began to thoroughly review a completed, rough draft of the FMP. The IJF Program Coordinator and the Mullet TTF Chairman met on July 19-21, 1995 and completed the stock assessment and a status of the stocks. These data were in turn used to develop and refine potential management measures and to draft management recommendations and research and data needs. The TTF later determined that additional work was needed on the stock assessment and management sections. Following a final Striped Mullet TTF meeting on November 3, 1995, and extensive reviews and revisions, *The Striped Mullet Fishery of the Gulf of Mexico, United States: A Regional Management Plan* was completed in December 1995. Copies of the FMP are available from the Commission office.

Spotted Seatrout

Work on the Spotted Seatrout FMP proceeded slowly in 1995 primarily due to workloads on TTF members and because of the focus on completion of the Striped Mullet FMP. Drafts of Sections 3.0 (Biological Description of the Stock[s]) and 5.0 (Laws and Regulations) were completed, and a great deal of effort was expended gathering data for the stock assessment and in describing the fishery in each gulf state.

Because of geographical differences in the biology of this species and the prosecution of the fishery, a major task was to develop an approach to assessing the condition and status of stocks. In reviewing this problem, the Stock Assessment Team (SAT) decided to develop mini-assessments for each state and then attempt to combine them into regional approaches where possible. To this end, Florida has completed an assessment, and Louisiana was nearing completion of an updated assessment. Mississippi completed a three-year study of spotted seatrout resources that will be used to develop its contribution to the assessment, and Texas worked to computerize and analyze existing databases.

The TTF also agreed to expand the habitat section to more closely resemble that of FMPs being developed by the Atlantic States Marine Fisheries Commission, and also discussed the need for gathering social and economic data. Dr. Charles Adams and Dr. Stephen Thomas worked with Dr. Richard Leard to identify sources of data for the economic and sociological/anthropological sections of the FMP.

Menhaden

The 1995 revision of *The Menhaden Fishery of the Gulf of Mexico, United States: A Regional Management Plan* was received from the printer and distributed to various agencies, businesses, organizations, and individuals. Additional copies are being distributed upon request.

Stone Crab

A Profile of the Western Gulf Stone Crab, Menippe adina was received from the printer and distributed. Additional copies are being distributed upon request.

Other FMPs and Activities

In a spinoff from the Oyster FMP, Dr. Richard Leard, Mr. Ron Dugas, and Mr. Mark Berrigan developed a publication describing the various oyster resource management programs in the Gulf, and the paper at an Oyster Reef Habitat Restoration Symposium sponsored by the Virginia Institute of Marine Science, The College of William and Mary, in Williamsburg, Virginia, on April 24, 1995. The proceedings will be published in 1996.

Stock Assessment Team

The SAT discussed problems with ageing various species of fish and potential inconsistencies among research components. They agreed to initiate the development of a workshop to identify problems by species; standardize techniques for extraction, handling, and reading; and other purposes with the goal of developing a procedures manual. Further work to identify specifics of the activity will continue in 1996.

Dr. Richard L. Leard
Program Coordinator

COMMERCIAL FISHERIES INFORMATION NETWORK (ComFIN) and SOUTHEAST RECREATIONAL FISHERIES INFORMATION NETWORK [RecFIN(SE)]

The Commercial Fisheries Information Network (ComFIN) and Southeast Recreational Fisheries Information Network [RecFIN(SE)] are cooperative efforts among agencies to collect, manage, and disseminate statistical data and information on the commercial and recreational fisheries of the Southeast Region¹. The goal of the ComFIN and RecFIN(SE) is to provide sound scientific information on catch, effort, and participation that managers need to prudently conserve and manage marine commercial and recreational fisheries resources in the Region.

The need for a comprehensive program to cooperatively collect and manage statistics on marine commercial and recreational fisheries in the Region is critical. A long-standing partnership exists among fishery management organizations in the Region, which have similar or related mandates to conserve and manage living marine resources in their respective jurisdictions. Fishery management agencies in the Region recognize the need for and benefits of a cooperative program for marine commercial and recreational fisheries statistics.

In the 1980s and 1990s, state and federal fishery managers in the Region agreed there was an urgent and compelling need for coordinated collection of comprehensive data on the marine commercial and recreational fisheries resources and recommendations were made through a series of workshops and meetings. 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) which established clear intent to implement the RecFIN(SE). Upon signing the MOU, a RecFIN(SE) Committee was established. And 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 the NMFS action, the Southeast Cooperative Statistics Committee (SCSC) developed a Memorandum of Understanding (MOU) and a draft strategic plan for the ComFIN.

The scope of the ComFIN and RecFIN(SE) includes the Region's commercial and recreational fisheries for marine and estuarine species. The constituency served by the ComFIN and RecFIN(SE) are state and federal agencies in the Region concerned with conservation and management of marine commercial and recreational fisheries. Primary data users will be the MOU signatories that assess stocks, forecast trends, and monitor fishery regulations. Also benefiting from the ComFIN and RecFIN will be other agencies responsible for the conservation and management of living marine resources in the Region.

The mission of the ComFIN is to cooperatively collect, manage, and disseminate marine commercial and anadromous fishery data and information for the conservation and management of fishery resources in the Southeast Region and to support the development of an inter-regional program. The four goals of the ComFIN are:

- to plan, manage, and evaluate commercial fishery data collection program;
- to implement a commercial fishery data collection program;
- to establish and maintain commercial fishery data management system; and
- to support the development and operation of inter-regional program.

The mission of the RecFIN(SE) is to cooperatively collect, manage, and disseminate marine recreational fisheries statistical data and information for the conservation and management of fishery resources in the Region; and to support the development and operation of a national program. The four goals of the RecFIN(SE) are:

- to plan, manage, and evaluate of data collection and management activities;
- implement data collection activities;
- establish and maintain a data management system; and
- support the establishment of a national program.

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

PROGRAM ORGANIZATION

The organizational structure of the programs consists of the ComFIN and RecFIN(SE) Committee, three regional geographic subcommittees (Caribbean, Gulf of Mexico, and South Atlantic), standing and ad hoc subcommittees, technical work groups, and administrative support.

The ComFIN and RecFIN(SE) Committees, consisting of the signatories of the MOU or their designees, are responsible for planning, managing, and evaluating the program. Agencies represented by signatories to the MOU are the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, the National Park Service, the Alabama Department of Conservation and Natural Resources, the Florida Department of Environmental Protection, the Georgia Department of Natural Resources, the Louisiana Department of Wildlife and Fisheries, the Mississippi Department of Marine Resources, the North Carolina Department of Environment, Health, and Natural Resources, the Puerto Rico Department of Environmental and Natural Resources, the South Carolina Department of Natural Resources, the Texas Parks and Wildlife Department, the U.S. Virgin Islands Department of Planning and Natural Resources, the Atlantic States Marine Fisheries Commission, the Gulf States Marine Fisheries Commission, the Caribbean Fishery Management Council, the Gulf of Mexico Fishery Management Council, and the South Atlantic Fishery Management Council.

The ComFIN and RecFIN Committees are divided into three standing subcommittees representing the major geographical areas of the Region: Caribbean, Gulf, and South Atlantic. These subcommittees will be responsible for making recommendations to the Committees on the needs of these areas. Standing and ad hoc subcommittees are established as needed by the Committees to formulate administrative issues, and technical work groups are established by the Committees to carry out tasks on specific technical issues. Coordination and administrative support of the ComFIN and RecFIN(SE) is accomplished through the Gulf States Marine Fisheries Commission.

PROGRAM ACTIVITIES

The ComFIN and RecFIN(SE) are comprehensive programs comprised of coordinated data collection activities, an integrated data management and retrieval system, and procedures for information dissemination. Activities during 1995 were associated almost entirely with staffing and planning. With respect to data management and collection, ongoing marine commercial and recreational fisheries surveys were conducted by various state and federal agencies. The ComFIN and RecFIN(SE) Committees reviewed and evaluated progress towards the integration of these surveys into the respective programs.

Southeast Cooperative Statistics Committee

Major SCSC meetings were held in February and September 1995. The major issues discussed during these meetings included:

- identified tasks to be accomplished in 1995 and directed the Data Collection, Data Management, and Future Needs Work Groups to either begin or continue work on these tasks;
- developed the 1995 Operations Plan which presented the year's activities in data collection, data management, and information dissemination;
- began development of the 1996 Operations Plan;
- reviewed activities and accomplishments of 1995;
- reviewed findings of technical work groups and received recommendations from these groups for activities to be carried out during 1996;
- began compiling licensing information for marine commercial fisheries from each state and the NMFS in the Region;
- reviewed and make recommendations on TIP sampling protocols and began planning a TIP workshop;
- began the identification of non-reported sources of landings in the Region; and
- conducted a work session concerning the confidentiality of commercial fisheries data;

RecFIN(SE) Committee

Major RecFIN(SE) meetings were held in March and September 1995. The major issues discussed during these meetings included:

- identified tasks to be accomplished in 1995 and directed the Administrative Subcommittee and the Biological/Environmental, Social/Economic, and Data Base Work Groups to either begin or continue work on these tasks;
- developed the 1995 Operations Plan which presented the year's activities in data collection, data management, and information dissemination;
- began development of the 1996 Operations Plan;
- reviewed activities and accomplishments of 1995;
- completed evaluation of adequacy of current MRF programs for RecFIN and developed recommendations regarding these programs;
- reviewed findings of technical work groups, and received recommendations from these groups for activities to be carried out during 1996;
- prepared and submitted a proposal for financial assistance to support activities of the RecFIN(SE); and
- continued internal evaluation of the program and conducted and completed an external review in 1995.

Subcommittee and Work Groups

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

- The Data Collection Work Group met in January 1995 to address such issues as development of a set of minimum data elements and identification of current and future data needs. During subsequent correspondence, the group revised the list to include minimum elements necessary for general fisheries information, stock assessments, economics, and anthropology/sociology. This information was presented to the Committee for their approval and is being used in current Committee activities.

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

- The Biological/Environmental Work Group met in March 1995 to address such issues as finalization of criteria for a RecFIN metadata data base, review of metadata information, and discussion of the possibility of using licensing as a sampling framework. In addition, the Biological/Environmental Work Group, in conjunction with the Social/Economic Work Group, met in June and September 1995 (via conference calls) to develop a list of problems and issues that are associated with current MRF surveys and describe where there are gaps in survey coverage.
- The Social/Economic Work Group was involved with a number of parallel efforts regarding social and economic data needs such as development of the NMFS Fisheries Statistics Strategic Plan, identification of MRF economic data needs by the NMFS Northeast Region, and development of a social and cultural data and analysis plan for the Southeast Region. The Work Group plans to extract appropriate portions of these works into a RecFIN document describing social and economic data needs. Input will be solicited from fishery managers, economists, and social scientists to assist in developing priorities as well as modifying the QA/QC document prepared by the Biological/Environmental Work Group to incorporate social and economic data collection issues.

Coordination and Administrative Support

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

Information Dissemination

ComFIN and RecFIN(SE) Committee members and staff provided program information in 1995 via a variety of different methods such as distribution of program documents, and presentation to various groups interested in the ComFIN and RecFIN(SE).

Documents

- Southeast Cooperative Statistics Committee. 1994. *1995 Operations Plan for Cooperative Statistics Program (CSP)*. Gulf States Marine Fisheries Commission, Ocean Springs. 9 pp + appendix.
- March 1995. SCSC article in the ASMFC quarterly newsletter.
- May 1995. SCSC article in the GSMFC newsletter.
- August 1995. SCSC article in the GSMFC newsletter.
- December 1995. SCSC article in the GSMFC newsletter.
- RecFIN(SE) Committee. 1994. *1995 Operations Plan for Recreational Fisheries Information Network for the Southeastern United States RecFIN(SE)*. Gulf States Marine Fisheries Commission, Ocean Springs. 12 pp + appendix.
- March 1995. RecFIN(SE) article in the ASMFC quarterly newsletter.
- May 1995. RecFIN(SE) article in the GSMFC newsletter.
- August 1995. RecFIN(SE) article in the GSMFC newsletter.
- December 1995. RecFIN(SE) article in the GSMFC newsletter.

Presentations

- November 1995. RecFIN(SE) presentation by GSMFC staff during ASMFC Charterboat and Party boat Workshop in Annapolis, Maryland.

Other Activities

- NPS personnel periodically provided information concerning the ComFIN and RecFIN(SE) (meeting notices, available documents, etc.) to the EPA's Gulf of Mexico Program computer Bulletin Board System.

David M. Donaldson
Program Coordinator

ALABAMA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

MARINE RESOURCES DIVISION

The Marine Resources Division is responsible for management of Alabama's marine fisheries resources through research and enforcement programs. Three division facilities supported an average of 41 employees of the Administrative, Enforcement, and Fisheries Section during fiscal year 1995.

SIGNIFICANT ACCOMPLISHMENTS

- Act 95-287 creating a limited entry program in the gill net fishery was passed by the state legislature and signed into law by Governor James. The significance of this legislation was that the fishery was down-sized to those traditional resource users while providing needed fishery management tools to the department for managing the fishery resources.
- A survey and atlas of the public oyster reefs in Mobile County was conducted and published, respectively, documenting changes in both size and configuration since the last survey conducted in 1968.
- A full color brochure featuring the common fishes encountered by recreational fishermen in coastal Alabama along with a map showing the location of public offshore artificial fishing reefs was published and made available to persons holding an Alabama saltwater fishing license.
- A new water intake pumping station was installed at the Claude Peteet Mariculture Center.

BUDGET AND EXPENDITURES

A total expenditure of \$2,192,746.00 was made from the approved budget of \$2,820,456.00. Revenue of \$2,424,793.05 was made up from federal aid (23%), license fees (55%), marine gas tax (15%), and other sources (7%).

The Administrative Section expended \$616,342.05 of salaries and operational expenses for division activities, part of which was reimbursed under federal aid to fisheries programs.

Expenditures for the Enforcement Section totaled \$584,049.46, of which \$25,000.00 was reimbursed by a grant from the National Marine Fisheries Service. Other expenses for shared services and material such as utilities and gasoline were paid by the Administrative Section.

Fisheries Section expenditures were \$1,001,853.54 which consisted of funds from five federal aid programs and required state matching funds. Federal aid projects varied in state match requirements 0-25%. Included in these expenditures, in addition to the normal expenditures, were shell planting activities, a capitol outlay project at the Claude Peteet Mariculture Center, and boating access area up-keep and renovation.

This year the increase in Fisheries Section expenditures and the concomitant decrease in the Administrative Section expenditures is a reflection of a shift in administrative personnel charges to fisheries federal aid projects. This is the result of an attempt to charge out projects as accurately as possible.

SIGNIFICANT PROBLEMS AND SOLUTIONS

The lack of sufficient personnel and lack of sustained funding for purchase of necessary equipment to adequately monitor commercial and recreational fishing activities continue to be significant problems for the Enforcement and Biological Sections. Assistance from departmental enforcement officers in the Game and Fish Division and the Marine Police Division in monitoring the shrimp fishery and the roe-mullet fishery has helped tremendously, but under funding is still a major problem in updating equipment. Fisheries Section personnel are being

crossed trained to assist each other in major personnel shortage areas, but problems still exist in updating equipment and in hiring needed personnel to biologically monitor commercially and recreationally important marine fish and shellfish.

Despite significant efforts to tighten protocol and establish regulations dealing with the permitting of material for artificial reefs in the Alabama Artificial Reef General Permit Area, there is still some conflict between shrimpers and reef builders, with material from artificial reefs being trawled up outside of the General Permit area. Both the shrimp and the reef fish fisheries are important to Alabama, and the Marine Resources Division is determined to see that both remain viable. Increasing the number of public reefs constructed by the Marine Resources Division and reducing the types of materials allowed Resources Division in conjunction with the Department of Transportation provided for the placement of five bridge spans and approaches from the old Tensaw bridge into the General Permit Area. These spans will provide excellent fishing opportunities for the public, and will certainly stay with the General Permit Area over time thus having no adverse impact on the shrimping industry.

ADMINISTRATION SECTION

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

Staff for the Administration Section consisted of the Division Director, seven clerical, one custodial, and one mechanical employee for the majority of the year. Offices are maintained on Dauphin Island, Gulf Shores, Bayou La Batre, and Montgomery.

Accomplishments

A major accomplishment was in the orderly manner in which Act 95-287 was passed and implemented. The Administration Section handled all requests for license history verification, income tax qualification, and hardship applications in a timely manner.

Regulations regarding net fishing which were part of an agreement between commercial fishermen and recreational fishermen were implemented, as were regulations regarding improved dealer reporting.

The Administration Section assisted the Alabama Seafood Association's Blue Crab Subcommittee in initiating regulatory and legislative recommendations to enhance the viability and survivability of the blue crab fishery in Alabama.

Future Plans

- Legislation will be introduced to create a lifetime saltwater fishing license with price proportional to the freshwater lifetime license. Contained in the proposed legislation will be a section providing an option for senior citizens to purchase a Lifetime Saltwater Fishing License similar to that now available for freshwater senior citizen fishermen.
- The Administration Section will continue in the development of a computerized license system which was not completed in this past fiscal year.

ENFORCEMENT SECTION

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

Despite lack of sufficient personnel, worn-out and obsolete equipment, and instances involving conflict and personal danger, Marine Resources Division officers take pride and satisfaction in their service to the public.

Facilities for the Enforcement Section consist of headquarters at Dauphin Island and district offices in Bayou La Batre and Gulf Shores. There are thirteen enforcement officers in the section, seven stationed at division headquarters at Dauphin Island. There is presently one vacant position in Mobile County with additional personnel needed in both counties.

Accomplishments

Enforcement officers conducted 22,674 hours of boat and shore patrol, 19,505 boat checks, 242 seafood shop inspections, and issued 750 citations for illegal activities. The majority (64%) of the citations issued were for violations of recreational fishing laws and regulations. Violations of commercial fishing laws and regulations comprised 26% of the citations issued. Officers also issued citations for violations of boating safety, game and fish, and other state laws and regulations. Two citations were issued for violations of federal fishery laws.

A sting operation targeting the illegal sale of live bait shrimp and gamefish was conducted. The investigation, in which two Game and Fish Division covert operations officers bought illegal bait shrimp and gamefish, resulted in forty-eight charges against fourteen individuals in Mobile and Baldwin counties. The individuals were found guilty in District Court of all charges with fines ranging from \$150.00 to \$500.00 per charge. Two individuals have appealed.

A cooperative Coastal Law Enforcement Plan involving Marine Resources, Marine Police, and Game and Fish Division enforcement personnel was drafted at the direction of the commissioner. The plan was approved and implemented during the "roe-mullet" net fishing season. Preliminary reports from field officers are favorable.

Future Plans

- Develop a comprehensive, prioritized training program for all enforcement personnel.
- Review enforcement policies and procedures for consistency and uniformity.
- Review existing procedures of the division offices in responding to inquiries and complaints relating to enforcement, and assist in developing improvements where they are warranted.
- Develop mechanisms to improve public relations.
- Provide informed and timely input into proposed language of regulations to ensure that regulations can be effectively enforced.
- Improve the understandability of regulations to users.

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 are mostly funded through federal aid programs in the U.S. Departments of Commerce (National Marine Fisheries Service) and Interior (U.S. Fish and Wildlife Service). Biological programs not covered by federal aid such as fish kills, oyster management, and pollution investigation are supported by commercial and recreational license fees.

Fisheries facilities consist of the Claude Petet Mariculture Center in Gulf Shores and Marine Resources Laboratory on Dauphin Island. Personnel consisted of one Biologist V, two Biologists IV, one Biologist III, one Biologist II, five Biologist Aides III, two Biologist Aides II, five Biologist Aides I, one Data Entry Operator II, one bi-weekly laborer, and one temporary laborer.

Accomplishments

The passage of Act 95-287 by the Alabama Legislature during spring 1995, coupled with a series of meetings preceding its passage, demanded a comprehensive database on the historical finfish catch by gill net fishermen as well as licensing history of individuals involved in the gill net fishery. The Biological Section through its data management

program was able to satisfy the data required by both the law and the preceding meetings with no uncorrectable errors in the historical database. The passage of Act 95-287 in and of itself was a major accomplishment for the Marine Resources Division in that it provided for a limited entry program which allowed traditional fishermen continued access to the fishery while providing management tools to enable the division to more closely monitor the resource.

With funds provided by the Alabama Department of Economic and Community Affairs, the Biological Section surveyed the Alabama public oyster reefs in Mobile Bay and Mississippi Sound. The last survey was conducted by May 1968, and since three major hurricanes have passed through the area and four more have hit nearby in the Northern Gulf Coast, changes in the reefs were expected. The 1995 survey did show that there were some geographic changes in the reefs, but unexpectedly, changes demonstrated were positive. All of the individual reefs increased in size during this 27 year interval with the exception of Kings Bayou Reef which showed a slight reduction from 27.8 acres in 1968 to 27.0 acres in 1995. Overall, the combined reef surveys showed cumulative increases of approximately 1,000 acres.

A full color brochure depicting marine and estuarine fishes normally taken by recreational fishermen was produced. This brochure also provided a map of the Artificial Reef General Permit offshore Alabama, with all public reefs denoted on the map. The brochure also contains a narrative explaining the Alabama Artificial Reef Program.

Funds provided by the sale of oyster tags enabled the Marine Resources Division to conduct an oyster shell gathering/planting program that served both as a biological enhancement to the oyster resource as well as a positive interaction between resource users and management. The division planted 3,499.3 cubic yards of oyster shell in September 1995, all of which had been previously collected from Alabama oyster dealers.

A Blue Crab Fishery Management Profile has been produced by the Fisheries Section with the intent of following the profile with a fishery management plan. Management measures being proposed by a committee of crab fishermen belonging to the Alabama Seafood Association will be considered prior to adopting a management plan. The process of interfacing with the user groups prior to adopting management measures is the most equitable management procedure to the resource users.

Federal Aid

Wallop/Breaux. Wallop/Breaux funds are administered through the U.S. Fish and Wildlife Service. Funds used from this source by the Marine Resources Division were directed toward collecting harvest information from the Alabama charter boat fleet; spawning and larvae rearing experiments with red snapper; conducting a hooking mortality study on spotted seatrout at the mariculture center; maintaining equipment and facilities in Gulf Shores; managing the public artificial fishing reef permits issuing system in the Gulf of Mexico off Alabama; holding public meetings on making artificial reefs and in managing general permit areas for artificial reefs in the Gulf of Mexico off Alabama; and evaluating Section 404 and Section 10 U.S. Corps of Engineers permits in coastal Alabama, as well as coastal consistency permits through the Alabama Coastal Zone Management Program.

Interjurisdictional Fisheries. Federal aid funds for this program are administered by the National Marine Fisheries Service, Department of Commerce and were used this year to develop a management profile for the blue crab fishery in Alabama. The profile was completed and submitted to the National Marine Fisheries Service and will be used as a guide in the development of a Blue Crab Fishery Management Plan.

Cooperative Statistics. Federal aid funds for this program are administered by the National Marine Fisheries Service, Department of Commerce and are utilized by the Marine Resources Division to collect data on commercial shrimp, oyster, crab, and finfish landings. Additionally, information on processed seafood such as picked crab meat and biological data on fishing trips for a particular species are collected. Two Alabama port agents, a data entry operator, and a fisheries statistician are involved with the project in Mobile County. All landings are processed on a monthly basis for inclusion in Alabama's database and forwarded to the National Marine Fisheries Service.

Southeast Area Monitoring and Assessment Program (SEAMAP). Funds from this program are administered by the National Marine Fisheries Service, Department of Commerce and are utilized in Alabama for the development of a long term fishery-independent database on recreationally and commercially important marine and estuarine fishery

stocks. This project provides funds to manage the Alabama shrimp fishery and evaluate spawning success and juvenile survival for important recreational and commercial species.

Coastal Alabama Seafood Harvest (CASH). The Marine Resources Division is under a subcontract to Auburn University to provide facilities, personnel, and expertise in the development of feasible mariculture activities in Coastal Alabama. The CASH project is a three year program contracted directly to Auburn University by the National Marine Fisheries Service, the U.S. Department of Commerce, and the U.S. Department of Agriculture. Facilities at the Claude Petet Mariculture Center are used in the project in support of graduate students from Auburn University to produce finfish, shrimp, and oysters in a mariculture environment.

National Oceanic and Atmospheric Administration (NOAA) administered by Alabama Department of Economic and Community Affairs (ADECA). The Marine Resources Division secured funds through ADECA through their Coastal Zone Management Program to map the public oyster reefs in Mobile Bay and Mississippi Sound and produce an atlas detailing the public reef configuration. The last reef mapping of the public oyster reefs in Alabama was conducted in 1968.

Non-Federal Aid

Five fish kills were investigated by the Division during the fiscal year, all of which were associated with low dissolved oxygen and principally affecting menhaden.

Biological and enforcement personnel worked together to collect data at oyster checkpoints, enabling the development of sound management measures for sustaining the oyster resources. The Biological Section monitored shell pick-up and planting activities in which 3,499 cubic yards of shop shell were planted on Cedar Point Reefs and on plant areas in Portersville Bay.

Two barge groundings on the western side of Cedar Point Oyster Reef were investigated. No damage was incurred in either case because of the location of the groundings.

Two tugboats sank just north of the west end of Dauphin Island in Mississippi Sound. Biological personnel investigated and coordinated with ADEM and the U.S. Coast Guard. Response was rapid to both incidents and the associated spillage of diesel fuel was contained and cleaned up with no damage to the resource.

Meetings were held with oil company representatives periodically to discuss options for completion of various projects. Biological personnel checked areas of proposed drilling platform location and associated pipeline corridors for potential impact to oyster resources for two oil companies.

Experiments were conducted in conjunction with Western Geophysical's seismic exploration in Mississippi Sound. The experiments were designed to determine the effect of air gun blasts upon oysters. No ill effect was detected during this experiments.

Future Plans

- The Fisheries Biological Section will develop a fishery management plan for the Alabama blue crab fishery with the recommendations for strategies and regulations for management.
- Development of mariculture procedures for commercially important marine organisms is planned.
- An enhanced monthly system for obtaining commercial fish dealer landings and out of state landings from Alabama waters will be initiated.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF MARINE RESOURCES

FLORIDA MARINE RESEARCH INSTITUTE

FINFISH

Gamefish and Directed Life History Studies

During 1995, staff provided stock assessments on pompano, permit, and tripletail to the Florida Marine Fisheries Commission. We have examined almost 2,000 pompano. Otoliths and gonads have been processed from fish captured in 1995, and a comparison of east and west coast stocks is presently underway. Spawning occurs during February-April, and a maximum age of seven years is attained. Most fish caught in the commercial fishery were between 1-2 years old. Staff have collected over 750 tripletail in 1995. Otoliths and gonads are being processed to evaluate age and sexual state.

We received MARFIN funding to do black grouper research in the Florida Keys, and funding to do vermilion snapper, red porgy, and gray triggerfish research in the eastern Gulf of Mexico. One year of the two-year MARFIN black grouper life history study has been completed. We collected otoliths and gonads from 485 grouper and otoliths only from another 152 fish. Four oxytetracycline-injected grouper are being maintained alive for a period of at least one year at the Keys Marine Laboratory to validate otolith annuli. Starting in October 1995, age and reproductive structures from 79 gray triggerfish, 157 red porgies, and 138 vermilion snappers have been collected. Sizes of fish captured ranged from 256-602 mm FL for gray triggerfish, 203-387 mm FL for red porgies, and 179-334 mm FL for vermilion snapper.

Research on snook in 1995 concentrated on the mark-recapture program which furnishes population indices and mortality rates. Population abundance is unchanged on Florida's east coast, has increased in the Naples and Tampa Bay areas. A variable rate reward study was initiated on the east coast to correct for non-reporting of tags recaptured by anglers. This will allow accurate determination of exploitation rates. The manuscript "Reproductive Biology of the Common Snook *Centropomus undecimalis* (Teleostei: Centropomidae)," is in revision and nearing completion.

Bonefish research continued on specimens captured in the Florida Keys. Determinations of size-at-age, maturity schedules, spawning characteristics, and mortality rates are in progress. Age validation experiments are underway; however, results to date are not clear.

Tarpon research is nearing completion. Manuscripts are either published or are in press.

Dissemination of new information to user groups is a priority. Reports that include the latest findings and updates of stock assessments are regularly presented to the Florida Marine Fisheries Commission. Seminars are presented to fishing clubs and conservation groups.

Stock Assessment and Population Modeling of Florida's Inshore Species

During 1995, the assessment group conducted many activities concerning the Gulf's fishery stocks. Using sequential population analysis, they updated the regional status of spotted seatrout and found that spotted seatrout continued to be below the state's management objectives in all three regions. Simulations were run to evaluate many different combinations of bag limits, season closures, and size limits for the recreational sector and harvest reductions from the elimination of entangling gear and season closures for the commercial sector. The group also reviewed the assumptions and methods in the previous red drum assessment and developed models to evaluate possible effects of increasing the bag limit or of removing the closed season. Members of the group participated in the MARFIN project design to collect data on the age structure of the offshore, red drum adult segment. Other activities for Florida's Marine Fisheries Commission included a stock assessment of black drum and modeling of aggregate bag limits and amberjack species mixtures.

A major effort produced a trends report of Florida's marine resources by coast. The report summarized commercial landings and catch per trip, the National Marine Fisheries Service's recreational landings and catch per angler-hour, the catch per set of the fishery independent program, and stock assessments. A panel met several times to review and develop a consensus as to the status of each species. In addition, the report provided life history narratives for many of Florida's more important species including invertebrates such as shrimp and blue crabs.

Other activities by the assessment group during the year included coordinating the GSMFC Stock Assessment Workshop in Tallahassee. Joe Powers (NMFS) and Victor Restrepo (University of Miami) developed exercises to calculate and to apply spawning potential ratio as a management tool. Assessment members attended both the Spotted Seatrout Task Force and the Stock Assessment Task Force meetings. Members of the group participated in various Gulf of Mexico Fishery Management Council assessment panels including the Gulf Council's Socioeconomic Panel meeting. Stock assessment and modeling was included in the American Fisheries Society's review of Florida's marine fishery programs at the Department's request.

Baitfish

The adult life history studies on the Atlantic thread herring and scaled sardine were completed. Manuscripts are in preparation describing life history parameters of these species in Florida. The information on size/age structure, growth rates, and reproduction and spawning frequency generated from these studies have been used by the Florida Marine Fisheries Commission (FMFC) in developing management regulations. We are currently sampling round scad (*Decapterus punctatus*) populations along the west coast of Florida for age/growth and reproductive information.

We conducted a second acoustic/trawl survey along the west coast of Florida to determine spatial distribution and abundance of important baitfish species such as Spanish sardine, Atlantic thread herring, round scad, and scaled sardine. The results of this survey have been used by the FMFC in the development of catch quotas for Spanish sardine in Florida.

Mullet

The mullet assessment was updated using the fishery-independent adult and juvenile monitoring data collected during September-January and February-April periods in three major estuaries along the east and west coasts of Florida. The results of these studies along with fishery-dependent catch and effort statistics were used to evaluate the impact of the existing management regulations on fishing effort and the spawning stock biomass.

BIVALVE FISHERIES RESEARCH

Bay scallop research efforts continue to be directed towards monitoring the effects of the 1995 harvest revisions on adult scallop abundance. Adult abundance monitoring was continued in Pine Island Sound, Anclote Estuary, Homosassa, Steinhatchee, St. Joseph Bay, and St. Andrew Bay/Sound, and was initiated in the St. Marks estuary and Pensacola Bay. Research efforts in the Florida panhandle were expanded to include recruitment monitoring and data collection for shell and soft-tissue growth curves. EPA funding supported efforts to monitor the success of bay scallop reintroductions in Tampa Bay. A study of mortality patterns in fished (Steinhatchee) and unfished (Anclote Estuary) was initiated and is ongoing. A workshop was convened to discuss the status and management of bay scallops in Florida, and a status update will be presented to the FMFC during June, 1996. Two publications concerning systematic relationships among bay scallop populations in Florida and throughout the United States are in press.

The hard clam aquaculture industry continues to develop in Florida. GIS-based resource mapping techniques are being developed in an ongoing effort to assist aquaculture industry members in siting leases in areas of suitable sediment and water quality to maximize the likelihood of success of the venture and to minimize conflicts with other user groups. Analysis and publication of previously collected data continues. Two manuscripts concerning genotype-growth interactions were accepted for publication, and a manuscript concerning growth seasonality among genotype classes was submitted.

Calico scallop research efforts are dormant. A proposal to develop calico scallop health indices was submitted to the National Marine Fisheries Service but was not funded. The status of the calico scallop fishery in Florida will continue to be monitored, but no state research efforts are planned at this time.

CRUSTACEAN FISHERIES RESEARCH

In the Crustacean Fisheries research program, staff conduct fisheries-oriented biological and ecological studies on crustacean species of economic importance to Florida. During 1995, a manuscript describing a combined genetic/statistical method for distinguishing the two species of stone crabs in the Gulf of Mexico from each other and from their hybrids was accepted for publication. In collaboration with researchers from Auburn University, a manuscript describing the physiological effects of salinity and temperature on adult stone crabs was accepted for publication. Manuscripts in preparation include one describing the population biology and population structure of stone crabs in northwest Florida waters and one demonstrating species-level differences between two color morphs of the deep-sea lobsterette. Staff continued field studies of the population biology of stone crabs in Tampa Bay and of the physiological effects of temperature and salinity stress on juvenile stone crabs. Staff provided the FMFC with information on the degradation time of pressure-treated wooden slats used in building stone crab traps and on bycatch in stone crab traps. Staff also presented information concerning the configuration of blue crab traps to the FMFC. Staff participated in workshops being conducted statewide for the purpose of defining shrimping zones in the nearshore waters of Florida. Staff are working with the FMRI CAMRA group to prepare maps integrating nearshore habitat and allowed shrimping zones for management of the shrimp fishery. Staff also collaborated with scientists from Florida State University on a preliminary study of the effects of bycatch excluder devices on the quantity of bycatch and shrimp harvest. The results of all work are provided to appropriate fishery management agencies and presented routinely at scientific meetings and other public forums. Details on the lobster research is included in the South Florida Regional Laboratory portion of this report.

FISHERIES GENETICS RESEARCH

The Fisheries Genetics research program has two principal directions: (1) genetic stock identification of economically important species of fish and invertebrates, (2) monitoring the effects of FMRI SERF hatchery operations on the genetic variability of wild redfish populations and monitoring the success of SERF stock restoration efforts. During 1995, manuscripts describing the genetic stock structure of common snook and genotype-specific relationships between habitat and growth rate in hard clams were accepted for publication. A manuscript describing the genetic stock structure of Atlantic tarpon is in preparation. Studies of the genetic stock structure of blue crabs and stone crabs continued. Staff are working with scientists at the Field Museum of Chicago to learn state-of-the-art methods of morphological analysis for stock identification to complement genetic stock identification studies. Staff continued genetic stock identification studies of redfish and snook and initiated genetic stock identification studies of seatrout, sheepshead, and shrimp.

A manuscript examining the theoretical effects of releasing hatchery-reared fish into the wild on the effective population size of fish populations was prepared. Staff completed the genetic characterization of all redfish hatchery broods reared at the SERF hatchery during 1994 and obtained 7-locus genotypes of all hatchery broodstock that are not still being used as broodstock at the hatchery. Staff also completed preliminary development of a genetic tag that can be used to assess the percentage of hatchery-reared fish in samples obtained from areas where stock enhancement or restoration is ongoing. The results of all work is provided to appropriate fishery management agencies and routinely presented at scientific meetings and other public forums.

RESOURCE HEALTH AND ASSESSMENT

Faunal assessment

The Florida Bay Faunal Assessment Program included research in three subject areas in 1995: (1) mapping benthic faunal assemblages throughout the bay, (2) the use of tidal creeks in the Everglades by Florida Bay fishes, and (3) the effects of environmental changes during the late 1980s on the resident fishes and decapods of seagrass-covered mud banks. Maps of benthic faunal assemblages were produced based on results of 1994 sampling at 101 sites, and subsets of the original sites were sampled during summer and fall of 1995 to assess impacts of shifting salinity regimes.

Exploratory sampling employing several types of sampling gear and methodology was conducted in creek systems connecting the freshwater Everglades to Florida Bay. Fishes utilizing these creeks were documented along with preliminary information on diel patterns of movement by these fishes. Sampling of fish and decapod crustacean communities of seagrass-covered mud banks continued during summer and fall of 1995. Presentations were given in 1995 at the Annual Meeting of the American Fisheries Society (seagrass-associated fauna) and at the Florida Bay Science Conference (seagrass-associated fauna and faunal assemblages and benthic assemblages using mollusks to assess faunal change).

Several manuscripts based wholly or in part on results of the Little Manatee River Fish Community Survey are in preparation or in review. Manuscript topics include (1) the relationship of fish communities to seagrass and algal cover and (2) the life histories and ecology of common snook, striped and fantail mullet, and bay anchovies.

A guide for the identification of colomastigid amphipod crustaceans of the eastern Gulf of Mexico was published and distributed for public use. Similar guides for identification of lysianassoidean amphipods and trochid gastropods of the Gulf of Mexico are undergoing final revisions after peer review. A draft of a field guide to the fishes of the family Sparidae in Florida waters has been field-tested and is in final revision for publication. Several other guides to identify Florida fishes and invertebrates are in preparation as time permits.

The East Coast Benthic Faunal Mapping Study sampled over 400 stations with trawls and dredges between 1983 and 1987. All crustaceans, echinoderms, and mollusks from the samples have been identified and enumerated, and the data for these groups have been computerized and verified. All computer data files for mollusks and crustaceans were submitted to the SEAMAP data manager last year, and computerized data files for echinoderms are now being submitted.

The Hard-Bottom Mapping Study funded by SEAMAP was initiated in Florida during February 1995 in cooperation with the other southeastern Atlantic states. The study, originally begun in South Carolina and Georgia in 1993 and continued in North Carolina during 1994, is designed to acquire data of various accuracies from a variety of sources, to computerize and manipulate that data in three relational computer files, and to use that data to electronically map locations of hard bottom, possible hard bottom, and absence of hard bottom. The study area in Florida extends from Jupiter Inlet north to the Florida-Georgia border in depths of 0-200 m. All available data that we planned to acquire, except for data from Harbor Branch Oceanographic Institution, Inc., have been entered on computer files and are ready to be mapped. Harbor Branch data remaining to be acquired include submersible data, side scan sonar data, and dredge and trawl data, which, depending upon funding, we plan to acquire this year. The SEAMAP Reef Fish Assessment Program was discontinued this year because of insufficient funding.

The Gulf of Mexico Ichthyoplankton Survey was initiated in 1982. The Institute is the designated specimen repository for this program, which is wholly funded by SEAMAP. Thus far, more than 162,000 lots of larval fishes have been archived. Two cruises have been successfully completed this year. Samples collected during 1994 were received from the sorting center, and data are being entered into computer files. Backlogged neuston specimens from 1986 have been received from the sorting center, and the data are being entered into computer files. All environmental data collected to date have been archived in the NOAA database management system.

EMAP (Environmental Monitoring and Assessment Program - Estuaries)

A regional estuarine monitoring project was conducted in the Indian River Lagoon and estuaries on the east coast of Florida as part of the EPA Estuarine Environmental Monitoring and Assessment Program. Sampling sites were determined through randomization within a systematic hexagonal grid. In August 1994, a total of nineteen stations were sampled, twelve of which occurred in the Indian River Lagoon. In August 1995, nineteen additional stations were sampled with twelve occurring in the Indian River Lagoon. Samples were taken to assess water quality (both instantaneous and continually for 24 hours), sediment composition, contaminant burden and toxicity, benthic infaunal community structure, fish assemblage, and fish pathology. These data will be used in combination with similar programs in North Carolina and South Carolina to assess the condition of estuaries in the Carolinian Province.

A research component of EMAP was undertaken on the east coast of Florida to develop an environmental stress index using parasites of fish. Complete necropsies, including microscopic evaluation of all organs, were performed on 194 silver perch collected from 19 sites to determine parasite densities and diversities. The parasite information has been

compared with water and sediment contamination data and benthic faunal data to investigate the feasibility of developing a cost-effective, environmental stress index using parasites of fish as response (biotic condition) indicators.

CORAL REEF AND HARDGROUND MONITORING AND ASSESSMENT

During the past year, monitoring continued at all permanent stations for three reef sites at Dry Tortugas National Park. We also continued to monitor a transplant experiment at the Mavro Vetric grounding (1989) site. The transplant procedure (1991) was successful for most stony corals and smaller octocorals and sponges. Larger octocoral colonies were dislodged by storm activity, and a storm in March 1993 excavated the control and one experimental site. The hypothesis that transplanting selected benthic taxa (stony corals, octocorals, sponges, and algae) would facilitate recruitment and recovery within and adjacent to the transplants has not been supported by the monitoring data to date. Analyses for 1995 sampling are incomplete; however, natural recruitment appears to have increased since 1994.

Field work was initiated on the Florida Keys National Marine Sanctuary Coral/hardbottom monitoring project funded by EPA in September 1994. Sampling sites were randomly selected from EMAP grids throughout the research area. Monitoring stations were installed at 41 of 42 reef sites within 5 of the 9 water quality segments. These included 23 stations among offshore reefs, 10 at patch reefs and 9 at hardbottom habitats. Methods for video and supplemental data collection were designed, developed, and tested. Methods of video image analysis were reviewed and tested. Stations will be sampled annually to document relative stability or change in the habitats sampled.

Under our supervision, a contractor reattached 588 corals on the Firat grounding site off Broward County. A new technology using non-toxic epoxy cement for efficiently reattaching corals to the reef is considered a breakthrough in methodology. A plan was developed to monitor reattachment success and recruitment at this grounding site. RFP's were solicited and a contractor was selected. We are also providing expertise in litigation in the Jacquelyn L. Columbus Iselin, Sea Land Atlantic, and SSN Memphis grounding cases.

Surveys for live rock aquaculture leases on state submerged lands were conducted in the Florida Keys and off the Tampa Bay area during summer 1995. The first Florida Keys lease was executed late in 1995 for a site near Marathon. Recommendations for a lease site off Tavernier were also submitted.

Aquatic Health

During 1995 an initial parasite survey of spotted seatrout was completed. Surveys of Gulf flounder, sheepshead, Spanish mackerel, and mangrove snapper were also initiated. Posters about the fish kill hotline were posted at boat ramps in the Tampa Bay area to solicit information from the public on fish kills, abnormalities, or disease conditions. An 800 telephone number was activated to handle calls. An extensive hardhead catfish kill was actively investigated in the fall.

Our public outreach efforts were intensified during the year. Charter boat captains were surveyed to determine their concerns about the health of gamefish in Florida waters, and school groups were addressed. A symposium entitled "Florida Aquatic Resources Health" was organized for the 1995 annual meeting of the American Fisheries Society and emphasized the health of Florida's aquatic resources. Presentations given at this meeting were investigation methods for causes of fish kills in the Tampa Bay region; tropical reef fish mortalities: what is the role of microalgal toxins; and health indicators of Florida marine fish.

The EPA Gulf of Mexico program continued in the coordination of a Gulf-wide Aquatic Mortality Response Network (GMNET). Three organizational meetings with Gulf States and federal representatives were held to discuss response protocol and public outreach efforts. A mock fish kill was held in Texas to share investigative methods and techniques and establish minimum field requirements for a centralized database. Development of such a database will allow aquatic health scientists to effectively monitor and research disease and mortality events in the Gulf of Mexico.

Investigations of the marine slime mold *Labyrinthula*, a potential cause of seagrass die-off in Florida Bay were initiated. A total of 19,795 blades from 6,164 shoots of seagrass were evaluated for lesion cover and those with lesions examined microscopically for *Labyrinthula*. Heavy lesion cover was documented in basins where extensive seagrass die-off has been documented. Studies to characterize and determine the pathogenicity of the *Labyrinthula* species found

in Florida Bay have begun. Culture isolates from 15 sites and initial scanning electron micrograph studies have tentatively identified at least three different morphological types of *Labyrinthula* in Florida Bay. A poster presentation was given at the Florida Bay Science Conference (Resource health issues in Florida Bay: linking disease and mortalities).

Habitat assessment and restoration

Projects in this program are designed to assess, enhance, or restore critical fisheries habitats such as seagrass beds, saltmarsh communities, and mangrove stands. Current assessment projects focus on Florida Bay mangrove and seagrass communities, seagrass habitat loss and degradation, and techniques to measure stress in seagrasses. Restoration activities include development of seagrass transplanting techniques and experimental facilities at the Stock Enhancement Research Facility at Port Manatee.

The Florida Bay fisheries habitat assessment program (FHAP) continues and has produced a series of maps showing changes in seagrass distribution and abundance. The multi-tiered seagrass assessment used in FHAP has been extended to include the Florida Keys Marine Sanctuary as well as Florida Bay. Seagrass loss is continuing in some areas of Florida Bay. Under a cooperative agreement with Everglades National Park, changes in mangrove communities (recent die-off and longer-term trends) are being assessed. New mangrove die-off, although smaller in area than in previous years, occurred during fall 1995 on several islands in the central portion of Florida Bay. Presentations were given at the Florida Bay Science Conference (FDEP's FHAP: an assessment of macrophyte distribution and abundance on a Florida Bay-wide scale; mangrove mortality in Florida Bay).

Several projects are currently assessing the effects of seagrass habitat loss and degradation. Light requirements of turtle grass and shoal grass are being studied in laboratory mesocosms and field experiments conducted in collaboration with Dauphin Island (Alabama) Sea Lab researchers. FMRI scientists and staff of the Southwest Florida Water Management District are working in Charlotte Harbor to determine whether seagrasses are more sensitive barometers (eco-indicators) of watershed nutrient loading than more traditional water quality measures. A second goal of both projects is to develop integrative measures of stress which can be used to assess water quality and the health of seagrass communities throughout the Gulf of Mexico. Impacts of seagrass loss on animal habitat are being investigated in projects examining the effect of seagrass patch size on animal abundance and effects of habitat alteration by prop scars on juvenile pinfish and spotted seatrout.

Cost-effective and ecologically-sound techniques for habitat restoration are also being developed for seagrasses and salt marshes. FMRI scientists have recently completed a research project testing the application of a biotechnologically-based bioassay approach to seagrass bed restoration. Clonally-propagated *Ruppia maritima* (Widgeon Grass) produced by an *in vitro* micropropagation procedure developed at FMRI was used to make standardized planting units using a newly-developed transplanting technique, also developed at FMRI. The standardized planting units, based on ballasted, biodegradable cotton bags, were used to assess site suitability and transplant performance at a number of potential seagrass restoration sites in the Tampa and Sarasota Bay areas. The rationale behind using a biotechnological approach to coastal habitat restoration is to provide ecologically (*i.e.*, non-destructive) and economically sound alternatives for habitat restoration projects. Development of propagation procedures for the other seagrasses is currently underway.

Saltmarsh restoration efforts in St. Joseph's Bay, Florida continue. Test plantings of four different varieties of smooth cordgrass survived Hurricane Opal. However, die-off and erosion from Hurricanes Allison and Opal have caused additional marsh loss this year.

FISHERIES STATISTICS

Fisheries Independent Monitoring Program

Fisheries independent monitoring of fishes continues in the Tampa Bay, Charlotte Harbor, Indian River Lagoon, Florida Bay, and Fort Walton Beach areas. The Cedar Key area has recently been added and preliminary work is being completed. The program was designed to collect status and trends information on recreational fishes from Florida's estuaries. The program uses a systematic sampling strategy to collect fish free from the biases associated with collecting

data from recreational and commercial fisheries. Data has been used for stock assessment for mullet, red drum, spotted seatrout, and sheepshead. The program has two major components. One component monitors relative abundance of juvenile fishes and is used to create recruitment indices. The other component of the program, adult monitoring, is current being designed. Both programs will be used to help monitor the status of Florida's estuarine fish stocks. Additionally, staff in this program have been involved in the federally-run EMAP Program, the Mercury Concentration in Fish Program, and the Recreational Survey and Angler Interview programs.

Commercial Landings Statistics

Information on the commercial harvest of fish and invertebrates (including marine life and live rock used in the aquarium trade) is reported by wholesale and retail dealers to the Florida Marine Fisheries Information System. Approximately 400,000 trip tickets containing information on catch, gear, time and area fished, price, and commercial fishing licenses are reported annually by nearly 1,300 dealers under the mandatory reporting rules. These data are used in stock assessments, quota monitoring, sampling program design, summaries of landings and trips by species, qualification of fishermen for state and federal license endorsements and permits, and determination of participation in fisheries. These data were used to help qualify Florida fishermen for red snapper federal permits in 1992-1993 and 1994-1995 for an analysis of fishermen and dealers affected by the amendment which places limits on marine net fishing in Florida waters (the "net ban" amendment) to qualify fishermen for net buy-back and unemployment assistance after the constitutional amendment became effective on July 1, 1995, as well as for numerous analyses of landings, effort, and gears used in a wide spectrum of Florida fisheries which were completed during 1995. Many of these data are incorporated into state and federal fishery management plans and stock assessments.

Biostatistical Sampling

Presently, this cooperative state/federal program's staff obtain fish and invertebrate species length-frequency measurements and characteristics (gears used, duration, effort, area fished, etc.) directly from commercial fishing trips. Samplers are located in St. Petersburg, Port Charlotte, Marathon, Melbourne, Cedar Key, Jacksonville, and Fort Walton Beach. This program provides otoliths and otolith processing used for age-determination and age-length regression keys for some species (*e.g.*, spotted seatrout, sheepshead) currently undergoing stock assessment at the FMRI. Additionally, staff in this program have participated in the east coast gill net observer trip sampling, initial characterization of northeast Florida fisheries with significant weakfish and silver seatrout catches in response to the FMFC/Atlantic States Marine Fisheries commission management needs, mercury (in fish) sampling program, and measurement of more than 235,000 fish from 3,347 trip interviews over the last 4 years.

Recreational Surveys - License Monitoring and Statistics

Information on marine recreational fishing in spreadsheet format has been provided to requestors since 1989. Most recently, it was summarized in a report on Florida's inshore and nearshore species originally prepared for the FMFC. This report has been provided to many individuals and groups interested in comparing fisheries landings and trends over the last decade. The license databases have been provided to many requestors. Many groups have used these data for mailing lists, various surveys, licensing, management issues, and other purposes. The implementation of a DEP recreational fishing survey began in July 1995 and is continuing in the Tampa Bay area. This pilot project uses a combination of aerial, boat creel, shore creel, and access point (boat ramp) surveys to estimate catch and effort of marine fish and shellfish.

Harmful Algal Blooms and Plankton Dynamics

Persistent microalgal blooms have occurred in the western and central portions of Florida Bay since 1991 and are dominated by pico- and ultraplankton consisting of blue-green algae (cyanobacteria), diatoms, and flagellates. The abundance of these pigmented algae contributes to extensive surface water discoloration, which ranges from yellow-green to brown. Resuspended carbonate sediments and bottom organic material can add to the discoloration and turbidity. Prior to persistent microalgal blooms, an extensive seagrass die-off occurred in Florida Bay and seagrass decline continued concurrent with the blooms. In addition, sponge mortalities that became evident in late 1992 have been circumstantially linked to the occurrence and distribution of blooms. Aerial surveys are conducted monthly to determine the extent of discolored patches and to map their distribution and movement over time intervals. Fixed and incidental

stations are sampled monthly for physical-chemical and biological variables. The groundtruth data have a statistical correlation with aerial observations of water mass color. Although blue-green algae can dominate numerically, diatoms can often dominate by cell volume. Maximum surface chlorophyll *a* values have reached 40 μg per liter, and median inorganic seston loads have reached almost 9 mg per liter. The planktonic and benthic microalgae of Florida Bay are diverse and represent over 220 taxa. As in many Florida bays and coastal areas, benthic microalgal biomass as chlorophyll *a*, and primary production can exceed the water column biomass and production. Over 2,000 nutrient enrichment bioassay tests suggest that the nutrient limitation of the phytoplankton reflects the complicated morphometry of the whole basin offering a mosaic of limitation segmenting the isolated eastern basin, heavily impacted mid-central basin, and shelf influenced western area. Primary production measurements varied directly with the biomass and consistently showed high light limitation throughout the year. The ultimate questions become (1) does the change in component primary production (seagrass to phytoplankton based) support secondary production and energy flow within this subsystem of South Florida and has the subsystem successfully adapted to changing trophic structure and couplings, or (2) has the change decreased subsystem efficiency, reduced diversity, and increased subsystem decline. Presentations were given at the Florida Bay Science Conference (microalgae of Florida Bay; phytoplankton dynamics studies in Florida Bay).

The red tide that started in 1994 continues. The last red tide of this duration off the west coast of Florida was in 1953-1955; it lasted 18 months and was intense for 15 months. This 1994-1996 red tide followed the only year (1993) that red tide was not recorded between 1975 and 1995, although there was an extension of the 1992 red tide into mid-January of 1993. The current red tide started in September 1994 around Charlotte Harbor, and by the end of the month the boundary was up to Tampa Bay. In January-February 1995, dead fish were observed between Cape Romano and the Keys. There was about a two month hiatus inshore, and then in April, red tide was again noted around Boca Grande and extended through to Tarpon Springs in May. It gradually decreased during fall, and in January 1996, the causative organism, *Gymnodinium breve*, was at background levels. In late January 1996, however, it again impacted inshore waters along the west coast of Florida and caused fish kills that continued into February. Red tides are initiated offshore between 10 and 40 miles, and they can reinoculate inshore waters. In August 1995, a *G. breve* red tide was detected off the Florida Panhandle from Panama City to Cape San Blas and lasted in that area for several months. North Florida is typically a low risk area with <4 occurrences between 1975 and 1995. The highest risk area is from Clearwater to Sanibel from offshore to inshore waters. The economic and resource losses have not been calculated. There are some possible approaches to assess impacts such as reduced number of recreational fishing trips, economic loss due to shellfish growing area closures, and pre-fishery recruit declines using subsequent years fisheries dependent and fisheries independent data. The problem with the latter will be in separating a red tide disturbance from other natural disturbances or fluctuations in population size. A presentation was given at the 1995 annual meeting of the American Fisheries Society in the "Florida Aquatic Resources Health" symposium (effects of microalgae on marine fisheries).

Preliminary studies of the potential toxic effects of the blue-green alga *Synechococcus* on various organisms in Florida Bay have been initiated. *Synechococcus* has been linked to extensive sponge die-offs in Florida Bay. Initial feeding trials with *Synechococcus* and the mussel *Brachiodontes* have been conducted. Further studies with fish and seagrass are planned.

SOUTH FLORIDA REGIONAL LABORATORY

The spiny lobster research program has established monitoring programs to elucidate trends in harvest and other important fishery components for all three groups currently harvesting spiny lobster. Additionally, research is conducted on numerous aspects of juvenile lobster ecology aimed at relating recruitment fluctuation and changing environment conditions to future harvest. The recent juvenile lobster work has focussed on evaluating seagrass as a compensatory habitat in light of the loss of hard bottom habitat caused by the changes in the Florida Bay ecosystem. During the 1994-1995 fishing season, we completed 177 onboard surveys and received 300 mail surveys from the commercial fishermen who own over 100 trap certificates. Total commercial harvest was 7.2 million pounds. Over 2,000 recreational surveys were returned. The surveys indicate that 370,000 pounds of lobster were landed in the special two-day sport season, and 1.3 million pounds were harvested in the first month of the regular lobster season. Estimates for the 1995-96 fishing season indicate that commercial landings may approach the 7.2 million pounds harvested last season, another good year. The third group in the fishery are holders of the special recreational crawfish license, and in the 1994-95 season they were required to report their landings. Landings for these 492 license holders were approximately 68,440 pounds during the entire season.

The south Florida queen conch spawning stock remained fairly stable at 5,000 to 10,000 individuals. Regionally, the Lower Keys increased, the Middle Keys decreased, and the Upper Keys varied little. New nursery culture protocols and systems were implemented which included regular culling of juveniles and 98% shading. These modifications increased juvenile growth dramatically so that growth in high-density cultures now approximates that in the wild. A heating system was installed to prevent mortality during the winter. A study designed to determine the temporal factors affecting survival of hatchery-reared outplants was completed. Winter releases had significantly better survival than summer releases, and the approaching new moon was generally more favorable. Additionally, juveniles planted in densities of 1/m² had significantly higher mortality than 0.25m² or 0.10/m². A total of 1,344 conch were released during 1995. Research in 1996 will focus on improved juvenile culture systems, an expanded ozone control system, and habitat suitability studies for released juveniles. Additionally, we will examine histologically conch transplanted from the nearshore non-spawning population to the offshore spawning aggregations and vice versa to examine spawning deficits in the nearshore population. We will continue to monitor the spawning stocks and continue with our rehabilitation program.

FISHERIES STOCK ENHANCEMENT

The Fisheries Stock Enhancement Program began its eleventh year July 1, 1995. Efforts to restore red drum (*Sciaenops ocellatus*) in Biscayne Bay continued through 1995. This was the fifth year of this program which is being conducted in cooperation with the University of Miami (UM), Florida International University (FIU), and the Dade Environmental Resource Management (DERM). Contracts with UM and FIU for grow out, tagging, and release of red drum produced by the Port Manatee Stock Enhancement Research Facility (SERF) continued through the year. Contracts with UM for both fisheries-dependent and -independent assessment of red drum restoration efforts also continued through 1995.

The cooperative enhancement and assessment program targeting common snook (*Centropomus undecimalis*), which began July 1, 1994 between Florida Department of Environmental Protection (FDEP), Mote Marine Laboratory (MML), Harbor Branch Oceanographic Institution (HBOI), and the University of Florida Whitney Marine Laboratory continued through 1995. This program was originally scheduled to run for a minimum of three years. However, funding from Mr. William R. Mote will not be provided for the third year (July 1996-June 1997) or beyond.

Several improvements to the SERF were completed in 1995. Bird netting was suspended over four one-acre ponds and netting was replaced on two quarter-acre ponds. Reservoir and treatment tanks were purchased for an ozone water treatment system. This automated system, when completed in 1996, will have the capacity to disinfect 50,000 gallons of raw seawater per day. Electricity to power mechanical aerators was added to the six quarter-acre ponds. A new high-capacity, 13-tank incubation system with ultraviolet and biological filtration was completed and tested using snook eggs. Three 2,200-gallon recirculating holding tanks were added in the hatchery building to provide short-term holding capability for fingerlings and broodstock. A diesel-powered truck was fitted with a 1,000-gallon tank for transport of live fish.

Health monitoring of cultured red drum at the Stock Enhancement Research Facility continued. Bacterial isolates recovered from red drum are being studied to reduce mortality when these fish are held in captivity.

Hatchery Operations

Fall 1994 Production:

Five tanks of Indian River broodstock were used for the fall 1994 red drum production. Three females and three males were used in each tank. Approximately 225,014,400 eggs were spawned between July and December 1994 by the fifteen females. Some of the excess eggs were shipped to the University of Florida's Whitney Marine Lab (318,000) and to the UM (30,000).

Fourteen one-acre ponds were stocked with a total of 2,383,399 two-day-old red drum fry for phase I production. The total fall 1994 phase I red drum production was 773,341 fingerlings (32.4% survival). Of these, 399,191 phase I fingerlings were transported and released in Biscayne Bay. The remaining phase I fish were transferred to UM (68,153), FIU (25,003), or into SERF ponds (194,168) for phase II/III grow out.

The six quarter-acre ponds were stocked thirteen times with a total of 194,168 phase I fish. A total of 187,394 phase II fingerlings were harvested from both one-acre and quarter-acre ponds and 113,734 of these were tagged with binary coded-wire tags (BCWT) and released in Biscayne Bay. Additionally, 9,099 phase II red drum were transferred to UM and 13,621 phase II red drum were transferred to FIU. Two thousand eleven (2,011) internal-anchor-tagged phase III red drum fingerlings were released into Biscayne Bay. Spring 1995 red drum production was canceled so that snook research could be initiated during the spring and summer of 1995.

Fall 1995 Production:

Eighteen Indian River red drum brood fish, divided between three environmentally-controlled rooms, were photothermally-conditioned to induce egg production for the fall 1995 season. Seventeen red drum brood fish were maintained in a one-acre pond for ambient conditioning until July, 1995 when three pairs were transferred to a fourth conditioning tank. The fall 1995 total red drum egg production was 95,430,000 eggs.

Three pair of red drum broodstock were loaned to the University of Miami (UM) for production of red drum eggs for commercial aquaculture in Florida.

Ten one-acre ponds were stocked with 1,678,782 two-day-old red drum fry from nine pair of brood fish. By December 31, 1995, six of these ponds were harvested producing 481,586 (58.4%) phase I fingerlings. Of these, 36,679 were released at the Oleta River State Recreation Area for assessment by the University of Miami.

Six quarter-acre and four one-acre ponds were stocked with 395,754 phase I fingerlings for phase II grow out, 32,168 phase I fingerlings were transferred to the UM for grow out and 36,760 phase I fingerlings were transferred to FIU for grow out.

A total of 38,062 phase II red drum fingerlings were harvested, binary coded-wire tagged, and released by the end of December 1995.

Snook Propagation Research:

The Snook Project renewed a vital area of investigation as a result of financial support provided by Mr. William R. Mote and matching funds from the FDEP. The snook program is design to improve broodstock spawning methods and larval rearing techniques. Broodstock research includes comparison of different hormones for inducing ovulation in females, specifically a hormone derived from human females called human chorionic gonadotrophin (HCG) and other hormones produced in the brain which are called gonadotropin releasing hormones (GnRH). Both types of hormones were used to induce ovulation in snook during summer 1995. It was also demonstrated that much lower doses of HCG, than were used in the past, were still effective.

One hundred thirty eight five-year-old hatchery-reared snook were maintained in a 31,000-gallon recirculating system until July 1995 when they were transferred to two quarter-acre ponds. These snook are currently being used for a study of natural sex reversal and external tag retention. Three snook have sex-reversed to females.

One hundred adult snook from Tampa Bay were maintained during the spring and summer of 1995 for a pond maturation study. Forty wild snook broodstock, in four conditioning rooms, were used in a photothermal conditioning study which began in October 1995.

The first release of several hundred hatchery-reared and tagged snook is planned for the spring 1996. Both fishery-independent and fishery-dependent assessment of survival will follow. This release will be a significant milestone in the Snook Project. Approximately 1,100 phase I snook were transferred from HBOI and MML to SERF for tag retention and grow out studies. Two 30-day BCWT studies have had 100% retention of the tag.

A great deal of culture research remains. New methods must be developed and refined so that more larvae survive through early development and reach the juvenile stage. High levels of production are vital to support a stock enhancement program. Problems with high larval mortality are not unique to snook; they are also common with many other saltwater fish in culture. However, the successful culture and stock enhancement program underway in

Biscayne Bay using red drum has demonstrated that culture and enhancement of saltwater species is possible once technical and research limitations are overcome.

Hatchery Fish Health

The goal of the Fish Health Program at SERF is to ensure that cultured fish are produced efficiently (*i.e.*, with minimal losses due to disease and mortality) and to ensure that they are healthy before being released into state waters. This goal is being achieved by minimizing the stress associated with harvest, handling, tagging, transport, and anesthesia, as well as by ongoing refinement of management and husbandry. Losses due to adverse environmental conditions and epizootic diseases are minimized by an integrated and comprehensive disease-monitoring program adapted to both tank and pond culture.

Specific methods for disease monitoring and treatment have been (or are being) developed for all cultured fish life-history stages including broodstock, eggs, larvae, and various juvenile stages. Diagnostic evaluations are based on clinical signs (including behavior) and necropsy results. A full in-house clinical evaluation may include microphotography, parasitology, bacteriology, electron microscopy, and histopathology. Consultation, treatment advice, and fish-health training is provided to SERF culture personnel. Limited diagnostic support, as well as treatment advice, has been made available to contractors.

Outside diagnostic support, as well as health certification of fish prior to release, is provided by the Florida Department of Agriculture and Consumer Services (FDACS) lab in Kissimmee. Veterinary support, in the form of prescriptions, medications, and supplies, is provided by Dr. Hank Stoddard (Shamrock Veterinary Clinic, Cross City, FL).

Control for all of the most serious parasites of red drum and common snook has been achieved using experimentally-developed treatments. We now have effective control measures for the protozoans *Amyloodinium cf. ocellatum*, *Cryptocaryon irritans*, and *Ambiphrya* sp., as well as the copepod *Caligus elongatus* and monogenetic trematode *Rhabdosynochus rhabdosynochus*. Control of bacterial infections has been less successful, particularly after effective antibiotics were removed from the market by the FDA. Losses of both red drum and snook to opportunistic bacterial infections, particularly *Vibrio* sp., over the past year have been significant.

Emphasis has been placed on the prevention of disease through maintenance of the best possible environmental conditions and superior husbandry, rather than depending on chemical treatments. Use of chemical treatments is avoided whenever possible in favor of "environmentally friendly" treatments, such as freshwater dips, to remove parasites. Laboratory and production-level testing of new antibiotics, anesthetics, and other medications for safety and efficacy is ongoing. Details of this research are being published in peer-reviewed journals.

Assessment

Assessment is through two contracts with the UM, one assessment is fishery-dependent and the other is fishery-independent. The fishery-independent assessment targets phase I red drum fingerlings for up to six days after a release. A total of 1,073 (0.12%) fingerlings were recovered. The fishery-dependent assessment includes an annual \$1,000 lottery involving all legal-sized (18-27") red drum recovered and reported to the FDEP or the UM and a head box collection program which uses freezers as head depots at eight locations around Biscayne Bay. Fourteen returns qualified for the first lottery drawing and the \$1,000 was awarded in March 1995. This lottery will be repeated in 1996. No head returns were received

On October 28-29, 1995 FDEP, UM, FIU, and three other organizations conducted a "Hunt for Reds in October" fishing tournament in Biscayne Bay targeting hatchery-released legal-size red drum. There were 27 boats and 76 fishermen registered to fish for the two days. No red drum were recovered. The \$16,000 in prize money and registrants will carry over to a second tournament in 1996. Phase III internal anchor tag returns continue to come in. There have been 278 (0.31%) tag returns to date. Returns from other areas continued to increase. There are 565 (3.53%) returns from Volusia County and 63 (0.48%) from Tampa Bay.

Funding Sources

Primary funding for fisheries stock enhancement comes from saltwater fishing license monies (85.0%). Additional funds have been received through MML in a cooperative agreement involving state matching funds (15.0%).

ENDANGERED SPECIES

Sea Turtles

The Florida Department of Environmental Protection's (DEP) marine turtle conservation goals, responsibilities, and program direction promote the recovery of the five species of marine turtles that occur in Florida. The overall approach is to develop the scientific information that will guide recovery efforts (FMRI) and to minimize human impacts which result in increased mortality, degrade habitat, and impede recovery of listed turtle species (See Bureau of Protected Species Management). Sea turtle research is divided into three major components: (1) biological/ecological research and population assessment, (2) assessment of mortality factors, and (3) education.

Research carried out by program staff during 1995 addressed the following topics: (1) the distribution, abundance, life history, ecology, and migrations of marine turtles in Florida and contiguous Western Atlantic and Caribbean waters; (2) assessment of population status and trends of loggerhead, green and leatherback turtle nesting populations in Florida; (3) identification of genetic stocks of marine turtles utilizing Florida's nesting beaches and foraging habitats; (4) development of reliable sex determination techniques for marine turtles; (5) the nesting ecology of loggerhead turtles; (6) the effects of artificial lights on marine turtles; and (7) the dispersal behavior and lost-year ecology of marine turtles hatching on Florida's east coast. The various research projects greatly enhance the Department's ability to carry out effective management on behalf of marine turtles.

The FDEP, through the FMRI, continued to coordinate the Florida portion of the Sea Turtle Stranding and Salvage Network (STSSN), an 18-state program coordinated at the federal level by NMFS. During 1995, 983 stranded turtles were documented by the Florida network. Department staff respond to strandings, coordinate statewide activity of permitted volunteers, and manage the Florida STSSN database. Data analyses contribute significantly to management decisions such as the regulation of fisheries that impact marine turtles.

The FMRI and Bureau of Protected Species Management jointly participate in decisions regarding coastal construction activities, land acquisition, and management of nesting beaches and foraging habitats. Staff reviewed and commented on permits for coastal construction activity, dredge and fill permits, renourishment projects, beach lighting ordinances, and beach cleaning practices. Field evaluations of proposed and permitted activities to recommend and evaluate the success of marine turtle protection measures were also conducted.

Educational activities included distribution of brochures, informational booklets, responses to numerous requests for information from interested parties; attendance at and participation in coastal related conferences and forums; providing slide shows and lectures to groups; and general promotion of the program and its fund raising activities.

Manatees

Manatee research projects are conducted from the FMRI St. Petersburg Lab, the Marine Mammal Pathobiology Lab in St. Petersburg, and four field stations in Port Charlotte, Tequesta, Melbourne, and Jacksonville. Major program areas include carcass salvage and necropsy, population assessment /aerial surveys, satellite telemetry, and geographic information systems (GIS).

During 1995, the manatee carcass recovery program documented 201 manatee deaths in Florida. This level of annual mortality is even greater than that reported during 1994 and represents the second highest total annual mortality on record. Moreover, this mortality was not associated with any catastrophic event such as extremely cold weather. A total of 42 manatees died as a result of collisions with watercraft which is a reduction in the number of deaths attributed to boats compared to the previous year. While this is an encouraging direction, boats still represent the greatest threat to manatees from human activity. Although there were only 10 more animals in this category compared to last year,

perinatal deaths were the largest category of the total mortality. There were two peaks in perinatal mortality over the year. One was in early summer and another occurred during November and December.

Serum samples collected from wild manatees were submitted for serologic studies of various potential pathogens. Morbilliviruses have become a particular concern in marine mammals, however serological studies suggest that these viruses are of little consequence to manatees. Some analyses measuring chemical concentrations in tissues were completed. It appears that few chemicals persist in manatee tissues and that carcass condition does alter concentration of metals. Manatee cell culture research was initiated and is expected to yield cell lines that can be utilized in several types of research.

Aerial surveys for manatee distribution conducted twice-monthly were in 1995 in several areas including St. Johns River and its tributaries in Clay, Putnam, St. Johns Counties, Tampa Bay, Lee County, and the Wakulla and St. Marks Rivers in Wakulla County. In January and February 1995, two state-wide synoptic manatee surveys were conducted, which yielded a minimum count of the statewide population of 1822 manatees in February 1995.

Telemetry project staff monitored 23 manatees along Florida's west coast during 1995. Six of those were rehabilitated animals, three were captive born or adopted calves of rehabilitated animals. The manatees were monitored as far south as Flamingo and as far north as Hudson. Other research projects that occurred in conjunction with the capture of manatees for tagging included: blood collection for genetic analysis, hematology studies and sera for manatee serum bank, the taking of photographs for the West Coast manatee scar catalog, ultrasound analyses of the thickness of manatee blubber layers, and the implantation of passive integrated transponder (PIT) tags for the identification of individuals. PIT tags were implanted in 33 animals during 1995.

Staff of the Manatee GIS project continued to build and maintain data bases of manatee aerially-surveyed locations, telemetry, mortality, and miscellaneous maps representing physical features of Florida. Coverages of Florida's aquatic preserves were completed and forwarded to Tallahassee for final verification. Spatial analysis techniques using fixed-area filters were refined for aerial survey data and maps depicting areas of highest manatee use were generated for all verified data sets. An analysis technique to estimate movements between telemetry data locations was developed which included components to estimate both time spent in specific habitats and likely migratory corridors between high-use habitats. Further refinement of the technique continues. Numerous presentations on GIS activities were made within Florida and at national conferences. Two meetings of the multi-agency Manatee GIS Coordinating Team were convened by FMRI during 1994-95, primarily to organize working group meetings and complete a Manatee GIS Reference Guide for a CD-ROM of manatee-related data. The working group also met twice at FMRI in St. Petersburg. The participants divided into action groups and actively addressed issues dealing with data acquisition, sharing, ethics, and meta-data. Department staff also presented a test version of the Manatee CD-ROM to the group. A distribution CD will be available in spring 1996.

SPECIMEN INFORMATION SERVICES

The Institute's invertebrate and fish collections consisting of 18 phyla contains approximately 75,000 catalogued lots of about 5, 500 species. Specimens are lent to other investigators for reference, research, and educational purposes. During 1995, 8,200 invertebrate specimens were lent to 23 investigators at 16 domestic and 2 foreign institutions, and 7 other loans of 174 specimens were used for educational purposes. Similarly, 21 loans of fishes (including 1 to a foreign institution) were sent research and reference purposes, and 6 loans were made for educational purposes. Data from collection records are provided to individuals at both foreign and domestic institutions.

COASTAL AND MARINE RESOURCE ASSESSMENT

The FMRI's Coastal and Marine Resource Assessment (CAMRA) group continues to support the FMFC through the creative application of geographic information systems (GIS) and remote sensing technologies. Issues relative to habitat protection, user conflict, and seafood quality vary among regions requiring geographically targeted policy responses. CAMRA, Invertebrate Section, and FMFC staff continue to develop the Resource Impact Map (RIM) series of eight chart-sized maps to assist the FMFC statewide in making resource decisions. Each map includes coastline, depth contours, and aids to navigation. Benthic communities such as mangroves, saltmarshes, seagrasses, oyster reefs, coral reefs, hard bottom, and bare bottom are included, as are managed area boundaries. Bathymetric depth curves are

shown because depth is an important controlling factor for human and marine resources. Channels and navigation aids such as buoys are displayed to help users orient themselves, like road networks on land-based maps.

To tailor the maps for policy analysis, additional thematic information is added such as bycatch volumes or shrimp nursery areas. These maps have been used in the complex process of developing shrimp management plans and rules for the Big Bend and Northeast regions and analyzing bycatch reduction issues. Most recently, this process has been extended to the Panhandle region. Since August, 1994 FMRI staff have been developing portable computers and databases to support taking this technology into FMFC meetings in place of traditional paper maps. The computer system was used to provide interactive policy analysis capabilities by displaying alternative shrimp zone closure alternatives on an overhead projector for open debate by FMFC, DEP, citizens, and industry representatives. The representation of the shoreline conditions relative to the proposed zones reduced confusion and fostered more expedient policy analysis.

BUREAU OF MARINE RESOURCE REGULATION AND DEVELOPMENT

The primary responsibilities of the Bureau include the classification and monitoring of shellfish growing waters, the inspection of shellfish and blue crab processing plants, resource assessment, and resource rehabilitation and development. Sections 20.06(4), 20.56(6), 370.021, 370.071 and 370.16, F.S., and Chapters 381 and 386, F.S., set forth the Department's responsibilities in management of shellfish resources and the public health protection aspects of the shellfish industry.

Accordingly, under the mandate provided in Section 370.16(12), F.S., to "improve, enlarge, and protect the oyster and clam resources of this state," the Department is actively engaged in collecting oyster shell from processing plants and constructing and restoring oyster reefs on public bottoms. During 1995, the Shellfish Assessment and Enhancement Section collected 199,436 bushels of processed oyster and calico scallop shells, and deposited 262,439 bushels of shells to restore approximately 50 acres of oyster reefs in Apalachicola Bay. Approximately 214,600 bushels were deposited as part of an emergency assistance project to provide economic assistance to Franklin County following Tropical Storm Alberto.

The Florida Legislature appropriated \$454,400 as part of a statewide commitment to rehabilitate and develop productive shellfish resources for FY 1995/1996. Funding was allocated among seven coastal counties, including Levy, Dixie, Wakulla, Franklin, Bay, Okaloosa, and Santa Rosa. During 1995, 120,450 bushels of live oysters were planted during resource development projects in these counties. A sum of \$125,000 from FY 1994/1995 was used as matching funds to secure an Economic Development Assistance grant of \$500,000 to purchase more than 500,000 bushels of shell for emergency assistance programs.

Marine Resources Information System statistics (unedited data) showed statewide oyster landings in 1994 were 2.1 million pounds valued at \$2.6 million. Franklin County landings accounted for 1.5 million pounds. Landings declined in response to prolonged closures and extensive oyster mortalities resulting from Tropical Storm Alberto in 1994 and a prolonged red tide in 1995. The Department has issued 750 Apalachicola Bay Oyster Harvesting Licenses for the 1995/1996 harvesting season, generating \$75,800 in user fees for the Apalachicola Bay Conservation Trust Fund (FY 1994-1995).

Reported hard clam landings in 1994 reached 1.8 million pounds, valued at about \$8.4 million. Production trends for 1996 suggest that landings may remain steady over the short term, but flooding along the east coast may reduce landings from the Indian River. The emergence of shellfish aquaculture on Florida's Gulf Coast is expected to contribute substantially to hard clam production during 1996.

Hard clams harvested from waters classified as restricted or conditionally restricted must be processed through relaying and depuration activities rigorously controlled by the Division of Marine Resources. The Division has promoted depuration as a practical method for cleansing potentially contaminated shellfish, ensuring product quality, and protecting public health. In 1995, the Division issued 22 Special Activity Licenses to relay shellfish to private leases, and one license was issued to a depuration facility using controlled purification methods.

During 1995, 256 Special Activity Licenses were issued to promote shellfish aquaculture activities, including exemptions for aquaculture products below the minimum size, bag limits, and harvesting seasons. The Department has entered into three wet storage agreements for on-lease wet storage of oysters and/or hard clams.

Provisions of Section 370.16(1)-(11), F.S., allows leasing sovereign submerged bottoms for cultivation of oysters and clams. In 1995 there were 150 shellfish leases in effect totaling 2,000 acres. Additionally, 178 aquaculture leases issued under the provisions of Chapter 253, F.S. are in effect (757 acres), and another 75 aquaculture leases are in the review process. Cultivation of hard clams and oysters offers a technically feasible and economically practical alternative to increase shellfish production in Florida.

Nearly 50 percent of Florida's 2.4 million acres of coastal waters have been classified in 58 Shellfish Harvesting Areas (SHA). In 1995, two comprehensive shellfish surveys were completed and two shellfish management areas were reclassified as part of continuing efforts to maintain proper classifications in all Shellfish Harvesting Areas. The Shellfish Laboratory analyzed 163 shellfish meat samples and 16,679 water samples to insure shellfish quality. The Division certified 118 shellfish processing plants in 1995.

BUREAU OF PROTECTED SPECIES MANAGEMENT

SEA TURTLES

The Florida Department of Environmental Protection's (FDEP) marine turtle conservation goals, responsibilities, and program direction promote the recovery of the five species of marine turtles that occur in Florida. The overall approach is to develop the scientific information that will guide recovery efforts (see Florida Marine Research Institute) and to minimize human impacts which result in increased mortality, degrade habitat, and impede recovery of listed turtle species (BPSM). The current bureau program is divided into three major components: (1) coordination of research and management activities, (2) habitat protection, and (3) education.

Coordination of research and management activities is accomplished through various means, including the administration of a marine turtle permit system. Through a cooperative agreement with the U.S. Fish and Wildlife Service (USFWS), FDEP reviews, issues, and administers permits for both research and management activities within the state. Staff also monitor marine turtles held in captivity. One hundred and fourteen permits were issued for 1995, including 21 in-state and 2 out-of-state permits issued to public aquaria or marine science centers to display marine turtles for public education. Coordination of research and management activities was also accomplished through the continued participation of FDEP staff on local, state, federal, and international conservation panels, recovery teams, and specialist groups.

The Bureau of Protected Species Management and the Florida Marine Research Institute jointly participate in decisions regarding coastal construction activities, land acquisition, and management of nesting beaches and foraging habitats. Staff reviewed and commented on permits for coastal construction activity, dredge and fill permits, renourishment projects, beach lighting ordinances, and beach cleaning practices. Field evaluations of proposed and permitted activities to recommend and evaluate the success of marine turtle protection measures were also conducted.

Educational activities included distribution of brochures, informational booklets, responses to numerous requests for information from interested parties; attendance at and participation in coastal related conferences and forums; providing slide shows and lectures to groups; and general promotion of the program and its fund raising activities.

RULE MAKING

Prior to 1995, speed zone rules addressing county wide manatee protection needs were approved in 12 of the 13 key counties designated by the Governor and Cabinet in 1989 (Brevard, Broward, Citrus, Collier, Dade, Duval, Indian River, Martin, Palm Beach, St. Lucie, Sarasota, and Volusia). During 1995, rule development continued for Lee County, the only key county without a county wide rule in place. Rule-making was also undertaken in Volusia County while other rule-related activities were also conducted.

A rule proposal (amendments to 62N-22.005, FAC) to establish county wide zones in Lee County was published in the *Florida Administrative Weekly* in April 1995, and a public hearing was held in Fort Myers on May 25. An administrative challenge was filed against the proposed rule, pursuant to 120.54, Florida Statutes (F.S.), by Bonita Bay Properties, Inc. Lee County intervened on Bonita Bay's behalf, while Save the Manatee Club, Florida Wildlife Federation, and Hibiscus Point intervened on behalf of the Department. A hearing was held July 31 through August 4 and a final order was issued in December. The rule proposal was declared invalid for several reasons. The Department began reassessing all available information with the intent of developing a new proposal to be published in 1996.

More rule-making was undertaken in Volusia County in 1995 in response to another court case. In February 1995, a Volusia County judge issued an order invalidating the Slow Speed zone on the Hontoon Dead River (for several technical reasons) and raising other questions related to the definition of Slow Speed and what information the Department uses when evaluating the need for protection zones. In March, the Department adopted emergency rules reinstating the affected zone and making other amendments to address the judge's concerns. Amendments were then proposed through the normal rule-making process. The amendments were approved in May before the expiration of the emergency rules and were not challenged.

Amendments to the Collier County and Duval County rules were initiated in 1995 in association with each of the county's recently-approved Manatee Protection Plans (MPPs). Both plans were approved by the Department in 1995. Department staff also began drafting amendments to the General Provisions sections of 62N-22, Florida Administrative Code (F.A.C.), in response to comments raised by the Joint Administrative Procedures Committee. Other changes to these sections are also being considered to clarify several definitions and otherwise improve and simplify rule language.

At the end of 1995, the Department was still awaiting resolution of the challenge to the Broward County rule (62N-22.010, F.A.C.) filed by the Marine Industries Association of South Florida. In August 1994, a Hearing Officer from the state Division of Administrative Hearings issued a final order declaring that the disputed rules were a valid exercise of delegated legislative authority. The ruling was appealed by the petitioner to the Fourth District Court of Appeals in September 1994. Legal briefs were filed and after several delays oral arguments were heard in November 1995. A ruling is expected early in 1996. In the meantime, the rule is in effect and being enforced.

The Department responded to several requests to establish additional manatee protection zones in different areas of the state and also responded to numerous other less formal requests. The most frequent response was a letter providing information on manatee use of the area and suggesting the requestor contact his or her local government first.

In 1995, the Department continued to issue conditional exemptions to commercial fishermen and professional guides, in accordance with provisions set forth in the specific county rules and 62N-22.003, F.A.C. However, because of the constitutional amendment passed in November 1994, limiting the use of nets in state waters, the Department reassessed the exemption process. All exemptions (both existing and those issued after passage of the amendment) were issued with an expiration date of June 30, 1995. Although the Department decided that exemptions would still be needed in some cases after the constitutional amendment took effect, the number of areas where exemptions would be granted was reduced, primarily because exemptions would not be warranted in many areas after the new gear restrictions took effect. All exemptions issued after June 30, 1995, were issued with an expiration date of July 1, 1996, so that the Department could continue to evaluate the exemption process. The Department anticipates making additional changes to the process in 1996.

Finally, several site-specific exemptions were issued to boat/motor manufacturers for testing purposes and to others to allow access to state-designated No Entry and Motorboats Prohibited zones. These latter exemptions were issued to allow for scientific research and environmental monitoring, and to authorize access to private property adjacent to the zones.

SIGN POSTING

As manatee protection zones are established, appropriate regulatory signs must be posted. If such zones are to be enforced, the signs must be properly designed, located, and maintained. In 1990, by act of the Legislature, the Florida Inland Navigation District (FIND) and the West Coast Inland Navigation District (WCIND) were assigned responsibility for posting and maintaining manatee regulatory signs for duly approved zones within their counties. The

FDEP must still post the other counties and coordinate review, and approve sign plans submitted by the navigation districts. Within FDEP, the Office of Waterway Management is primarily responsible for coordinating this effort.

The process of posting protection zones generally requires that a contractor with special equipment and personnel obtain the necessary environmental permits, post the new signs, and replace damaged or missing pilings and signs. These areas must then be inspected on a regular basis, preferably quarterly, to ensure the signs are maintained in place and do not pose a significant hazard to navigation.

The Florida Manatee Recovery Plan also recommends drawing the public's attention to areas where manatees are vulnerable by posting "Caution - Manatee Area" signs. Such areas include boat ramps adjacent to warm-water out falls or refugia, the refugia themselves, marinas and docks manatees are known to frequent. In conjunction with the permit review process, applicants are often required to post appropriate signs during and/or after construction projects. In areas where boating speed zones have been approved by the Governor and Cabinet, additional signs may be required to be posted at marinas, docks, and boat ramps located on state leased lands in the boating speed for the area. In fact, some counties have posted at marinas and boat ramps, an enlarged map of the boating speed zones for that area.

During 1995, posting was completed in St. Lucie County. In addition, major modifications and repairs were made in Volusia, Collier, and Citrus counties. Routine maintenance was performed in the other counties.

MANATEE PROTECTION PLANS

In response to the Governor and Cabinet directive of November 1989, the FDEP has been working with the 13 "key" counties to develop Manatee Protection Plans (MPPs). In 1995, MPPs were adopted in Collier, Dade, and Duval counties. The latter plan was conditionally approved by the Department. Two non-key counties also passed local plans: Levy County (for the Withlacoochee River) and Charlotte County (for the City of Punta Gorda). In Citrus County, which has had a plan in effect since 1991, staff efforts continued to focus on implementation of the plan, attending local coordination meetings by the USFWS, coordinating the aquatic plant management effort and making recommendations on permits. The county is currently in a five year review of its local government comprehensive plan under the Evaluation and Appraisal Report (EAR) process which falls under the Florida Department of Community Affairs. FDEP staff assisted the county in updating the MPP and has attended a series of meetings and public workshops on issues which will require amendments to the comprehensive plan.

Manatee protection (speed) zones addressing county wide protection needs have been established in all of the 13 key counties except Lee; however, speed zones have been in place since 1989 for the Caloosahatchee River area of Lee County. One of the major components of a MPP is to develop a speed zone rule to reduce manatee and boat conflicts.

County staff are drafting plans in Brevard, Indian River, and Volusia counties. FDEP funded positions and studies to accomplish this. In 1995 boating studies were completed for Indian River and Volusia counties. In Brevard County, the Education Committee produced a proposed education program for manatee awareness comprised of 21 initiatives. The FDEP helped secure funding for and helped produce two manatee awareness videos targeted for waterway users. Brevard County completed two years of meetings of the Manatee Ad-hoc Committee to draft the MPP.

The Department also funded a boating study of Palm Beach County, which was completed this year, and initiated a contract for a study of Martin County. Attempts to secure funding for boat facility siting studies of Martin and St. Lucie counties were unsuccessful. The Department also secured funding for a partial boating study of Lee County and is working with the county on the draft MPP. FDEP obtained a grant to produce a video on manatee protection for Dade County and to fund boater education guides/maps for Citrus and Brevard counties.

PERMITTING

A total of 571 requests for manatee impact review comments for permit or lease applications were received. A total of 486 manatee impact reviews was performed and comments sent to appropriate agencies. A total of 101 projects, deemed "critical" because of their size, location, complexity, or potential to impact manatees or their habitat, were reviewed and recommendations were provided to appropriate agencies. Bureau recommendations were also sent

to the USFWS, Tampa Port Authority, the U.S. Army Corps of Engineers, and the Office of Intergovernmental Programs.

Software such as DBASE IV, SAS, PATS, and ArcView, as well as GIS-generated maps were used in the application review process. Meetings with applicants and their consultants, as well as other governmental agency personnel, is also a part of the review process. Project-related phone consultations with various federal, state, and local government agencies, as well as agents for applicants and concerned private citizens were made. Additional miscellaneous written responses were made to various individuals and agencies who either requested project or program-related information. Site visits and project meetings were also conducted as necessary.

HABITAT CHARACTERIZATION, ASSESSMENT AND PROTECTION

The manatee habitat protection section is responsible for coordinating reviews of manatee habitat-related issues for FDEP, including collecting and assimilating reference information concerning manatee habitat issues, review of pertinent inter- and intra-departmental efforts dealing with manatee habitat protection, coordinating agency working groups in areas of special concern for manatees, and presenting current information regarding manatee habitat research to public and agency groups. Information and literature concerning manatee habitat use and foraging behavior and the ecology of seagrasses and aquatic macrophytes continued to be obtained and assimilated to provide managers with access to information needed for manatee habitat management efforts. The FDEP staff also continued to coordinate with the FMRI and water management district offices to obtain up-to-date GIS information for the development of seagrass maps.

Staff of the FDEP continued participation in the Crystal River Interagency Working Group, which establishes aquatic herbicide work plans for Kings Bay and Homosassa River based on seasonal manatee use. Coordination of the Blue Spring Interagency Working Group was continued to ensure that manatee habitat in this area will be sustained and monitored on an annual basis. Both working groups are comprised of representatives from the USFWS, U.S. Army Corps of Engineers, respective counties, the Florida Game and Freshwater Fish Commission, and the FDEP Division of Recreation and Parks, Bureau of Coastal and Aquatic Managed Areas, Bureau of Aquatic Plant Management and Bureau of Protected Species Management (BPSM).

The habitat section also coordinated with the permitting and manatee protection plan sections on issues concerning development-related degradation of seagrass systems and water quality, and developed manatee habitat-related evaluations of lands proposed for state acquisition with P-2000 funds (CARL and FCT projects). To facilitate the CARL project review process, a criteria matrix ranking system based on pertinent manatee habitat value (feeding areas, accessible water depths, use patterns, etc.) was used for the 1995 CARL proposal list. The habitat section also acted as an information resource by reviewing and providing comments or requested information for numerous inter- and intra-departmental projects dealing with manatee habitat concerns. This section also began to coordinate efforts to purchase and equip FMRI manatee research vessels with effective propeller guards, maintain and distribute information concerning marketed propeller guards, and test the efficacy of available propeller guard designs.

MARINE RESOURCES GEOGRAPHICAL INFORMATION SYSTEM (TALLAHASSEE)

The Tallahassee GIS, Statistics and Graphics section utilized SAS, AutoCAD, several graphics packages and a 35 mm slide maker for daily GIS operations. Staff updated manatee GIS data were received from FMRI for use in the rule-making, protection planning, permitting, and public information response activities of BPSM. Arc/Info was upgraded to version 7.02 and 8.4 Gigabytes of drive space were added to the Sun Sparc for GIS. ArcView was updated to version 2.0 and use has increased, allowing more staff members direct access to GIS data. For backup protection and access, all GIS data that can be exported to the PC is stored in triplicate: on the Sun, a GIS PC and the network I: drive. The Tallahassee GIS section distributed 313 GIS maps, 203 AutoCAD maps, 14 SAS prints, and 60 digital data sets, 55 graphic prints and 165 35 mm slides. Assistance was provided to other GIS or Graphic groups in the Department's Divisions of Law Enforcement, Marine Resources, Recreation and Parks, State Lands, and the Georgia Department of Natural Resources.

PUBLIC INFORMATION AND EDUCATION

During 1995, an evaluation of all available information materials was taken and more informational handouts were developed and printed for distribution. Over 1,000 manatee information requests were responded to from around the world (most of which were bulk requests from teachers or organizations); almost 2,000 letters were answered in regard to Boomer's death (Boomer was a popular manatee in the Save the Manatee Club's "Adopt a Manatee" program that was killed by watercraft); and press releases were issued that addressed issues such as annual mortality figures, the public outcry over Boomer, and the Voluntary Contribution Campaign. Samples of educational and informational materials were supplied to various county governments for their use in preparing the educational components of their manatee protection plans.

The Bureau's slide library developed into a working tool for the staff with the assistance of OPS staff assigned to this task; two other volunteers worked in the areas of slide management and file management as well. Staff assisted with the Miami International Boat Show in January 1995, and set up and manned displays at other special events.

Voluntary Contribution Campaign (VCC): The VCC was well received again by the County Tax Collectors and staff. The accounting needs for the decals was a big issue this year, and a new worksheet was developed and distributed to county tax offices. The 1995-1996 Boomer decal (from donations received during the June campaign) brought in over \$85,000 to the program. The Voluntary Contribution Campaign winner was Manatee County. Palm Beach County came in second, Sarasota County came in third, and Martin County received an honorable mention.

Manatee Technical Advisory Council (MTAC) - A new newsletter was created for presenting information to the council. The MTAC Update is a quarterly report on the activities of management and research programs of the Bureau. Four MTAC meetings were held during 1995.

Florida Advisory Council on Environmental Education (FACEE) - BPSM staff received funding for several projects from the Save Our State Environmental Education Trust Fund. These will be developed and printed during 1996. A total of \$107,280 is available for new printing or reprinting projects.

License Plate Promotion - A marketing intern from Florida State University assisted with promoting the manatee license plates. Several different ad slick designs were developed and distributed to media contacts around the state. The intern will continue to work on this promotion through the end of the 1995-96 fiscal year.

RIGHT WHALE STATUS

In addition to the manatee, the FDEP has responsibility for other endangered marine mammals, including the North Atlantic right whale, the most endangered great whale in the world. The NMFS has lead responsibility for recovery of the right whale and in December 1991 published a recovery plan for the right whale. The Georgia and northeast Florida coastal waters are the only known calving area for this whale and were designated as critical habitat by the NMFS on June 3, 1994. Accordingly, aerial surveys were conducted to monitor the seasonal presence of right whales and to determine the number of calves. Individual whales were identified, and movements were tracked based on a scar catalogue. Permit applications which may affect the right whale and/or its habitat were reviewed by the FDEP staff, and specific conditions were recommended to minimize adverse effects. The FMRI staff participate on a southeastern U.S. multi-agency task team to implement recovery plan tasks and to minimize ship collisions with right whales for example, by assisting in educational seminars for harbor pilots and the port community. The FDEP received \$20,000 from the NMFS for the period of October 1995 through September 1996 to assist in right whale recovery efforts. In addition, the NMFS transferred \$15,000 to NOAA Air Corps for flight time aboard a NOAA Twin Otter aircraft for FMRI staff to conduct offshore surveys to search for additional wintering habitat. FMRI continues to work on a cooperative agreement with the NMFS that will provide additional funding for future efforts.

BUREAU OF COASTAL AND AQUATIC MANAGED AREAS

Apalachicola National Estuarine Research Reserve

Education programs at the Reserve involved 3,570 participants in scheduled education activities, with an additional 3,320 walk-in visitors to the facilities and exhibits. Staff were involved in several local science fairs and career days as well as coordinating education exhibits for an audience of 16,000 at the annual Florida Seafood Festival. Other annual events included the coastal cleanup, an honor roll cookout, and a public turtle patrol. Education staff hosted four coastal management workshops for 108 coastal decision makers and a monthly guest lecture series for the local public. Publication production during 1995 involved four issues of the Reserve's newsletter, *The Oystercatcher*, and an informational flyer for beach house renters about nesting sea turtles. Staff were also involved in developing exhibit designs. The education section managed a grant from the Northwest Florida Water Management District that reimbursed school districts for field trip expenses. A checkout system for education materials from the Reserve was used by 58 educators.

A brochure describing a "Shoreline Stabilization Demonstration Project" was produced for planners, developers, and citizens of coastal counties. Profiles of a breakwater site and monitoring of the *Spartina alterniflora* marsh continues on a quarterly basis. Beach profiles are being performed at four stations on Cape St. George Island to evaluate the recovery of sand dunes after Hurricane Opal. Water quality monitoring continued through 1995 with the use of dataloggers placed at three stations in Apalachicola Bay. Staff monitored Black Skimmer and Least Tern nesting on the newly created 5-acre Bird Island, which was a joint habitat development project among Reserve staff, the Army Corps of Engineers, and the Florida Game and Fresh Water Fish Commission. Birds were attracted to the island by establishing a desirable nesting habitat of scallop shell fragments and by the use of two-dimensional decoys. Staff responded to 425 sea turtle crawls on St. George Island, Cape St. George Island, Dog Island, and the mainland, including the first documented nesting of Leatherback sea turtles on St. George Island. Staff also responded to several cases of stranded sea turtles and disoriented hatchlings along with numerous Bottlenose Dolphin strandings and one West Indian manatee stranding. Staff also assisted researchers from the NMFS Panama City Laboratory on sampling trips for their project entitled "Age, growth, age at maturity, and size composition of spotted Seatrout, *Cynoscion nebulosus*, in the panhandle region of Florida."

East Coast

The Guana, Tolomato, and Matanzas (GTM) rivers estuarine ecosystem, which has been nominated by the Governor and Cabinet as Florida's third National Estuarine Research Reserve (NERR), is progressing toward site designation through the development of a management plan. A request for proposals (RFP) was issued seeking a contractor to develop the plan. Public input is being sought through the monthly public meetings of a recently convened twenty-eight member advisory council.

Florida Keys National Marine Sanctuary

The Florida Keys National Marine Sanctuary released its Draft Management Plan/Environmental Impact Statement for nine months of public review. Public outreach was intensified to get people involved in the process. Staff held two series of Information Expos, and the public comment period culminated in six public hearings, five of which were held in Florida. Two major restoration projects were completed on ship grounding sites in the upper Keys, and restoration work was begun on the grounding site of the Columbus Iselin. G.P. Schmahl continued in his role as liaison in the Water Quality Protection Program and served as co-chair on the Technical Advisory Committee. Outreach and education efforts continued through "Coral Reef Classroom," Sounding Line, the "Waterways" TV program, numerous presentations, radio and television show appearances, and newspaper columns and releases. Sanctuary officers issued 403 verbal warnings and 93 written warnings at the Looe Key area. Sanctuary visitations totaled 59,085.

Rookery Bay National Estuarine Research Reserve

The Rookery Bay National Estuarine Research Reserve (RBNERR) education staff conducted 253 programs reaching a total of 6,804 people. Programs include both on-site field study trips and off-site outreach presentations. Staff are continuing with exotic plant control efforts. Three new grants have been awarded and initiated. A Coastal Zone

Management grant targets non-point source pollution and hydrologic alteration impacts on oyster reef community structure. A grant from Earthwatch will involve ten volunteers staying at the Reserve for a two-week period to eradicate exotic plants, monitor mitigation sites, and map native and exotic plant communities. The third grant involves using satellite imagery to delineate hydroperiods and plant communities. Additionally, an on-going grant from Collier County Mosquito Control to examine the effects of mosquito control spray on invertebrate species will continue this year. The Belle Meade CARL project is proceeding at an accelerated pace, with staff fielding calls and concerns from project landowners. A new Rookery Bay CARL project "Team" has been formed and will focus on completing the Rookery Bay CARL acquisitions. A ranger/patrol position has been implemented with a staff member completing a number of surveys each month by boat and providing a higher profile and interface with the public for RBNERR. Dr. Todd Hopkins was hired in June 1995 as the new research coordinator. The research team is getting Rookery Bay's contribution to the National Estuarine Research Reserve water quality monitoring program underway with sites in Henderson and Blackwater creeks. Dr. Hopkins helped the reserve acquire a 28' house boat (the RV STELLA) to be used as a mobile platform for research, monitoring, and education in the 10,000 Islands. The Goodland Field Station opened in January, providing dormitory facilities for four, and visitors from the University of Florida, University of Miami, and FMRI have used the facility. The Rookery Bay Advance Identification of Wetlands (ADID) study, the first ADID to be solely GIS based, will finish following a public meeting in March, 1996.

OFFICE OF FISHERIES MANAGEMENT AND ASSISTANCE SERVICES

The major responsibilities the Office of Fisheries Management and Assistance Services (OFMAS) are: (1) to serve as the FDEP liaison to the FMFC, (2) the state artificial reef program, (3) to monitor and evaluate the accuracy of the marine fisheries Trip Ticket reporting system requirements through audits of applicable fish house records, (4) to improve and expand distribution of FMFC rules, FDEP regulations, and information on marine resources to sport and commercial fishermen, (5) the issuance and reconciliation of recreational and commercial fishing licenses, (6) the administration of lobster trap certificate allocations, (7) the oversight of landings for fisheries managed by quota with closure of the fishing season as quotas are reached, (8) civil penalty assessments for violations of certain fisheries regulations, (9) aquatic resource education, and (10) to act as DEP technical liaison with local government mosquito control programs. Highlights of staff efforts in 1995 include the following.

During 1995, 34 artificial reef grant projects totaling \$1,104,235 in saltwater fishing license and Sport Fish Restoration funds were completed statewide, benefiting 14 Gulf coast (and 7 Atlantic coast) counties. A five year research project on the effects of size and spacing of artificial reefs on associated fish and invertebrate communities was concluded by the University of Florida under contract to OFMAS. An artificial reef Atlas providing locations and descriptions of nearly 300 state and federally funded reefs constructed from 1985-1995 was completed and distributed; three issues of the Artificial Reef Newsletter and the "Proceedings of Artificial Reef Summit '93" were produced and distributed. Staff participated in the second Florida Gulf Coast phase of the civil-military cooperative Reef_Ex project resulting in the deployment of an additional 40 army surplus main combat tanks as artificial fishing reefs. At year's end, 80 of these 45-ton tanks were in place off seven Gulf counties. Those tanks exposed to the direct impacts of Hurricanes Opal and Erin in the western Florida Panhandle were unmoved. Staff also conducted 29 on-site SCUBA assessments of OFMAS sponsored reef projects in addition to observing surface deployments and inspecting materials associated with other projects.

The OFMAS audit program audited first-time landings totaling 20,017,373 pounds of saltwater products from wholesale and retail dealers, including bait & tackle shops. Collection of statistical data was enhanced through improved communications with dealers and amendment to the rule governing reporting of landings. Staff developed scales for assessing civil penalties for violations of various fisheries regulations as authorized by law. Quota monitoring continues.

The OFMAS Aquatic Resource Education/Angler Outreach program expanded with the addition of two staff. The program will provide coordination to Division efforts to provide information on fisheries and coastal resource management to the citizens. Staff maintained booths at several boat shows for this purpose. The EcoVentures interactive computerized aquatic education program has been provided to more than 250 middle school teachers at department sponsored in service workshops. Staff are active participants on the state board and, where possible, local chapters of Florida Fishing and Boating Buddies, an organization formed to encourage participation in the sport of fishing.

Mosquito control liaison staff oversaw the completion of a project that reconnected 3,329 acres of estuarine wetlands in the Merrit Island National Wildlife Refuge, which had been impounded for mosquito control, to the Indian River Lagoon system. Improved access to these wetlands had an almost immediate and significantly beneficial impact on important fishery species (*i.e.*, snook, tarpon, ladyfish, and mullet, among others).

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES

The Mississippi Department of Marine Resources (DMR) is a technically and functionally diverse state agency with responsibilities that include saltwater fisheries and coastal wetlands management and the promulgation and enforcement of state and federal laws that pertain to the regulations of the use and harvest of coastal, estuarine, and marine resources.

DEPARTMENT OBJECTIVES

Although the DMR's public image is typically linked to its regulatory functions, much of the organization's activity is in fact centered about assistance, development, and public education regarding the wise use and conservation of coastal resources. Providing liaison between the state and the U. S. Department of Interior Minerals Management Service, the DMR offers technical assistance to the Department of Environmental Quality and the Office of the Governor with regards to environmental issues pertaining to offshore oil and gas exploration and development activities. The DMR also administers grant and contractual monies that are made available through the Coastal Zone Management Program and the Dingell-Johnson, Sportfish Restoration Act for a variety of recreational, public works, and developmental programs that support local governments, universities, and other public institutions. Furthermore, the DMR also provides technical assistance to individuals, small businesses, and industry in the coastal region in the areas of aquaculture and mariculture, pollution abatement, product development, and waste treatment, to name a few.

The agency's regulatory functions, of course, are not to be overlooked. In concert with the Alabama Department of Natural Resources and the Louisiana Department of Wildlife and Fisheries and through its active roll as a participant in the Gulf States Marine Fisheries Commission and the Gulf of Mexico Fisheries Management Council, the DMR's fisheries management program is geared towards providing for the continued wise utilization of fisheries resources while at the same time ensuring the health and vitality of the state's valuable renewable marine resources. Working jointly with scientists of the Gulf Coast Research Laboratory in Ocean Springs and the National Marine Fisheries Service, Department biologists continually monitor shellfish and finfish stocks in state waters and both sport and commercial harvest levels in order to provide the Mississippi Commission on Marine Resources with the best available scientific information on which to base its management decisions. Staff biologists work in cooperation with the U. S. Food and Drug Administration to provide a shellfish management program that is in full compliance with all applicable federal guidelines.

Regulation of wetlands activities is similarly accomplished in cooperative fashion as the DMR reviews and assesses each such proposed action in concert with the U. S. Army Corps of Engineers and the U. S. Fish and Wildlife Service through a regional permitting system.

The DMR's strong enforcement program - a cooperative agreement with the Enforcement Division of the Department of Wildlife, Fisheries and Parks - is committed to ensuring compliance with all state and federal rules and regulations that apply to the coastal zone. In particular, enforcement of federal laws associated with the Lacey Act and investigation of incidents involving both marine mammals and endangered marine turtle has gained increased emphasis in recent years.

The following narratives provide a brief description of each of the major programs and projects within the Department of Marine Resource highlighting the principal objectives and accomplishments of each during the past fiscal year.

EXECUTIVE DIRECTOR'S REPORT

With the appointment of a permanent Executive Director beginning in December 1994, a number of changes and major accomplishments in reorganization, planning and policies, and facilities have occurred:

Personnel and Reorganization

Personnel performances in the department have been reviewed against the past ten (10) years of PEER Committee and internal Department of Wildlife, Fisheries and Parks (DWFP) reports, and the functions and responsibilities of the department continue to change under new legislative mandates. The department was reorganized in March 1995, and an additional 19 new positions were identified and requested for FY1996 through the Mississippi Legislature. Unfortunately, only one new position was approved, Public Relations Director. Follow-up for the additional 18 positions will be made in the FY1997 budget request. Numerous trips were made to Jackson to promote the DMR proposed budget and proposed legislation for FY1996.

In the reorganization process, a number of personnel were reassigned to more appropriate positions to align with their skills and abilities and to attempt to fulfill a number of the PEER Committee and DWFP recommendations. I believe this has already begun to make a difference in the departmental efficiency in responding to the public. The reorganization has broken down the old culture of "my territory versus your territory," and the change has resulted in a more team oriented, department together approach. There is still more work to be done in this area. I believe the Department needs continual leadership and training for its employees. It should be noted that the Director's office has taken on the additional task of department personnel processes and procedures. This function had been in the Business Office which is inappropriate the way the department is structured. A personnel officer is needed in this area and will be requested again in FY1997.

The reorganization has begun the process of improving the interagency department working relationships with DWFP, DEQ, Health Department, Gaming Commission, other Gulf States Agencies and numerous federal agencies (NOAA, EPA, Corps of Engineers and FDA). Meetings have been held with these organizations and regular scheduled coordination for MOU's will be held in the future. In evaluating the restructuring needs of the department, the Executive Director held numerous discussions with employees, previous employees, DWFP officials, GCRL officials, CMR Commissioners, DEQ officials, Legislature, previous Directors of DMR (BMR) and other state and federal agency officials. These discussions were most helpful. The Executive Director has used the personnel/reorganization authority provided in the FY1994 DMR Legislative Act. There were 16 vacant positions that had been authorized for FY1995 when the Director was appointed to his position in December 1994. Ten (10) of the sixteen (16) were filled by February 1995 and the remaining were filled or were in the process of being filled by June 1995. A number of employees were dismissed during this process.

Planning and Policy

Initiative has been taken to develop a DMR strategic plan that will be beneficial in setting a DMR vision, clear mission statement and establish specific goals and objectives for all programs. This plan will be an on-going effort. The Mississippi Legislature requires a strategic plan from all state agencies for the budget process. In addition to the DMR strategic plan, plans have been developed for a five year computer/software upgrades, equipment upgrades, and facility upgrades.

As the department moves into FY1996, additional planning efforts will be directed at fisheries management plans for specific stocks in conjunction with the other four Gulf states through the Gulf States Marine Fisheries Commission. There has been tidelands program planning to lay the foundation of the Tidelands Fund distributions for FY1995, 1996, and a broad plan outlined for the next fifteen years. Very little structure had been started on this program prior to January 1995.

The planning for emergency situations has been initiated to provide DMR personnel direction for oil/chemical discharges in marine waters, stranding of marine mammals, hurricane and other disasters, and many similar or related program activities. An Emergency Response Officer has been identified to plan, coordinate and conduct DMR response activities. This has begun to pay dividends within the early stages of this program.

Plans have begun to implement the Mississippi Boat and Water Safety Act. Because of the limited DMR planning staff, Gulf Regional Planning has been very active in developing the initial phases of this new program. Much is yet to be accomplished in planning and conducting this program. Additional resources and staff will be requested to support this program in FY1997. Plans are underway to approach the FY1996 Legislative Session with both new

proposed legislative changes and increased DMR budget requests. This will be a joint DMR and CMR effort to plan and request additional resources.

There have been a number of policy changes within and external to the department to provide direction and control of programs and employees. Policies have been placed in a new written DMR format, others have been placed in letter or memo form. A few policies still remain in a verbal stage but will be placed in writing as soon as time permits. A partial listing of the policies include:

- DMR Aircraft Operations
- DMR Safety
- DMR Public Interface
- Trip Reports
- Weekly Staff Meetings
- Weekly Activity Reports
- Public Request for Documents - Cost to Search/Copy
- Access of DMR Files by Public
- Open door policy to Director
- DMR Program Reviews
- Conducting Public Meetings
- Reception of public calls and visitors
- Parking and Building Access
- Smoke Free Building
- Reporting Building Security Violations
- DMR Identification Badges
- Property Accountability
- DMR Dress Code - office and field
- DMR Contract Review

There has been an increased effort in coordinating with other state departments - Health, DEQ, DWFP, Enforcement, Gaming, as well as other state and federal agencies (NOAA, CZM, NMFS, NPS, DOI, EPA) and others. MOA/MOU's have been developed with a number of agencies and are in process with the others. It is the DMR objective to have a MOU/MOA with each organizational element in which DMR interacts.

Procedures and Practices

The largest procedure change has been for the various DMR departments and office chiefs to work together on the solution of problems.

More open communications with the Director and all employees has been initiated and more open communication with all elements of the public. The Executive Director has had and will continue to have an open door and open "ears" policy to all public concerns and remarks.

New DMR practices treat all the public with dignity and respect regardless of how emotional or upset individual members of the public may be. The Executive Director treats all employees as professional and responsible personnel, and has removed a number of mis-trust practices from the operation. Employees are all treated equally, fairly, and with respect. The Executive Director has begun to build trust and improved communications with weekly staff meetings and open program reviews for the staff. Employees are recognized for their contributions to the DMR operation through personal recognition from the Director. Also, when employees deserve direction to correct problems, they are discussed in a private setting immediately after the event. Finally, improved reviews and coordination of all DMR contracts and plans are coordinated prior to Director's approval.

DMR Programs

All DMR programs will have program/project plans with goals/objectives, scheduled management structures, reporting and control measures. It will take sometime to put this into place but it will be begun in FY1996. New

programs such as Tidelands and Boat and Water Safety will have wider staff involvement. These programs were both assigned to DMR by the Legislature without any personnel or administrative funding support. Request will be made to correct this oversight in FY1997.

More informal, fact finding information exchange workshops are planned to be held prior to presentations to the Commissioners for decisions or resolutions. Marine resources issues will be resolved and decided easier with the use of informal workshops. Meetings with other organizations, such as GCRL, Gaming Commission, DEQ, DWFP, Enforcement, Health Department, FDA, NMFS, NBS, GMFMC, and GSMFC, have been held to become proactive in planning or resolving overlapping or joint marine resource issues or projects.

The Tidelands Program has been coordinated well with the Commission and Department members working out a process together with the objective of better management of the Tidelands Funds.

The NOAA/CZM Program still remains a very productive and important program area with funds in the order of \$750,000 to \$800,000 received in FY1995. A new FY1996 project was recently approved for DMR to conduct a Casino Impact Workshop.

The wetlands permitting activities continue to increase and places a heavy burden on the small staff. Additional training has helped; however, additional staff will be requested in FY1997.

The new Technology Application Division has shown promise of helping the seafood industry with new approaches and better communications with the industry. The shellfish plant inspection is one of the target areas for this division. Additional personnel are required for this division as well as shellfish personnel in Marine Fisheries.

Public and Legislative Relations

A Public Relations Director position has been established and will be authorized in FY1996. In the meantime, the position is being filled by a contract person. It is the Director's opinion that three additional positions should be added to this very important DMR function; this will be requested in FY1997. News releases have been prepared on key DMR/CMR announcements. It is important to have the professionalism of a P.R. employee to prepare and release such announcements. This has improved DMR media image. The DMR P.R. employee has visited with NASA, EPA, DWFP, and other agencies to review other programs for new ideas and concepts for DMR. A DMR/CMR logo has been developed and adopted to give DMR its own identity. DMR coffee mugs, decals, and patches have been procured for appropriate distribution. DMR speeches and attendance have been conducted at numerous civic clubs - Rotary, Kiwanis, nature clubs, schools, etc.

Public Relations has prepared a DMR overview for an outreach presentation program. It will be continually improved and upgraded by the P.R. Director. The Public Relations Director has been very helpful in making contact with state legislative members to help promote the DMR's request for legislative changes and budget appropriations. A plan of action for FY1997 request is underway with the P.R. Director, staff members, and the Executive Director.

There is a need to better communicate with the legislature on the plans and accomplishments of the DMR. Efforts are underway to develop such a program, such as a monthly DMR Newsletter.

Facilities and Equipment

The Department has planned and moved to an improved facility (152 Gateway Drive, Biloxi, MS). Plans are also underway for a move to the permanent Mississippi State Office Building - Back Bay of Biloxi when the facility is ready. The move to 152 Gateway Drive facility changed the cost per square foot from \$7.90 to \$6.25. However, the electricity and janitorial services must be handled as separate contracts. Additional space was needed by DMR, and the janitorial services and parking was far from ideal at the old location. The new facilities were partly completed (interior) by the DMR staff to make them more professionally accommodating in the 23,000 square foot facility. The CMR has better accommodations with a public hearing room that is large enough for 280 people. In addition, improved conference rooms, workshop area, library, public receiving rooms and larger external secured storage is now available. The environment is more professional, efficient, and serviceable.

The DMR has initiated a plan to upgrade its computers and software systems. The department was 8-10 years behind the technology when the new director arrived. The department has ordered approximately \$35,000 in new computers for FY1995 and will continue upgrading in FY1996. Additional training for employees will have to be implemented with the new equipment. There is still a need for a system analysis to expedite the computer enhancement. The DMR key personnel have reviewed other agencies capabilities in GIS Systems to initiate efforts to upgrade the DMR with an active system. There are many opportunities which the department will sort out and put in place in FY1996.

Other DMR equipment and furnishing needs have been reviewed and evaluated. Plans are underway for upgrading much of the equipment, maps, charts, and etc. That process has also begun and will carry over into FY1997.

The DMR aircraft requirements have been reviewed and changes in location for docking, care, and upgrade are underway. The DMR plans to increase the shared use of the aircraft with DWFP/Enforcement and DEQ. This effort has begun.

Overall, the method in which computer equipment is reviewed and assigned to the DMR staff has improved so that the staff members who can best utilize the high tech computers will receive them.

The DMR continues to stress that the budget does not belong to individuals, but it is a DMR budget. Everyone will have an opportunity to express their equipment needs and their requirements will be seriously considered and planned.

LIAISON OFFICE

First established in March 1995, the Liaison Office assisted the Executive Director in formulating resource data needs and research objectives of the Department and then facilitated development, conduct, and final reporting of those research projects. In the course of project development, the Office of Liaison identified possible funding sources, oversaw in-house grant proposals, and coordinated with contract grantees. The office also acted as technical monitor to all grants to ensure federal and state terms and conditions were met and work was carried out as contracted. As specified in Mississippi Code Section 49-15-15 (2)(a), all research activities were closely coordinated with the Gulf Coast Research Laboratory to utilize GCRL's resources to the fullest. In addition, the office provided scientific liaison between the DMR and other state and federal agencies including the Mississippi Department of Environmental Quality, Gulf States Marine Fisheries Commission, the Gulf of Mexico Fisheries Management Council, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service.

EMERGENCY RESPONSE OFFICE

In April 1995, when the Department was internally reorganized, an Emergency Response Officer (ERO) position was established within the DMR Directorate. The ERO represents the DMR and provides technical support to other state and federal agencies during natural and technical emergencies such as oil and chemical spills, hurricanes, barge groundings, etc. Additionally, the ERO promotes safety around the office, participates in public education and outreach projects, and responds to issues involving endangered species.

During the short period of time since this position was established, a major chemical spill occurred in Hancock County which required the Department to coordinate with a nationwide team of experts that were called to the scene. Clean up from this event lasted several weeks, and monitoring activities continued for several months. Additionally several small oil/diesel spills associated with the sinking of small boats were responded to.

Weather events also caused problems during this time period. Heavy rains caused major flooding on the Jourdan, Biloxi, and Tchoutacabouffa rivers during the middle of May. In order to aid the victims of the flood, the Department adopted emergency procedures designed to expedite wetland permitting processing procedures.

Hurricane Allison posed a possible threat to the coast on the first day of Hurricane Season (June 1). The development of an in-house policy for Tropical Storm/Hurricane Response was initiated and emergency response equipment was ordered so that the Department will be prepared for the worst-case-scenario--a direct hit from a hurricane.

One of the most important duties of the Executive Director is to represent the interests of the agency at regional and national levels. Marine resource management in the Gulf of Mexico is a shared responsibility with our four sister states and the federal government. The Gulf of Mexico Fishery Management Council is one of the eight regional councils created by the U.S. Congress with passage of the Magnuson Act in 1977, and our efforts on behalf of this council are compensated by the U.S. Department of Commerce, NOAA, National Marine Fisheries Service. Activities on this project for FY1995 are as follows:

Project Title: Gulf of Mexico Fishery Management Council

Project Objectives:

1. To provide a state representative to serve as a voting member on the Gulf of Mexico Fishery Management Council (GMFMC).
2. To provide technical support to the GMFMC in developing fishery management plans (FMPs), amendments, stock assessments, and technical analyses.

Status Report:

During the period from July 1, 1994 through June 30, 1995, the Mississippi Department of Marine Resources provided technical support to the GMFMC in the development of FMPs, amendments and technical analyses and was represented at meetings and functions relevant to GMFMC matters as indicated:

July 11 - 14: Mr. Joe Gill participated in the Gulf of Mexico Fisheries Management Council meeting in Islamorada, Florida.

August 10: Mississippi closed territorial waters to commercial harvest of large coastal sharks, in accordance with the shark FMP.

September 7: Mississippi opened territorial waters to commercial harvest of large coastal sharks, in accordance with the shark FMP.

September 19 - 22: Mr. Joe Gill participated in the Gulf of Mexico Fisheries Management Council meeting in New Orleans, Louisiana.

October 3: Mississippi closed territorial waters to commercial harvest of king mackerel, in accordance with the pelagic fish FMP.

October 11: Mississippi closed territorial waters to commercial harvest of large coastal sharks, in accordance with the shark FMP.

November 5: Mississippi reopened territorial waters to commercial harvest of large coastal sharks, in accordance with the shark FMP.

November 14-17: Dr. Fred Deegen participated in the Gulf of Mexico Fisheries Management Council meeting in San Antonio, Texas.

January 1: Mississippi opened territorial waters to commercial harvest of large coastal sharks, in accordance with the shark FMP.

January 16 - 19: Mr. Glade Woods and Mr. Tom Van Devender participated in the Gulf of Mexico Fisheries Management Council meeting in Houston, Texas.

February 16: Mr. Glade Woods and Mr. Tom Van Devender met with Dr. Tom McIlwain and Ken Savastano, NMFS, to evaluate Mississippi's role in distributing a permit to trawl for shrimp in the EEZ.

February 24: Mississippi opened territorial waters to commercial harvest of red snapper, in accordance with the reef fish FMP.

March 14 - 16: Mr. Glade Woods participated in the Gulf of Mexico Fisheries Management Council meeting in New Orleans, Louisiana.

April 26: Mississippi closed territorial waters to commercial harvest of red snapper, in accordance with the reef fish FMP.

May 8-12: Mr. Glade Woods participated in the Gulf of Mexico Fisheries Management Council meeting in Tampa Bay, Florida.

June 10: Mississippi closed territorial waters to commercial harvest of large coastal sharks, in accordance with the shark FMP.

ADMINISTRATIVE DIVISION

The principal objective of this program is to provide the necessary administrative support services for Department of Marine Resources operations along the coast. While this program is largely one of providing maintenance services for existing agency activities, there were a number of developmental activities pursued over the fiscal year that will ultimately serve to improve overall agency function.

Support services over the past fiscal year included data-processing and microcomputer support for day-to-day Department activities. A new time accounting system for federal grants administration was implemented during this fiscal year. Acquisition of additional computer support was also accomplished during this time frame. This additional equipment should enable the DMR to increase both the timeliness and efficiency of its response to both in-house and public requests for support assistance.

Project Title: Business Services

Project Abstract: This project provides general accounting support for the agency to include accounts payable, accounts receivable, revenue support systems, general ledgers, GAAP financial reporting payroll, budget/appropriation assistance, bank reconciliations, cash management, federal grant accounting, SAAS table maintenance, and over-all accounting. Our staff is responsible for processing payroll and maintaining time, attendance, and leave records. We also coordinate agency support functions of purchasing, property inventory, and operational expenses, as well as accounting for licenses and the sales of licenses.

Project Objectives: It is the mission of the Business Services Program to provide administrative support required by other divisions within the department to meet their goals and objectives.

Status of Progress Toward Objectives: With the newly created Department of Marine Resources, the Business Services Division has been challenged to provide support services previously carried out by the Department of Wildlife, Fisheries & Parks. During the last year we have successfully implemented the processing of state payroll, a new time, attendance and leave program, reduced the amount of time taken to process accounts payable paperwork, produced the FY1997 budget request, and maintained inventory control.

MARINE FISHERIES DIVISION

By statute, the public policy of the state regarding seafood is "to provide...modern, sound, comprehensive...law to be administered by specialists...to take action as may be necessary to help protect, conserve and revitalize seafood..." The Marine Fisheries Division provides this level of specialization to the Commission on Marine Resources in carrying out its authorized jurisdiction over all marine aquatic life, including the regulating of fishing seasons, setting size limits and gear for taking all finfish, crabs, shrimp, oysters, and other marine species.

Overall Division objectives encompass all marine management objectives (*i.e.*, to design and initiate projects for data collection and analysis of that data to produce stock size estimates, develop management recommendations based on those stock estimates, monitoring of stocks through fishery-independent and fishery-dependent methods, act as liaison between state and regional or federal management programs, and any non-management activities including public education and technical assistance to individuals and government agencies. Specific projects conducted within the Marine Fisheries Division and their status are as follows:

Project Title: Marine Fisheries Management

Project Objectives: The Saltwater Fisheries projects and activities coordinated through this program include:

1. To design and initiate projects for the collection and analysis of data required for population dynamics estimates, and other fisheries management related projects as may be required.
2. To develop management recommendations based on specific criteria.
3. To monitor the existing condition of the stocks and the fisheries that depend on them.
4. To provide information transfer and liaison activities with regional fisheries management entities and others.
5. To provide technical support to the Mississippi Commission on Marine Resources in developing fishery management plans, amendments, stock assessments, and technical analysis.
6. To provide a state representative to serve on fisheries related boards, committees, panels, etc. as may be required.
7. To provide for administrative services, general maintenance, the locating of suitable funding sources, and other fisheries management support services as may be required.

Status Report: During FY1995 the Saltwater/Marine Fisheries Division drafted changes to Ordinances and opening and closing orders; Ordinance 1.007 (Regulation of shellfish sold in retail stores operating in conjunction with a processing plant or seafood market.); Ordinance 7.014 (Allowed the filleting of certain species of fish by commercial shrimpers and changed the minimum size of red drum from 16" to 18"); Ordinance 5.009 (Restricted times and areas where gill and trammel nets could be used in MS marine waters); Ordinance 7.015 (Prohibited commercial fishing for finfish north of the CSX railroad bridge in the three coastal counties. Established minimum size/bag limits on amberjack, red snapper, and banned the possession of jewfish.) Ordinance 6.005 (Prohibits live bait shrimping north of the CSX railroad bridge.) Ordinance 4.004 (Prohibits commercial crabbing north of the CSX railroad bridge.) Ordinance 2.009 (Banned the use of bib trawls from January 1 through the third Monday in August.) Attachment E of Ordinance 1.007 (Rules and regulation for oyster leasing standardized the size and dimensions of lease sites.) Ordinance 2.010 (Prohibited recreational shrimp trawling within one mile around the Gulf Islands National Seashore barrier islands.) Public notices opening and closing the commercial seasons for shrimp, oysters, king mackerel, red snapper, red drum, and sharks.

During FY1995 2,000 cubic yards of oyster shell were deployed on the north side of Deer Island to develop a low profile reef for recreational anglers. Saltwater Fisheries personnel served on regional management activities of the Gulf States Marine Fisheries Commission including: The Mullet and Spotted Seatrout Technical Task Forces, Artificial Reef, Data Management and Recreational Fishery Subcommittees, the Technical Coordinating Committee and the State/Federal Fisheries Management Committee. Saltwater/Marine Fisheries personnel also participated in the GSMFC's Southeast Area Monitoring and Assessment Program (SEAMAP). The division was instrumental in preparing grant documents and proposals to secure funding for fisheries management projects Sport Fish Restoration Act, Cooperative Fishery Statistics Program, and the Interjurisdictional Fisheries Act. Division personnel also responded to various requests from other government agencies and the general public.

Project Title: Marine Fisheries Statistics

Project Objectives:

1. To collect commercial fisheries landings and catch data for Mississippi in a timely manner.
2. To collect biological data for selected commercially important finfish species.
3. To obtain boat trip information and biological statistics on migratory pelagic and reef fishes such as red snapper, grouper, and amberjack and collect otoliths from red snapper.

Status Report: Fisheries landings data have been collected weekly and monthly according to schedule. The data was processed, edited, and submitted to the National Marine Fisheries Services in accordance with established data handling procedures. Fisheries landings data are an important part of the fisheries management process, both as an indicator of potential problem areas and as a gauge of the success of existing fisheries regulations and practices.

Biological data for selected commercially important finfish species was collected from the major fish houses along the Mississippi Gulf Coast. Some processing of this data was accomplished, while the remainder will be processed as personnel time permits. Some of the information so collected will be utilized in the development of various fishery management plans, both on a state and regional level.

Information for selected pelagic and reef fishes was collected from the major landing sites for these species on a monthly basis. This information was submitted to the National Marine Fisheries Service for inclusion in their Trip Information System. This data is utilized by both state and federal fisheries managers to properly manage these valuable resources.

Project Title: Monitor & Assess Shrimp Populations

Project Objectives:

1. To conduct, in a timely fashion, an on-going standardized shrimp sampling program that provides needed biological data.
2. To perform data analysis on the biological information.
3. To make recommendations on shrimping seasons and area openings and closures.

Status Report: Shrimp sampling was conducted as required for commercial, recreational and live bait shrimping. Few areas where shrimp remained sublegal-size were kept closed as sampling of those areas continued. These areas were eventually opened as the average size increased. Sampling for live bait shrimping was also conducted in St. Louis Bay, Biloxi Back Bay, and in the Pascagoula River System. These areas were opened and closed in accordance with established criteria and state statute.

Project Title: Mississippi Sound Creel Survey

Project Objectives: The primary objective of this project is to conduct a point access creel survey of sport boat fishermen. Specifically, this project is designed to provide information on relative pressure at boat launch sites and piers along the Mississippi Gulf coast. Data on species composition of the catch, size frequency distribution of economically and recreationally important finfish, estimates of total fishing pressure, estimates of total catch and estimates of catch per unit of effort (CPUE).

Status Report: A total of 22 aerial counts were conducted on 42 boat launch sites and 39 pier and jetty sites. They were used to determine relative pressure at each site for development of random weighted probabilities. The probabilities were used to schedule creel surveyors at the sites that received the most boat pressure. Pier and jetty counts were conducted this year for use in the following year. Over 560 interviews were conducted from sport boat trips along the Mississippi Gulf Coast.

Project Title: Shellfish Sanitation

Project Objectives: Oysters, as sessile filter feeders, are subject to the influence of environmental conditions to a greater extent than mobile fisheries. Consequently, oyster landings can change dramatically from year to year according to the quality of the water. In addition to fluctuations in the amount of rainfall, problems with upland pollution can render abundant supplies of oysters unavailable for harvest. During the oyster season field sampling trips are made to stations located over the oyster reefs to collect water samples which are analyzed for fecal coliform content. Opening and closing of the reef areas is based on the amount of fecal coliform in the water column at the time of sampling. Multiple stations are sampled in each reef area (sub-area) and two consecutive clean samples separated by at least forty-eight hours must be obtained from each area in order to be opened. Oyster harvesting is closed after significant rain events until it was determined that the water quality had improved to allow harvesting to resume. Water quality samples are obtained throughout the year to classify shellfish growing waters.

Along with monitoring the water quality of the oyster reefs, other work performed on the reefs involves revitalization of the reef. This includes reef turn over, oyster relaying and the planting of cultch material.

Status Report: A total of 292,109 sacks of oysters were harvested during the 1994-1995 season. Mississippi State oyster harvesting waters are divided geographically into eight (8) areas which are monitored closely and opened and closed accordingly.

Project Title: Scientific and Statistical/Technology Applications

Project Objectives: The mission of the Scientific and Statistical/Technology Applications Division is to assist the processing and distribution activities of the Mississippi seafood industry in providing quality, wholesome, and safe seafoods to consumers; to aid in creating new job opportunities and economic worth in south Mississippi through the application of new technologies, particularly aquaculture technologies; and to conduct economic evaluations of selected coastal/marine resources and activities to aid in making resource management decisions.

Status Report: The following are the programs of the Technology Applications Division: (1) Seafood Quality Inspection-Processing and Distribution; (2) Seafood Technical Assistance; (3) Aquaculture and Non-Seafood Technical Assistance; (4) Economic Analysis of Coastal/Marine Activities; (5) Support Work for the Executive Director and other Divisions Within the Mississippi Department of Marine Resources; (6) Support Work for other State and Federal Agencies; and (7) Divisional Administrative Activities.

Seafood Quality Inspection Activities: Mississippi seafood processing, storage, and distribution activities were inspected to maintain compliance with sanitation regulations with the following benefits realized:

1. Consumers of Mississippi seafoods that are inspected are provided safe and wholesome seafood products.
2. The inspection program and compliance with its standards allow the interstate shipment of Mississippi shellfish and thus provide expanded marketing opportunities that are critically important to the economic vitality of the Mississippi shellfish industry.

The following seafood processing facilities were inspected and provided technical assistance:

Type of Seafood Business	Number
Oyster	35
Shrimp	28
Crab	20
Scallops	1
TOTAL	84

Project Title: Interjurisdictional-Monitoring and Assessment of Selected Mississippi Marine Resources

Project Objectives: To monitor and assess adult and large juvenile finfish species comprising fisheries resources in Mississippi's estuarine and marine territorial waters.

Status Report: In FY1995, the DMR received federal funds made possible from the Interjurisdictional Fisheries Act of 1986 (PL 99-659) and subcontracted with the Gulf Coast Research Laboratory for the work conducted for this project. This is an ongoing project that samples the estuarine and marine biota with gillnets, dredges, trawls, beam plankton nets and seines. Monthly samples utilizing variable mesh sizes and located at different habitats yielded information on various life history stages of the major species exploited in Mississippi estuarine and marine waters. Investigations of biological and environmental data in this project include collection and analysis of data on commercial species of marine shellfish and finfishes in Mississippi territorial waters; biological data collection of certain select fishes with emphasis on mark/recapture studies, reproductive state assessment, otolith collections for age and growth studies monitoring shrimp postlarvae and juveniles in coastal Mississippi waters; sampling survey of portunid crabs; continued monitoring of near shore red drum populations and commercial shrimp monitoring.

Project Title: Investigations of the Cobia (*Rachycentron canadum*) in Mississippi Marine Waters and Adjacent Gulf Waters

Project Objectives: The project objectives are to determine seasonal movement patterns and growth by utilizing an extensive tag and release program within Mississippi marine water and adjacent Gulf waters.

Status Report: In FY1995 the DMR received federal funds made possible by the federal aid in Sport Fish Restoration Act (16 U.S.C. 669-669i) 50 CFR Part 80, from the U.S. Fish and Wildlife Service. Part of these funds were passed on to the Gulf Coast Research Laboratory (GCRL) for the study of cobia. Tagging fish to study movement patterns is being accomplished by GCRL staff, private fishermen, and charter boat fishermen along the Gulf Coast. The Gulf Coast Research Laboratory staff is currently collecting, slicing, and reading otoliths for age determination and back calculating lengths at annular formation for growth estimates. Aspects of reproductive biology, which have been done and are ongoing, are (1) time of peak spawning; (2) ovarian maturation phases; and (3) egg counts for fecundity estimates. Six scientific publications and many popular articles have been written on this research.

Project Title: Striped Bass Restoration Program for the Pearl and Pascagoula Rivers of Mississippi

Project Objectives: The primary objective of this study was to restore the striped bass population to coastal waters of Mississippi. Secondary objectives include monitoring and evaluation of the stocking effort.

Status Report: The project is funded through monies made available through the BMR to the Gulf Coast Research Laboratory by the Anadromous Fish Act (PL 89-304) and the Federal Aid in Sport Fish Restoration Act (16 U.S.C. 669-669i) 50 CFR Part 80. The project is ongoing and in FY1995 over 12 million striped bass fingerlings were stocked in the coastal tributaries of Mississippi. Evaluation of tag returns from fish tagged in previous years and interviews with sport fishermen, commercial fishermen, and fish camp operators indicate an increase in the striped bass population as a result of the restocking program.

Project Title: Assessment of the Red Drum Spawning Population from Estimates of Reproductive Success

Project Objectives:

1. To continue monitoring changes in the offshore red drum population that resides in coastal waters between the Mississippi River delta and Mobile Bay (*i.e.*, the spawning stock that produces fish which support the near shore/estuarine Mississippi red drum sport fishery).
2. To continue the time series of spawning biomass estimates which were begun in 1986.
3. To further refine and improve these spawning biomass estimates.
4. To continue tracking the effects of both state and federal management regulations, in particular Mississippi's size and bag limits which have been designed to increase escapement of maturing red drum from inshore sportfishing pressure.

Status Report: The collection of larval red drum samples on offshore spawning grounds provides data on larval abundance and survival which is needed to estimate egg production. Ichthyoplankton samples and various environmental parameters were collected and sorted during two cruises in September 1994 in the coastal and inner shelf waters between Chandeleur Sound and Mobile Bay from the R/V *Tommy Munro*. Indices of larval abundance of red drum indicate that the stock sizes are increasing.

Project Title: Spotted Seatrout Sport Fish Studies in Mississippi

Project Objectives:

1. Assess and monitor the population of adult/sub-adult spotted seatrout in Mississippi coastal waters using protocols established in previously completed work.
2. Investigate and delineate the male:female ratio as it occurs in juvenile and sub-adult spotted seatrout in Mississippi coastal waters.
3. Tag and release spotted seatrout in Mississippi coastal waters in order to acquire information on seasonal movements within coastal Mississippi estuarine systems.
4. Coordinate a series of public workshops to provide for the exchange of information on fishery research and management procedures regarding the spotted seatrout sport fish fishery in Mississippi coastal waters.

Status Report: Field sampling utilized a multi-mesh gill net and hook and line equipment sampling at various stations along the Mississippi coastline. All the fish collected were returned to the laboratory for processing which included measuring length, total weight, sex, maturity, otoliths were removed for age determination a total of 109 fish were sampled during FY1995. An additional 78 smaller specimens were taken to augment the database for growth estimates and further delineate the male:female ratio at younger ages. Approximately 100 local fishermen have participated in the tagging program and over 200 fish have been tagged and released. Five recaptured fish have been reported to date.

COASTAL ZONE MANAGEMENT/PLANNING AND POLICY

The primary objective of this program is to implement the provisions of the Mississippi Coastal Program (MCP). The MCP is legislatively mandated in Mississippi Code, Section 51-15-6 and was approved by the federal government under provisions of the Coastal Zone Management Act (CZMA) of 1972, as amended and adopted as state policy. Coupled with coastal management responsibilities are those needed to carry out the mandates of the amended Marine Litter Act of 1989.

Project Title: Coastal Zone Management Assistance

Project Objectives:

1. Develop grants and maintain new and existing programs for DMR
2. DMR Advanced Planning/Strategic Planning
3. Marine Projects/Programs Implementation and Evaluation
4. New Marine Program Development
5. DMR Policy Development (internal and external) and Coordination
6. Provide Technical Assistance to other DMR operations, provide assistance to other state agencies, cities and counties or local units of governments. (Port Authorities, SMA's maintenance and new plans, Waterfront Access Studies)
7. Prepare and maintain MOU/MOA's
8. Track national legislation pertaining to coastal and marine resources management.

Status: The DMR received federal funds from the Office of Ocean and Coastal Resource Management to meet coastal management objectives. Funds were used to provide administration support, purchase equipment, and cover the cost of various office expenses and travel. Funds were used for legal assistance through the Attorney General's office. Coastal Management staff participated in two coastwide cleanups and reviewed all major federal actions in the coastal

zone to determine if the activities were consistent with the state's coastal management plan. This review included dredging projects and oil and gas activities in the Outer Continental Shelf.

Grants were given to the two marine museums to conduct public outreach and public education programs in the coastal area. Public access sites along the coast were constructed and public service announcements were produced.

Oil and gas technical objectives included the review of all oil and gas activities in Mississippi's coastal zone to ensure compliance with state policy, the development of regulatory guidelines to protect coastal resources from impact associated with oil and gas development, and the preparation of a comprehensive oil spill response plan for Mississippi's coastal waters.

The Coastal Management staff conducted reviews, participated in meetings, and initiated revisions to the state's oil spill contingency plan. Staff continued to track changes in federal oil spill legislation for potential application to the Mississippi Sound and other state waters and coastal wetland areas. Because of the limited oil and gas activities within the state's coastal waters, much of the staff's attention was directed to activities occurring in federal waters in the Outer Continental Shelf.

In addition to both financial and technical support to the local coastal communities coastal zone management assisted in the "Clean Vessel Act." Funds were passed to local marinas, both coastal and inland, to purchase and install marine pumpout facilities that remove sanitary waste from on-board holding tanks on boats and vessels.

WETLANDS/COASTAL ECOLOGY DIVISION

This program's primary objective is the protection and management of the state's coastal wetlands resources. Secondary objectives include policy development and implementation, habitat enhancement, regulatory guidance, and public education. The following projects and their status reflect the activities of the division:

Project Title: Wetlands Education and Protection

Project Abstract: The Department of Marine Resources continues efforts to protect coastal wetlands and, educate the public about the values of coastal wetlands.

Project Objectives: This project's primary objective is the protection and management of the state's coastal wetlands resources. Secondary objectives include policy development and implementation, habitat enhancements, regulatory guidance and public education.

Status of Progress Toward Objectives: The Coastal Management staff achieved project objectives during FY1995 by administering the provisions of the Coastal Wetlands Protection Law and the Mississippi Coastal Program. Initial efforts to improve the regulatory provisions of the law were successful and legislative changes in the law eliminated requirements that created confusion in the public section. There was a high level of cooperation among state and federal resource agencies, and significant emphasis was placed on habitat restoration and enhancement activities during FY1995. The wetlands staff has participated in a variety of public education efforts, providing specific wetland related information to groups and the general public. Three new staff members were hired during the period.

The staff conducted site inspections and environmental assessments, sponsored meetings and acted on a total of 632 wetlands cases in FY1995 that included addressing the near shore impacts brought about by dockside casino gaming and related coastal development.

Project Title: Tidelands

Project Abstract: This project is being developed to provide new and extra programs of tidelands management.

Project Objectives: Special funds for this project are disbursed to the Department of Marine Resources from the Secretary of State's Office for new and extra programs of tidelands management, such as conservation, reclamation,

preservation, acquisition, education or the enhancement of public access to the public-trust tidelands or public improvement projects as they relate to such lands.

Status of Progress Toward Objectives: During the past year funds have been expended to initiate efforts to establish a National Estuarine Research Reserve in Mississippi, a Marsh Creation Project, water quality improvements in Bayou Cumbest, pier design, reef study, land acquisition, and a derelict vessel survey.

Project Title: Coastal Wetlands Restoration

Project Abstract: This project will serve to acquire critical coastal habitat as part of the coastal preserves program.

Project Objectives: This project "Grand Bay Bioreserve: Planning and Acquisition" is a cooperative effort between the U.S. Fish and Wildlife Service, The Nature Conservancy, and the Department. Total funding for the project is \$200,000. The original two-year project has been expanded. Project objectives include the acquisition in fee simple of approximately 1,000 acres of wetland habitat in eastern Jackson County. These acquisitions will serve to connect state and federal properties in the area and will allow for coordinated management efforts to be developed. Acquired parcels will be part of the Bangs Lake Coastal Preserve and adjacent to the Grand Bay National Wildlife Refuge.

Status of Progress Toward Objectives: Three land appraisals have been conducted on each of 14 parcels in the project area. Title work on these properties continues on these parcels and closing on several parcels is anticipated within the next several months. Nearly 1,000 acres have also been secured by The Nature Conservancy as part of this project. A task force has been established that will offer management recommendations for the Bangs Lake and Grand Bay reserves. Additional landowner contracts, appraisals, legal work and several more acquisitions are planned for the near future. Acquired properties will be incorporated into the state's coastal preserve program and the natural area register.

Project Title: Hancock County Marshes

Project Abstract: The project will serve to acquire coastal habitat as part of the coastal preserves program in southwest Hancock County.

Project Objectives: The project will eventually allow the state to acquire approximately 5,000 acres of habitat in Hancock County. Staff is coordinating efforts to purchase through the Mississippi Nature Conservancy.

Status of Progress Toward Objectives: This project was active for a couple of months in FY1995, worked on landowner contracts, priorities, appraisals and option development. Purchases should be made during next 12 months.

Project Title: EPA Tax Forfeited

Project Abstract: The project will help identify critical wetland habitat currently on state list of tax forfeited properties.

Project Objectives: Objectives include hiring staff, training, sponsoring two workshops, mapping tax forfeited lands, identifying priorities, and wetland evaluations.

Status of Progress Toward Objectives: Completed objectives include hiring staff, sponsoring training workshops, mapping hundreds of parcels, extensive wetland evaluations, transferring certain properties to state, and removing wetlands parcels from tax-forfeited list. Extensive coordination with Secretary of State's office.

PUBLIC TIDELANDS TRUST

Mississippi Code Annotated 29-15-9 (Rev.1990) provides for the disbursement of Public Trust Tidelands Funds to the Department of Marine Resources for certain activities for new programs for tidelands management. Such programs may include wetlands research, acquisition, conservation, and the enhancement of public access to the public trust tidelands status report.

A total of over \$300,000 in tidelands funds was expended in FY1995 for fourteen projects ranging from sunken vessel identification to pier and boat ramp repair to low profile reef building.

Portions of the tidelands funds were used to match a U.S. Fish and Wildlife service grant for pine savanna acquisition and for a wetlands research project. Additional tidelands monies, in excess of \$3.0 million, were to be allocated to approximately fifteen new projects in the new FY1996 budget cycle.

LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

OFFICE OF FISHERIES

The Louisiana Department of Wildlife and Fisheries (LDWF) Office of Fisheries' mission is to manage, protect, conserve, and enhance the fishery resources and associated aquatic habitat of the state of Louisiana to provide maximum biological, social, economic, commercial, and recreational benefits for Louisiana and the nation. Program activities in support of these goals are described as follows:

SHELLFISH PROGRAM

The LDWF Marine Fisheries Division continues its long-term fishery independent trawl sampling throughout coastal Louisiana. Data from these samples were used to set season frameworks for both the fall and spring inshore shrimp seasons and the winter offshore shrimp season closure. Additionally, an extension to the 1995 Fall season was granted in all of the inshore waters east of the Mississippi River until the end of January, 1996. Breton and Chandeleur Sounds were left open until the end of March, 1996 to protect overwintering white shrimp until they reached a larger size.

Shrimp Seasons

Offshore. The state's offshore territorial waters remained open during most of 1995. The offshore area from the Inside-Outside Shrimp Line out to three miles was closed from Bayou Lafourche westward to Freshwater Bayou from February 15 through May 1, 1995.

Inshore. The 1995 Spring Inshore Shrimp season opened as follows: Zone 1 opened on May 15, 1995. Part of Zone 1 was closed July 8 through 15, 1995. Zone 2 opened on May 15, 1995 and closed on July 1, 1995. Zone 3 opened on May 29, 1995 and closed on July 15, 1995. Conditions looked good and production in Zones 1 and 2 was excellent. Zone 3 had poor production throughout the spring season.

Good conditions during the late winter and early spring contributed to the good catches. Strong southeast winds during the early spring resulted in good larval transport into the interior marshes. High salinities and warm water temperatures during late April and early May resulted in good survival and rapid growth. Brown shrimp began showing up in samples in the later portion of March about one or two weeks earlier than 1994. Water temperatures were above 20 degrees centigrade during the latter portion of March. This was about two weeks earlier than 1994.

The ten part-per-thousand line appeared to be pushed further inshore than in 1994, due to good southeasterly wind flow and low Mississippi River discharge. Rainfall during March was high but was very low during April and seemed to have little affect on salinities.

NMFS preliminary landings data indicated that landings from January through June were about 28.9 million pounds (headless). This was up considerably from 1994, and higher than any of the previous four years.

The 1995 Fall inshore shrimp season opened on August 21, 1995 statewide and closed December 18, 1995 in Zones 1 and 3. Zone 1 was extended to January 31, 1996 to take advantage of some large white shrimp which were still in Lakes Pontchartrain and Borgne. Breton and Chandeleur Sounds were extended until April 1, 1996 to hopefully allow for the harvest of pink shrimp which generally show up in those areas sometime between late January through early April. Department samples showed good recruitment of white shrimp. Catches at the start of the season were excellent. Catches remained good into the fall, and the passage of cold fronts provided some very good fishing days well into the latter part of the Fall. Zone 1, in particular, experienced one of the best seasons in recent times. Overall production of white shrimp was good throughout most of the state. Poor seabob catches were reported throughout the fall. Preliminary landings data from the NMFS indicated that shrimp landings during July through November were considerably higher than 1994.

Due to the mild weather conditions, the LDWF recommended an extension of the fall season in Zone 1 east of the Mississippi River. That portion of the state's inshore waters remained open until January 31, 1996. Additionally, Breton and Chandeleur Sounds will remain open until March 31, 1996.

Landings

Preliminary landings data from the NMFS indicate total landings of approximately 60 million pounds headless for all shrimp species combined from January-November. This is roughly 5 million pounds higher than 1994, which was an average year.

Task Forces

The LDWF worked with the Shrimp and Crab Task Forces. The Crab Task Force proposed several pieces of legislation directed at improving the industry. A prohibition on night shrimping in Vermilion and East and West Cote Blanche Bays was supported by both task forces and proved very successful in reducing conflicts between shrimpers and crabbers.

MOLLUSC PROGRAM

Oyster Seasons

The 1994/1995 oyster season on Louisiana's public oyster seed grounds and the Hackberry Bay, Bay Gardene, Bay Junop oyster seed reservations opened one-half hour before sunrise September 7, 1994. The Sister Lake Oyster Seed Reservation remained closed during the 1994/1995 oyster season.

There was an area on the public grounds east of the Mississippi River in the lower Black Bay area set aside for sacking as prescribed by Act 46 of the 1992 Legislative Session.

Public grounds in Calcasieu and Sabine Lakes opened one-half hour before sunrise on October 1, 1994, and remained open until one-half hour after sunset on April 30, 1995, with the Secretary of the LDWF having the authority to extend the season to compensate for health closure days.

Oyster production for 1994-1995 continued on an above average trend, particularly on the public grounds east of the Mississippi River.

Lease Auction

During the 1994/1995 year, 474 oyster lease applications for survey, 395 were surveyed, and 405 new oyster leases were issued. Oyster lease fees totaling \$757,604 were collected.

An auction of 151 delinquent oyster leases of 7,829 acres was held. Of that total, 142 leases were sold totaling 6,316 acres for \$157,496.

Disaster Oyster Restoration Program

A \$5.1 million federal grant was obtained through the Dire Emergency Supplemental Appropriations Act (P.L. 102-368) to restore oyster resources damaged by Hurricane Andrew. The Louisiana Shellfish Restoration and Enhancement Project continued during 1994-1995 and oyster cultch planting on the Public Oyster Seed Grounds was completed during July 1995 on schedule.

Oyster Task Force

The Oyster Task Force held three coastal hearings initiated by the chairman. The hearings developed suggested legislative changes.

FINFISH PROGRAM

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

Monitoring

A comprehensive monitoring program was developed in 1985 to protect or enhance these valuable resources by providing information regarding the status of fish stocks that occur in the coastal waters of Louisiana at some time during their life cycle. Three gear types are used coastwide to sample various year classes of estuarine dependent fish. A bag seine is used to sample young of the year and provide information on growth and movement. The seine is 50' in length, 6' in depth, and has a 6'x 6' bag as an integral part of and midway the length of the net. The mesh size for this seine is ¼" bar, ½" stretched, Delta 44 knotless mesh. A gill net is used to sample juvenile, sub-adult, and adults and provide information on relative abundance, year class strength, movement, and gonadal condition. The gill net is 750' in length, 10' in depth, and constructed of monofilament. The net is composed of 5 panels, each of the following mesh sizes: (1) 150'x10', 1" bar, 2" stretched mesh, 0.4 mm diameter filament; (2) 150'x10', 1 ¼" bar, 2 ½" stretched mesh, 0.52 mm diameter filament; (3) 150'x10', 1 ½" bar, 3" stretched mesh, 0.52 mm diameter filament; (4) 150'x10', 1 ¾" bar, 3 ½" stretched mesh, 0.52 mm diameter filament; and (5) 150'x10', 2" bar, 4" stretched mesh, 0.52 mm diameter filament. A trammel net is used to provide information on relative abundance, standing crop, and movement. The trammel net is 750' in length, 6' in depth, and constructed of nylon. The entire net has a 2:1 sag, and the mesh sizes are as follows: inner wall - 1 ⅝" bar, 3 ⅝" stretched, number 6 twine; outer wall - 6" bar, 12" stretched, number 9 twine. Gill net samples are taken semi-monthly from April through September, and monthly from October through March; trammel net samples are taken monthly from October through March, and seine samples are taken monthly from January through August, and semi-monthly from September through December. Hydrological readings (conductivity, salinity, and water temperature) are taken each time a biological sample is taken. Also, estimates of cloud cover, sea state, tide, wind direction, and speed are taken each time a biological sample is taken. Samples are taken at specific locations arranged in such a manner so as to cover the beach, mid-marsh, and upper marsh areas of all major bay systems throughout coastal Louisiana. The catch and hydrological information is summarized for each coastal area on a monthly basis to give the resource managers information as to the current condition of the resource. The pertinent life history information for the important species is also used in developing analytical and predictive models.

Spotted Seatrout

Effective February 20, 1992, the Louisiana Wildlife and Fisheries Commission enacted rules concerning the commercial harvest of spotted seatrout. These rules established a season to run from 12:01 a.m., September 15 of each year until midnight, April 30 of the following year. The rules also set the commercial quota for spotted seatrout at one million pounds, and stated that the season would be closed if the quota was reached before the established ending date.

The commercial season for the harvest of spotted seatrout in state territorial waters was opened on September 15, 1994 and halted at midnight, March 6, 1995. Commercial harvest was suspended because technical projections indicated that the 1.00 million pound annual quota had been reached. Preliminary estimates indicate that harvest for the 1994-1995 commercial spotted seatrout season was 1,083,087 pounds.

Recreational harvest of spotted seatrout in 1994, as measured by the Marine Recreational Fishery Statistics Survey, was near the maximum for the period since the imposition of the present length and creel limits of 1987. The harvest was estimated as 6,366,353 fish, with an average weight of about 1.10 pounds. The average size was near the mean of other years since 1987.

Red Drum

Red drum has had official game fish status in Louisiana since 1988. Recreational harvest of red drum in 1994, as measured by the Marine Recreational Fishery Statistics Survey, was above average for the period since the imposition of the present length (16-inch) and creel (5/person) limits in 1988. The harvest was estimated as 1,448,586 fish, with an average weight of about 4.23 pounds. The mean size was slightly above average for the period since 1988. The magnitude of the recreational harvest was attributed to the large 1990-1992 year-classes.

Menhaden

Information from LDWF trawl samples has been used each year to develop a forecast for menhaden production. A comprehensive research project was instituted to improve Department forecasts. Objectives of this research are to: develop new juvenile menhaden indices that allow for earlier, more accurate forecasts; investigate the influence of environmental factors on average weight of menhaden; and provide estimates of resource abundance rather than harvest.

Using multiple regression predictive models based on results from this study, the Department presented a preliminary 1995 harvest forecast to menhaden industry representatives in November 1994. Anticipated 1995 fishing effort, newly developed juvenile menhaden indices, environmental factors, and other commercial harvest statistics were used as input data.

Projections of 1994 menhaden landings were in the 350,000 to 400,000 MT range; however, some indices suggested that one or both of the 1992 and 1993 year classes could be above average and that projections might be on the low side. Actual 1994 Louisiana landings were 669,200 MT.

Two above average year classes, 1994 (age one's in 1995) and 1993 (age two's in 1995) were estimated to comprise the 1995 fishery. The projected Louisiana menhaden landings for 1995 were in the range of 415,000 to 525,000 MT.

Black Drum

Commercial harvest figures for black drum over 27 inches were obtained from black drum permit reports by commercial fishermen. Harvest of 16 to 27 inch black drum was obtained from wholesale-retail dealer landing reports, after adjusting for their bull drum landings. For fishing year, September 1994 through August 1995, preliminary estimates indicated a harvest of 2,462,357 pounds of 16-27 inch black drum. This compares to an estimated harvest of 2,526,799 pounds in fishing year 1993/1994.

Preliminary estimates of bull drum harvest for fishing year 1994-1995 indicated 65,812 drum over 27 inches were harvested. This compares to an estimated harvest of 64,536 in fishing year 1993/1994.

Recreational harvest of black drum in 1994, as measured by the Marine Recreational Fishery Statistics Survey, was near average for the period since the imposition of the present length (16-inch total length) and creel (5/person) limits in 1989. The harvest was estimated as 149,189 fish, with an average weight of about 4.83 pounds. The mean size was near the maximum recorded for years under present regulations.

Task Forces

The Secretarial Finfish Advisory Panel was established to act as a forum for discussion of user issues. Recreational and commercial fishermen and associated industries are represented. Technical advice is provided by academic and department scientists and other specialists. The Finfish Advisory Panel was established during FY 1993-1994 and held its first organizational meeting on August 9, 1994.

The Louisiana Recreational Fishing Development Board was originally created by the Legislature in 1990 to deal only with marine fishing interests. The 1993 legislative session modified the charge of the board and expanded the participation to include freshwater fishing interests. During FY 1994-1995, the board developed a strategic plan to identify issues for the board to address.

ARTIFICIAL REEFS

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

Since the program's inception in 1986, 22 different petroleum companies have participated in the program and donated the jackets of 53 structures. In addition to the material, the participating companies also contributed \$7 million into Louisiana's Artificial Reef Trust Fund, which also represents a similar savings on platform abandonment to the industry. The reef program also developed reefs in Louisiana's inshore waters, primarily low profile reefs composed of shell.

STATE/FEDERAL COOPERATIVE FISHERY STATISTICS

Since 1990, Louisiana has collected commercial monthly landings statistics with the exception of shrimp and menhaden, which are currently collected by National Marine Fisheries Service (NMFS). Landings are self-reported by wholesale/retail dealers licensed to purchase fish in Louisiana. Louisiana also participates in the collection of trip interviews (TIP). Port samplers obtain interviews in Plaquemines, St. Bernard, Lafourche, Jefferson, and Terrebonne parishes. The information provided by landing statistics and trip interviews have been used by NMFS, the LDWF, the GSMFC, and the GMFMC to evaluate the status of various species currently under intensive management. The continuing goal of the program is to collect commercial fisheries data necessary to better manage those species of concern.

Sport Fish Restoration Program

In 1994-1995, Louisiana used the marine share of its Sport Fish Restoration Funds in two activities; (1) development of boat ramps to create access for fishermen and (2) finfish age and growth research (described under the Research Program).

HABITAT PROGRAM

Louisiana Offshore Oil Port (LOOP) Environmental Monitoring

The Louisiana Department of Wildlife and Fisheries continued long-term environmental monitoring of LOOP facilities and operations. Physical, chemical, and biological samples are collected along a transect extending from the Gulf Intracoastal Waterway to LOOP's marine terminal located 18 miles offshore from Grand Isle. Monthly samples of demersal nekton and zooplankton communities along with water chemistry and hydrographic data were collected. Sediment quality and the benthic community were sampled quarterly. The LDWF also conducted monitoring during environmental incidents such as controlled operational discharge of super saturated brine solutions and oil spills. The Department also participated in contingency planning for oil spill response and prepared draft summary technical reports of program data to detect environmental impacts of LOOP facilities.

Department of Energy (DOE)

Field sampling, data analysis, and reporting for the brine-discharge aspects of the project have been completed. A recovery sampling program will be initiated once discharges have ceased for 12 consecutive months. Development of a system to integrate DOE databases with existing standardized Louisiana and Gulf of Mexico datasets was initiated.

Southeast Area Monitoring and Assessment Program (SEAMAP)

This National Marine Fisheries Service-funded cooperative program continued in its fifteenth year. Louisiana participated in subcommittee planning and special-issue work group meetings, and conducting seasonal sample surveys. Seasonal Surveys were conducted in Louisiana territorial sea and nearshore EEZ from the Mississippi River to Atchafalaya Bay. Data were collected concerning shrimp/groundfish and zooplankton communities, and associated environmental parameters. Summer and fall surveys coincided with NMFS' annual shrimp/groundfish samples resource survey cruises in the northern Gulf of Mexico.

Oil Spill Contingency Planning and Response

LDWF continued to be active in oil spill contingency planning and response activities during 1995. Through its intra-departmental oil spill task force, the emergency notification and response system and elements of the

departmental contingency plan were tested in response to a variety of spills. Department personnel also participated with the Louisiana Oil Spill Coordinator in the development of a statewide contingency plan. The statewide plan bases spill response, in part, on a "state team" comprised of representatives of all agencies with natural resource trust responsibilities. The "team" works with the Coordinator, federal agencies, and the responsible party to protect resources during a spill event and prepare for restoration of the resources if such action is warranted. LDWF received notifications of nearly 1,000 oil spills in Louisiana, and mounted a response whenever a spill threatened wildlife or fisheries resources. The Department's response capabilities were also tested during numerous government-and industry-sponsored drills.

Statewide Hydrographic Monitoring

The LDWF, through interagency agreements with the Louisiana Department of Natural Resources and the U.S. Geological Survey, continued to collect salinity, temperature, and tide data from constant recording instruments deployed at 10 sites in coastal Louisiana. The LDWF provided data verification and maintenance of the long-term database as its role in the interagency program. The data were used by LDWF personnel in formulating management decisions concerning shrimp, oysters, and finfish. The data were provided on request to other state and federal agencies, and to university researchers.

Seismic Monitoring

The Seismic Monitoring Program's mission is to protect oysters, fish, shrimp, and wildlife from possible loss or damage due to seismic exploration. Department biologists review all seismic project requests, and seismic inspectors monitor seismic activities in the field for the purpose of protecting sensitive or special areas and resources. During fiscal year 1994-1995, a total of 82 projects were evaluated and inspected in the field.

Caernarvon Biological Monitoring

The U.S. Army Corps of Engineers, with support from the Louisiana Department of Natural Resources and the Department of Wildlife and Fisheries, has developed 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 effect of the diversion on the estuary's ability to support wildlife and fisheries resources is expected to be significant. Diversion of nutrient and sediment-rich freshwater will rejuvenate existing marsh, significantly reduce dependence on local rainfall as the principle source of freshwater input to the estuary, reduce peak salinities and induce more regularity in the seasonal salinity pattern. Project benefits involve reducing land loss rate and increasing fish and wildlife production.

The Louisiana Department of Wildlife and Fisheries conducts extensive monitoring activities in the Breton Sound Estuary. It has undertaken a biological monitoring program to accurately measure the success of the diversion project. In 1995 the Department concluded a five year post-diversion monitoring program to assess the immediate and short-term effects of the diversion on oyster, crab, shrimp, finfish, waterfowl, wildlife, and vegetation. These studies are designed to gather both fishery dependent and fishery independent data. The LDWF, along with the Corps of Engineers, is in the process of compiling this data into a report detailing the effects of freshwater input on fish and wildlife production.

Preliminary results indicate a dispersal of some estuarine species during peak diversions. Additionally, some freshwater species, particularly largemouth bass, have become more abundant than in previous years. Oyster production in the basin has increased and has not experienced the gradual yearly decreases in production typical of the 1980s.

Continued diversions have freshened the upper outfall area and have resulted in an increase in both aquatic and emergent vegetation. This, in turn, has led to an increase in the number of waterfowl in the area.

The Corps of Engineers, along with the Louisiana Department of Natural Resources, has contracted the Louisiana Department of Wildlife and Fisheries to conduct the long-term phase of the biological monitoring which is scheduled to begin in 1996.

Bonnet Carre' Freshwater Diversion Project

In 1995, personnel with the Department of Wildlife and Fisheries in conjunction with representatives from the state of Mississippi and the U.S. Army Corps of Engineers continued to develop the Bonnet Carre' Freshwater Diversion Project.

A study was initiated to evaluate the effects of MB+P-5 reduced flow plan on:

1. The existing structure as well as the proposed diversion structure
2. The method of water conveyance.
3. Fishery resources and water quality.
4. Salinities in the Pontchartrain Basin.

Additional work included:

1. Verifying the WES 3-D hydrologic model.
2. Evaluating the pooling concept.
3. Using the WES 3-D model, determine the effects on Basin salinities resulting from closure of the Mississippi River Gulf Outlet.

During 1995, the WES 3-D model was verified and can now be used to project salinities in the Basin under a number of different flow scenarios. Additionally the U.S. Army Corps of Engineers has entered into a contract with an engineering company to evaluate the MB+P-5 reduced flow scenario, and the Corps has reconvened the Ad-Hoc Panel to reevaluate the effects the reduced flow plan would have on fisheries resources in the Pontchartrain Basin.

In November 1995, the Bonnet Carre' Freshwater Diversion Project was reassigned to the Department of Natural Resources. The Department of Natural Resources has ask the Corps to reevaluate the project in light of Louisiana's overall coastal restoration strategy and to broaden its scope.

Davis Pond Freshwater Diversion Project

During 1995, the Davis Pond Freshwater Diversion project entered into the real estate acquisition phase. Additionally, the Department of Wildlife and Fisheries has completed the final comments on the Biological Monitoring Plan for the Project and submitted them to the Corps and the Department of Natural Resources for approval. Parallel contracting is being utilized to make up for lost time, and construction on the diversion structure is scheduled to begin in 1996.

State Coastal Restoration Activities

The state of Louisiana has developed a "White Paper" which outlines the state's strategy for coastal restoration, moving toward a big picture systematic approach emphasizing the construction of large scale projects while allowing the construction of smaller projects as well. Additionally, the state was instrumental in initiating two major feasibility studies: (1) to rebuild the barrier shorelines across coastal Louisiana reestablishing the barrier island functions and (2) to develop a plan to redistribute and redirect the flow of the lower Mississippi River into coastal Louisiana.

The state in conjunction with the Coastal Wetlands Planning, Protection and Restoration Act Task Force developed a methodology for prioritizing coastal restoration projects and deauthorizing projects that because of factors (*i.e.*, land rights, engineering problems, projected cost over runs, etc) did not conform to the state strategy and were unlikely to be built.

RESEARCH PROGRAM

Lyle S. St. Amant Marine Laboratory

The primary mission of the Lyle S. St. Amant Marine Biological Laboratory is to perform biological investigations needed to manage the marine fisheries. It is the only such facility along the Louisiana coast devoted to marine fisheries. Statutory law (R.S. 56:613) specifies that a biologic station for the investigation of problems affecting the fish and fisheries of Louisiana shall exist on the Louisiana Gulf Coast.

There has always been interest by other sections of the Department, and by non-Department groups, in use of the lab facilities. There are very few facilities along the Louisiana coast which can support the needs of those interested in coastal research or marine educational activities. Most of the biological and hydrological research done in the coastal environment is useful in our management of the marine fisheries. Therefore we have made it a part of our mission to support, and provide a base of operations for any research or educational groups wishing to work in the area.

Hook-and-Release Mortality

Large numbers of fish are caught and released because of size and creel limits. Accurate assessment of release mortality is important in stock assessments and the setting of regulations.

Phase One of this investigation studied the mortality of spotted seatrout and "rat" red drum caught by hook and line. The objectives of the study were to determine overall mortality rates for each species and to evaluate possible differences in mortality rates of four common fishing methods: single hook/live bait, treble hook/live bait, single hook/artificial lure, and treble hook/artificial lure.

The study examined 1,512 spotted seatrout and 743 red drum. Overall survival was 82.5% in seatrout and 97.3% in red drum. Spotted seatrout survival varied among methods from 97% with treble hook/artificial bait to 74% with single hook/live bait. Less variation in survival was seen among red drum methods with survival varying from 99% with single hook/artificial lure to 94% with a treble hook/live bait.

These results indicate that fewer red drum and spotted seatrout succumb following hook-and-release than is commonly believed, and the use of treble hooks doesn't necessarily induce excessive mortality in released fish. The survival rate of red drum below the size limit was not different from that of legal-sized fish (98% vs 96%). Seatrout smaller than the legal size limit were more likely to live (87%) than were legal fish (81%).

Phase Two of the study will examine survival in large ("bull") red drum. Since current regulations allow anglers only one red drum larger than 27 inches, many fish of this size are subject to catch-and-release.

Age, Growth, and Fecundity

To increase accuracy of stock assessments, the Laboratory has undertaken a long-term project to obtain age, growth, and fecundity data for the important marine finfish. Otoliths (ear bones) are collected by fishery independent sampling and by sampling from the commercial and recreational fisheries and are examined for annular rings (indicators of age); gonads are collected and examined to obtain fecundity information.

During 1995, over 1,500 red drum and 2,500 spotted seatrout otoliths were collected with analysis approaching 70% completion. Additional tasks for 1996 will be the collection and initial aging analysis for black drum, sheepshead, flounder, and mullet. Processing of 1,000 otoliths of each species is planned.

Cooperative Research

Two Louisiana State University groups are conducting cooperative projects at the Marine Laboratory. LSU and lab researchers have cooperated to evaluate phosphogypsum waste as a possible reef building material in a replicated pond study at the lab. The year-long field trial was successfully completed in August 1995; laboratories at LSU are

testing experimental animals recovered for possible uptake of trace levels of toxic materials present in phosphogypsum waste.

Laboratory ponds and hatchery facilities are also being employed by a group interested in cryopreservation techniques for sciaenid sperm. Storage/cryopreservation has applications in husbandry, stock supplementation, and endangered species preservation efforts. An ongoing cooperative LSU/Lab project is evaluating this technology with several of the Sciaenids, using the lab as base for collections and trials for field cryopreservation techniques.

Culture of the Cocaho Minnow

The gulf killifish (*Fundulus grandis*; known locally as bull minnow, mud minnow, or cocaho minnow) is in great demand as live bait along the northern Gulf coast, supporting a growing bait industry. The supply of wild-caught minnows rarely meets the demand. The economics of raising these fish for bait is generally favorable, at least in Texas, where several commercial culture operations exist. Less information has been compiled in Louisiana, though most aspects of the economics and biology of cocaho culture are similar to those in Texas.

The study at the Marine Lab tested the suitability of two of the commercially available materials versus Spanish moss mats. The experiment was conducted in a replicated series of 500-gallon tanks. The mat materials were donated by the manufacturers. All other equipment and materials were already in place. One type of material was found to be a significant improvement over Spanish moss, while another synthetic spawning mat material was significantly less effective than either Material I or Spanish moss.

TEXAS PARKS AND WILDLIFE DEPARTMENT

Texas Parks and Wildlife Coastal Fisheries Research Management Programs

The Texas Parks and Wildlife Department (TPWD) Coastal Fisheries Division is responsible for making management recommendations regarding the state's fishery resources within the bays and estuaries and out to nine nautical miles in the Gulf of Mexico. Estimated value of the fisheries within the four million acres of marine habitat is in excess of \$2 billion.

The goal of the Coastal Fisheries Program is to develop management plans for selected fisheries using the concept of optimum yield. These plans include recommended harvest regulations, resource stock enhancements or habitat enhancements based on fisheries independent and dependent monitoring program data utilizing the best scientific information available. The objectives of the division are: (1) to recommend management strategies for aquatic marine resources to the executive director, the Texas Parks and Wildlife Commission (TPWC), and the 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 bay, 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 functions: administration, ecosystem monitoring, science, and enhancement. In FY 1995, a total of 24 technical reports, scientific journal articles, and magazine articles about various aspects of the Texas coastal fishery resources were completed.

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.

Monitoring of the relative abundance of adult finfishes in Texas waters is accomplished through using 600 foot long gill nets with individual 150 foot sections of 3-, 4-, 5-, and 6-inch stretched mesh. Bag seines (60 feet long) and trawls (20 feet long) are used to determine abundance of juvenile finfish, shrimp, blue crabs, and associated organisms. Oyster dredges (19.5 inches wide) are used to collect oyster abundance data. Beach seines (200 feet long) and bag seines (60 foot long) are used to sample the Gulf surf zone.

Sport landings (private and party boat) and associated fishermen activities are derived from onsite creel interviews of recreational fishermen at the completion of their trips. Roving trailer and wet slips counts are used to assess relative pressure at sampling sites. Relative pressure is used to determine how often a site should be selected for a survey; higher use sites are surveyed more often than low use sites. Commercial landings are obtained from commercial seafood dealers through submission of monthly aquatic products reports.

The Perry R. Bass Marine Fisheries Research Station at Palacios provides information and techniques necessary for improvement of Texas fisheries management strategies. Effort is directed toward methods for improving fisheries management techniques which include spawning and rearing of marine organisms. Division personnel cooperate with other coastal states in marine fisheries enhancement efforts through transmittal of information and supply of available fisheries.

Activities in FY 1995 included participation in the development, review, and revision of Gulf of Mexico Fishery Management Council and Gulf States Marine Fisheries Commission management plans. Personnel participated in workshops and advisory meetings as state representatives on both the council and commission as well as other management authorities.

Recommended changes in regulations were adopted by the TPWC to ensure stability of the resources. The TPWD was given authority to extend the summer Gulf closed season to shrimping for up to 75 days. Rules were implemented that restrict at-sea transfer of shrimp from commercial shrimping vessels to other vessels. New crabbing rules were implemented that included a reduction in the number of crab traps allowed to be used at one time for commercial purposes was reduced from 300 to 200, and the number for non-commercial purposes was reduced from 300 to 6; establishing a 100-ft minimum spacing requirement for crab traps, except if tied to a pier or dock; prohibition of the use of plastic bottles as crab trap floats; and prohibition of the placement of more than three crab traps in the public waters of the San Bernard River north of a line marked by the boat ramp at Bernard Acres. Certain retail fish dealers and restaurants were exempted from submitting a Commercially Protected Finfish Invoice to the TPWD, but the exempted businesses must retain the invoice for one year. Pursuant to Senate Bill 750, license fee increases were established for certain commercial licenses whereby the increases will be deposited in a special account for the purposes of voluntary "buy back" of commercial bay shrimp boat and commercial bait-shrimp boat licenses. The minimum size limit for red snapper was increased from 14 to 15 inches while the bag limit was reduced from 7 to 5 fish, and possession limit reduced from 14 to 10 fish. Size limits for snook were increased from 20 to 24 inches and bag and possession limits were reduced from 3 to 1 fish, and 6 to 2, respectively. Rules were established setting definitions and use restrictions for the sand pump, and setting a possession of 20 ghost shrimp per person.

Statutory measures set forth by the 74th Texas Legislature included: removing cobia, king mackerel, Spanish mackerel, and wahoo from the list of commercially protected species; allowing the TPWC to delegate to the Executive Director the authority to take immediate action as necessary to modify state coastal fisheries' regulations to make them consistent with federal regulations in the Exclusive Economic Zone; establishing new authority to the TPWC and Executive Director to use license limitation in management of the inshore commercial bay and bait-shrimp fisheries. Elements of the license limitation plan were identified and items or procedures associated with the elements were specified; and creating a shrimp boat captain's license and setting requirements for obtaining such license.

A total of 1,050 survey days was spent to estimate landings and pressure of private and party boat fishermen. There were 760 gill net samples; 2,292 bag seine samples; 252 beach seine samples; 3,288 bay and gulf trawl samples; and 1,080 oyster dredge samples collected. A total of 7,361 fishes was tagged and released. About 8% were returned for rewards. The percent of tags returned was consistent with prior years.

Bycatch characterization studies for the commercial bay shrimp fishery were conducted during August-December 1994 (Sabine Lake, Matagorda Bay, San Antonio Bay, and Aransas Bay) and during May-July 1995 (Galveston Bay, Matagorda Bay, San Antonio Bay and Corpus Christi Bay). Information will be used to assess impacts of shrimping on bay marine fish and shellfish populations.

Gulf of Mexico water from Alabama to the Rio Grande were sampled to a depth of 300 feet during November 1994 and June-July 1995 with the other Gulf States and the NMFS. This effort, entitled the Southeast Area Monitoring and Assessment Program (SEAMAP), was coordinated by the GSMFC. Results of sampling were used to evaluate the closure of Gulf waters to shrimping and determine relative abundance of associated organisms.

Electrophoretic studies of the population structure of black drum and southern flounder continued as did DNA analysis of the souther flounder population. Development of a library of protein profiles of Texas fishes and shellfishes to be used for species identification and forensics continued. Studies designed to evaluate stocking of red drum continued with the stocking of "gene-marked" red drum in East Matagorda Bay and chemically marked red drum in Galveston Bay. Evaluations of spotted seatrout stocking began with the stocking of "gene-marked" individuals into the lower Laguna Madre. Collection of data to estimate age and size at maturity of black drum and red snapper were completed, and data analyses are in progress. Collection of otoliths from red drum, spotted seatrout, and souther flounder were continued to estimate age structure of these populations in Texas waters and to develop age-length keys for the three fishes.

Routine collection, editing, summarization, and publication of self-reported commercial landings data (MAPR) continued through a formal cooperative statistics agreement with the NMFS. The TPWD collected commercial landings statistics on crabs, oysters, and finfish while the NMFS continued to gather landings statistics on shrimp.

Three studies addressing information needs for management of shrimp and blue crabs continued. One study used paired-trawling to assess size of shrimp caught and bycatch in three trawls: 1³/₈-inch, 1¹/₂-inch and 3³/₄-inch stretched meshes. The second study addressed the commercial shrimp catch rate (lbs/trip), size and species composition of shrimp landed, and characterized of gear and methods used. A third study is investigating the effectiveness of various materials used in attaching degradable panels on crab traps.

Effort directed toward spawning and rearing marine fish was continued. Controlled photoperiod and temperature regime to induce sexual maturity and spawning resulted in about 28.4 million red drum fingerlings, 164 million red drum fry, 2 million spotted seatrout fingerling, and 22.7 million spotted seatrout fry being stocked into marine water. Technical information concerning fish hatchery development was provided to other coastal states in a cooperative effort to enhance coastal marine fisheries.

The Artificial Reef Program accepted one donation of an oil and gas structure, and one 60-ft tugboat during FY 1995. As a program first, the donated rig was removed without explosives by mechanical cutting 86 ft below the surface. A total of \$337,500 were added to the Texas Artificial Reef Fund. These monies were used to operate the program, maintain the sites, conduct artificial reef research, and cover liability. The program also created one new reef site, and enhanced a previous site.

A persistent algal (brown tide) bloom continues in the upper Laguna Madre area. This algal bloom began in 1990 and continues unabated. The extensive seagrass beds are at risk because of reduced light penetration. Larval fishes are negatively impacted by the brown tide, whereas larger individuals are not. Research continues on the effects of this record setting bloom.

NATIONAL MARINE FISHERIES SERVICE, SOUTHEAST REGION

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION U.S. DEPARTMENT OF COMMERCE

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

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

The NMFS is comprised of five regional offices and five centers located along the coastal United States. The Southeast Region covers the coastal states from North Carolina to Texas (including Alabama, Florida, Georgia, Louisiana, Mississippi, and South Carolina); Puerto Rico and the U.S. Virgin Islands; and the inland states of Arkansas, Iowa, Kansas, Kentucky, Missouri, Nebraska, New Mexico, Oklahoma, and Tennessee.

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

The NMFS Southeast Fisheries Science Center (SEFC) is located in Miami, Florida, with laboratories located in Miami and Panama City, Florida; Pascagoula and Stennis Space Center, Mississippi; Beaufort, North Carolina; Charleston, South Carolina; and Galveston, Texas. The SEFC conducts multidisciplinary research programs to provide management information to support national and regional programs of the NMFS and to respond to the needs of regional fishery management councils and other user groups. The center develops the scientific basis required for status of stocks and status of fisheries reports; environmental assessment and environmental impact statements for management plans and/or international negotiations; and pursues research to answer specific needs in the subject areas of habitat conservation, aquaculture, fishery engineering, marine mammals, endangered species, fishery oceanography, food sciences, and fishery economics.

Significant FY 1995 fishery actions include:

FISHERY RESOURCE CONSERVATION AND MANAGEMENT

Implemented Amendment 7 to the Fishery Management Plan (FMP) for the shrimp fishery of the Gulf of Mexico.

Implemented Amendment 5 to the Stone Crab FMP to establish a moratorium of Federal registration of stone crab commercial fishing vessels.

Implemented Amendment 2 to the Coral FMP to phase out live rock harvests and establish a live rock aquaculture system.

Implemented Amendment 7 to the Snapper-Grouper FMP to change certain minimum size limits, require charter vessels and dealers to obtain federal permits, restrict the sale and/or purchase of snapper-grouper species, specify allowable gear, and authorize permits for experimental fishing.

Implemented a regulatory amendment to the reef fish FMP that: 1) delayed the red snapper commercial season for 1995; 2) increased the red snapper recreational size limit to 15 inches; and 3) reduced the red snapper daily bag limit from seven to five.

Implemented an emergency rule to re-open the commercial hook-and-line fishery for the Gulf group of king mackerel off the Florida west coast.

Implemented an emergency rule that increased the domestic quota for royal red shrimp and prevented an unnecessary closure of this fishery.

For 1995, issued 5,365 multiple species fishing vessel permits and 417 multiple species dealer permits. Deposited \$308,085 into the U.S. Treasury from permit application fees.

Initiated Secretarial review of Amendment 8 of the Shrimp Fishery FMP of the Gulf of Mexico. This amendment sets up a regulatory process for adjusting catch for the royal red shrimp fishery.

Initiated Secretarial review of Amendment 8 to the Reef Fish FMP for the Gulf of Mexico that proposes a red snapper individual quota system (ITQ) to avoid increasingly short commercial fishing seasons.

Initiated Secretarial review of Amendment 11 of the Reef Fish FMP for the Gulf of Mexico that proposes various measures to enhance enforcement, and increases flexibility and economic benefits to the reef fish fishery.

Initiated Secretarial review of a regulatory amendment to the Reef Fish FMP for the Gulf of Mexico that proposes an 18-inch commercial minimum size limit for red grouper.

Completed extensive RIR/IRFA analysis of the economic benefits, net of all costs, of a proposed ITQ system for red snapper.

Completed costs and return surveys of reef fish harvesting activities throughout the Southeast. Data will be used in a variety of analyses to address amendments to the Reef Fish and Snapper-Grouper FMPs.

Completed a cost and return survey for Gulf of Mexico shrimp harvesting. Data to be used in shrimp bycatch reduction amendments.

Conducted a number of reviews of RIR/IRFA documents for the Gulf, South Atlantic, and Caribbean Councils that analyzed economic effects of new rules in mackerel, Queen Conch, reef fish, and shrimp FMPs.

Completed economic assessments and presented results to Council committees for most of the FMPs in force in the Southeast.

PROTECTED SPECIES MANAGEMENT

Implemented the Emergency Response Plan (ERP), developed as a condition of the November 1994 Biological Opinion on the shrimp fishery. The plan resulted in NMFS issuing four emergency rules to limit gear use in Texas, Louisiana, Georgia, and South Carolina.

Meetings were held with all the states in the southeast region in cooperation with the interstate fisheries commissions to discuss state participation in a shrimp vessel registration system.

TED training activities were conducted in two locations in Brazil.

A meeting was convened of all state sea turtle stranding coordinators to ensure timely reporting of sea turtle strandings to enable quick response to prevent elevated levels of turtle mortalities.

A final rule was published in the Federal Register requiring the use of floatation for bottom exiting TEDS and other technical amendments to the TED regulations.

A rule is undergoing agency review to restrict the use of soft TEDs and establish a TED manufacturers certification program.

An educational TED manual and placards were developed to define what constitutes a legal TED to facilitate proper application of TED technology.

A formal section 7 consultation was completed on an oil rig platform in the Gulf of Mexico with the Army Corps of Engineers (COE).

Consultations are in progress with the COE for channel dredging in the Gulf of Mexico.

Approximately 120 informal Section 7 consultations were conducted.

A final rule was produced that establishes a leatherback turtle conservation zone which will require modified TEDS at times of high leatherback turtle concentration in this zone.

Conducted continuing economic analyses to address provisions of new TED rules to replace current emergency rules.

HABITAT PROTECTION

More than 3,500 individual actions were reviewed, including requests for federal permits or licences, federal water development projects, hydropower projects, review of NEPA documents and pre-application consultations. An in-depth review of 10% of these actions indicated that 104,537 acres of wetlands were potentially impacted by the proposed work, with recommendations of restoration or creation of over 2,500 acres of wetlands.

A significant milestone was attained in the satisfactory negotiation of a settlement to the longstanding and controversial Galveston Bay Navigation Channels Project. The dredging project has been substantially reduced in scope and hundreds of acres of marshes and oyster reefs will be established as mitigation.

The SERO assisted the NMFS Restoration Center (RC) and/or NOAA in issues related to Coastal America, the NOAA/COE Memorandum of Agreement to Restore Fish Habitats (MOA) and Coastal Wetlands Planning Protection and Restoration Act (CWPPRA).

The NMFS is now responsible for the implementation of ten projects funded under the auspices of CWPPRA and cost-shared by the state of Louisiana. The cost of these projects is more than \$30 million and, in total, 20,000 acres of marine fisheries habitat is expected to be created, restored, or enhanced over a 20-year period.

COOPERATIVE AGREEMENT AND GRANT PROGRAMS

Participated in the Southeast Area Monitoring and Assessment Program (SEAMAP) and cooperative statistics program through cooperative agreements with state and interstate fishery commission constituents.

Improved communications with states, academia, public, and other user groups by publication and dissemination of a report summarizing all grant and cooperative activities performed with federal funds processed by the southeast NMFS regional office.

Enhanced the capabilities of managing federal aid programs by providing all applicants formal guidelines and application packages for all non-competitive (IJA, Anadromous Fisheries, SEAMAP, Cooperative Statistics, FMCs, Endangered Species, Atlantic Coastal Fisheries Cooperative Management Act) and competitive (MARFIN and S-K) programs.

Completed the FY 1995 MARFIN and S-K selection process. Twenty MARFIN and 11 S-K applications were selected that address high-priority southeast fishery research needs.

The 1994 MARFIN Annual Report was distributed throughout the nation.

Initiation of a \$15 million dollar Gulf of Mexico Fisheries Disaster Program with NOAA's Office of Sustainable Development. Meetings have been held with industry leaders, state fisheries directors, and Congressional staff to develop a clear focus to maximize the effectiveness of these funds.

Developed and presented a training course for all applicants for federal aid, emphasizing good research planning and cooperative recipient/NMFS activities.

Conducted the 1994 MARFIN Conference in Biloxi, Mississippi in conjunction with the Southeastern Association of Fish and Wildlife Agencies.

TEAMWORK AND COOPERATION

Appropriate actions were coordinated with fishery management councils.

Assisted the State Department in verifying the level of turtle excluder device (TED) use by countries affected by P.L. 101-162, the sea turtle conservation embargo. Venezuela and Trinidad were briefly embargoed, but with assistance from NMFS and additional training efforts, these countries were ultimately certified along with Mexico, Brazil, Guyana, Colombia, Nicaragua, Panama, Costa Rica, Guatemala, Belize, and Honduras.

The SERO represented NOAA on the Galveston Bay, Barataria/Terrebonne Bay, Tampa Bay, Sarasota Bay, Corpus Christi Bay, and Pamlico/Albemarle National Estuary Programs (NEP).

Coordinated and conducted a joint effort by the NMFS-SERO and SEFC with Texas A&M University to analyze the economic impact of management alternatives designed to conserve sea turtles while minimizing the industry and public costs.

Initiated a substantial cooperative endeavor with the Marine Recreational Fisheries Statistics Survey (MRFSS) personnel to analyze and evaluate recreational catch, landings, and effort data for the southeast region.

Continued to maintain and promote good relationships and communications with a broad range of industry groups including: Concerned Fishermen of Florida, Southern Offshore Fisherman's Association, Southeast Fisheries Association, Monroe County Fishermen's Association, Do You Care Coalition, Louisiana Shrimpers Association, Texas Shrimp Association, and Texas Inshore Fisheries Association, to name a few. These communications are frequent, involving attendance at meetings, telephone calls, small group meetings, and correspondence.

Issued numerous news releases, NOAA weather announcements, held workshops and press conferences to inform the public and fishermen of regulations and requirements for protected species.

Communicated on a regular basis with southeast fishing industry organizations, the U.S. trade representative, state fisheries and agriculture agencies, and other entities on the trade issues of importance to the southeast and the United States.

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

STATUS REPORT ON FMP RULES ¹

First Half

- Coral Amendment 2 was implemented.
- Management measures and TAC for mackerels were implemented.
- The commercial hook-and-line fishery for king mackerel off Florida was closed.
- The commercial net fishery for king mackerel was closed.
- An additional 300,000 pounds was allocated to commercial hook-and-line fishery for king mackerel off Florida.
- The commercial hook-and-line fishery for king mackerel was closed.
- Proposed and final rules for Stone Crab Amendment 5 were published.
- Emergency rule increasing the quota for royal red shrimp was implemented.
- Shrimp Amendment 7 was implemented eliminating TALFF for royal red shrimp.
- Notice of intent to prepare a SEIS for the shrimp fishery for Draft Amendment 9 was published.

Second Half

- Proposed rule for TAC for mackerels and cobia was published.
- Proposed rule for Coral Amendment 3 was published.
- Proposed rule for Reef Fish Amendment 8 was published.
- Commercial red snapper fishery closed.
- Control date for commercial stone crab fishery was published.
- Final rule for Spiny Lobster Amendment 4 was published.

COUNCIL ACTION ON FMPs

Billfish FMP*

Council reviewed billfish scoping documents and commented to NMFS on measures for Amendment 1.

Butterfish FMP

The Council has deferred action toward development of a FMP indefinitely with the condition NMFS continue to monitor the fishery and periodically advise the Council on changes in harvest and status of stock.

Coral FMP

First Quarter - Staff completed an options paper for Amendment 3 to establish a TAC of live rock for the Gulf area.

Second Quarter - Draft Amendment 3 was completed, presented at public hearings (2), and reviewed by the AP and SSC. Following public testimony the Council approved the amendment, which prohibits harvest of live rock off the Florida Panhandle and limits by quota landings during the phase-out period for harvest of natural live rock. Amendment 2 was implemented.

Third Quarter - Amendment 3 to establish a TAC of live rock for the Gulf area was submitted to the NMFS for implementation.

¹This section no longer includes summaries of rules for FMPs administered by the NMFS.

Fourth Quarter - Proposed rule for Amendment 3 was published by the NMFS. The Council heard testimony relating to reopening the live rock fishery due to losses of aquaculture live rock from red tide. The Council took no action.

Mackerel FMP

First Quarter - Amendment 7 was implemented and provided commercial trip limits for Gulf group king mackerel in Northern and Southwestern areas of the Eastern Allocation Zone. The NMFS closed the commercial fishery in the Western Zone and the commercial hand-line fishery in the Southwest area of the Eastern Zone. For the Eastern Zone for the southwest area, the hand line quota was taken in northwest Florida before the king mackerel migrated to the Keys. The Council held an emergency Council meeting by conference call. Based on the anticipated adverse socioeconomic impact on fishermen in southwest Florida who have been historically dependent on harvesting king mackerel, the Council requested that the NMFS allocate an additional 300,000 pounds to southwest Florida. The industry will present to the Council at its March 1995 meeting, management alternatives to prevent reoccurrence of this problem. The Council identified issues that should be included in Draft Amendment 8 to the FMP. A select scientific panel of experts developed SPR strategy for management of mackerels and other finfish, including overfishing and OY thresholds and strategies to achieve OY. Recommendations will be reviewed for adoption in March.

Second Quarter - The Mackerel Stock Assessment Panel prepared an assessment of the status of the mackerel stocks, considered recommendations of the Stock Identification Panel and the SPR Strategy Committee and developed recommendations to the Council on ABC for the 1995/1996 season. The commercial mackerel fisheries for the eastern zone were closed to fishing. Workshops were held with industry who recommended changes to the rules for allocating king mackerel. The Council adopted part of these and included others in the options for Draft Amendment 8 that will be considered in May. The entire commercial hook-and-line quota was taken off the Florida Panhandle prior to any fish moving into the Florida Keys. The Council met via conference call and approved an emergency allocation of 300,000 pounds for south Florida. The emergency rule was implemented by the NMFS.

Third Quarter - The Mackerel Socioeconomic Assessment Panel (SEP) reviewed the Stock Assessment Panel (SAP) report and developed recommendations to the Council on TAC for the 1995/1996 season. The Mackerel AP and SSC reviewed the SAP and SEP reports and SEFSC stock assessment information and developed their recommendation to the Councils. Recommendations included adoption of an overfishing threshold at 20 percent SPR. The Council reviewed the recommendations of SAP, SEP, AP and SSC and set TAC, commercial quotas and bag limits of mackerel and cobia stocks, after hearing public testimony on the issue. The Council recommended to NMFS that emergency action be taken to institute the new overfishing threshold. NMFS rejected this recommendation as unnecessary and requested the change be made by plan amendment. The Council prepared and submitted to NMFS a regulatory amendment/RIR to establish TACs for Gulf group mackerels and cobia for the 1995/1996 season. A control date for Gulf-group king mackerel commercial and charter/head boat fisheries was submitted to NMFS for publication. It would limit participants in those fisheries to persons in the fishery prior to the control date if a limited access system is developed for either fishery. The Council adopted options for Draft Amendment 8 that were submitted to SAFMC.

Fourth Quarter - An intercouncil meeting of Mackerel Committee members of Gulf and South Atlantic Councils was held to recommend management alternatives that should be included in Draft Amendment 8. The Council approved the alternatives to be included in Draft Mackerel Amendment 8 and scheduled public hearings and reviews by APs and SSC. The proposed rule implementing TAC for mackerels and cobia was published by NMFS. The Council requested by emergency rule that the Western Zone Gulf group king mackerel fishery be reopened with an additional quota amount of 200,000 pounds.

Red Drum FMP

The Council requested SEFSC prepare a stock assessment by February 1, 1996. The NMFS concurred with this request.

Reef Fish FMP

First Quarter - The Management Committee and the Council, in separate meetings, reviewed and approved Draft Amendment 8 for public hearings. The amendment addresses limited access for the commercial red snapper fishery. Nine public hearings were held and the amendment was received by the SSC, Ad Hoc Red Snapper AP, and Reef Fish AP. The Council reviewed observer data on survival of red grouper released from long line and fish trap vessels. The Council took action to reduce the size limit for red grouper to 18 inches and submitted a regulatory amendment to the NMFS for that purpose. The Council reviewed additional information on bag and size limit combinations for red snapper and the effects on reducing recreational landings. Based on that information, the Council rescinded its previous action on reducing the bag limit to 5 fish and requested the NMFS withdraw that portion of its pending regulatory amendment. The NMFS denied that request. The Council reviewed and approved an options paper for Draft Reef Fish Amendment 11 which will consider changes to TAC framework measure, reef fish harvest by trawl vessels, bag and size limits for various species, permitting requirements, species managed, closed seasons and other measures. The amendment will be prepared by March. The Special Management Zone (SFZ) Monitoring Team report addressing a request by the state of Alabama to establish one or more SMZs in federal waters was reviewed by the Council which deferred action on the report until the state of Alabama completed studies evaluating the existing SFZ.

Second Quarter - The Council reviewed public comment and the recommendations of the APs and SSC on Draft Amendment 8. After hearing public testimony the Council selected a license limitation system as its preferred alternative for limiting access to the red snapper fishery. The revised amendment was mailed to the 1,600 reef fish vessel permit holders soliciting their comment on the provisions of the license limitation system. Final action on the amendment is scheduled for May. In closed session the Council reviewed nominees to serve on an appeals board for resolving disputes under Amendment 8. The Regional Director, NMFS, held the Council's regulatory amendment to reduce the red grouper size limit in abeyance, citing as a reason new data that indicated the action may cause the recreational sector to exceed their allocation of grouper. The new data prepared by the NMFS was reviewed by the Reef Fish Stock Assessment Panel (RFSAP) and SSC at telephone conferences. The RFSAP report and SSC positions supported not reducing the size limit. The Council reviewed all these recommendations and, after public testimony, took action to reduce the red grouper size limit for the commercial sector only. This proposed change was submitted to the NMFS by regulatory amendment. The Council reviewed Draft Amendment 11, prepared by staff, and subdivided it into two amendments. Revised Draft Amendment 11 was approved for public hearings and the remaining management measures will be reformatted as Draft Amendment 12 for consideration at a later date. Council staff provided an analysis to the NMFS which suggested that MRFSS charter boat data for Florida appeared to greatly overestimate red snapper landings for 1993 and requested that NMFS technical personnel examine the data for errors.

Third Quarter - After reviewing comments from the public, APs, and SSC, the Council approved Amendment 8 which proposed an ITQ system for the commercial red snapper fishery. The amendment/RIR/EA was submitted to the NMFS for implementation. The Council held public hearings (10) on draft Amendment 11. The amendment was reviewed by the SSC, Reef Fish AP, and Red Snapper AP. The Council approved the amendment after hearing public testimony and submitted the amendment to the NMFS for implementation. The NMFS rejected the Council's regulatory amendment to reduce the commercial size limit for red grouper to 18 inches TL. Because of concern over the NMFS rationale for rejecting the amendment and the availability of new scientific information, the Council submitted the issue and new information for review by the Reef Fish Stock Assessment Panel (RFSAP) and SSC. The Council will consider resubmission of the amendment in July. The RFSAP and SSC also considered development of OY statements for reef fish stocks and potential data deficiencies in landing records for red snapper and grouper. Staff has prepared draft Amendment 12 for Council action in September.

Fourth Quarter - The NMFS published the proposed rule for Amendment 8 which would create an ITQ system for the commercial red snapper fishery. NMFS and Council staff developed an implementation event schedule for the ITQ system and a protocol for the ITQ Appeals Board. The Council selected appeals board members. The Council approved Amendment 11 which modified the framework procedure for setting TAC, defined OY, and modified several permit requirements for the fishery. The amendment was submitted to the NMFS for implementation. The Regional Director partially disapproved the OY definition and two of the modifications to the TAC procedure. Following reviews and recommendations by the Reef Fish Stock Assessment Panel (RFSAP) and the SSC, the Council approved a revised regulatory amendment to reduce the red grouper size limit for the commercial sector. The revised regulatory amendment

was submitted to the NMFS for implementation. The Socioeconomic Assessment Panel (SEP) was convened to specify information and analyses it would need from NMFS in order to assess the social and economic impacts of various levels of TAC for the red snapper fishery for 1996. The Council approved Amendment 12 which proposes size and bag limits for certain species. The amendment was submitted to the NMFS for implementation. The Council specified to the NMFS those reef fish stocks for which stock assessments should be prepared in FY1996. The Council agreed to provide personnel to assist the NMFS in processing the landings information that would be reviewed by the Appeals Board in implementing the ITQ system. Because of the delays encountered in implementing the ITQ system, the Council requested that the NMFS implement by emergency rule that the current moratorium and red snapper endorsement system be extended into 1996 with the commercial season to open on February 1, 1996 under the endorsement system with a quota of 1.0 million pounds and the remainder of the commercial quota to be taken under the ITQ system when that opens (about April 1), provided however, if the ITQ system is not approved by the NMFS or delayed by Congress the season will remain open under the endorsement system. The NMFS presented the results of 12-month observer studies of fish trap and longline fisheries. Based on these studies, the Council developed management alternatives to modify the current moratorium on issuance of endorsements to permits to fish with traps. These alternatives would be included in a subsequent amendment. The Council requested that the NMFS reopen the commercial red snapper fishery on date Western Zone king mackerel fishery is opened or on November 1 for unharvested quota.

Shark FMP*

First Quarter - The Council reviewed scoping documents for a FMP amendment and made its recommendations to the NMFS for management measures.

Second Quarter - No action.

Third Quarter - The Council representatives participated in the Operations Team.

Fourth Quarter - No action during this period.

Shrimp FMP

First Quarter - The NMFS approved Amendment 7 addressing overfishing definitions for royal red shrimp and white shrimp. The Council reviewed an options paper for an amendment to reduce shrimp trawl bycatch of finfish using BRDs and referred it to the SSC and Shrimp AP for review.

Second Quarter - Shrimp Amendment 7 was implemented. The options paper for an amendment to address shrimp trawl bycatch was reviewed by the SSC, Shrimp AP, and the Council. Staff was instructed to prepare a draft bycatch amendment and SEIS for Council consideration this summer. The NMFS was requested to assist in preparation of the SEIS. Council staff began preparation of Draft Amendment 8 addressing royal red shrimp. The NMFS presented the biological opinion on the shrimp fishery prepared under the ESA as a result of turtle strandings. The Council reviewed AP and SSC recommendations and set the Texas Closure at 200 miles for the 1995 season.

Third Quarter - Staff continued preparation of a draft bycatch amendment and SEIS for Council consideration this summer. The NMFS was requested to assist in preparation of the SEIS. Draft Amendment 8 addressing royal red shrimp was reviewed by the AP and SSC.

Fourth Quarter - The Council approved Amendment 8 which redefined overfishing for royal red shrimp and provided a framework measure for reassessing MSY for this stock. The amendment was submitted to the NMFS for implementation. The Council reviewed the NMFS reports on the status of shrimp stocks in relation to overfishing definitions and on the Tortugas fishery. The Council reviewed reports by the NMFS, Sea Grant institutions, and the Gulf and South Atlantic Fishery Development Foundation on recent development designs and evaluations of bycatch reduction devices (BRDs). Draft Amendment 9 will propose that BRDs be used on shrimp trawls. The NMFS also presented an ecosystem model that allows assessment of the effects of reducing the biomass of bycatch on the ecosystem. Work continued on development of a SEIS for this amendment. A contract was let to provide a social impact assessment (SIA) for the fishery and measures proposed in Draft Amendment 9.

Spiny Lobster FMP

First Quarter - The Council approved Draft Amendment 4 prepared by the SAFMC for implementing bag limits of spiny lobster off Georgia through North Carolina. The amendment was submitted to the NMFS for implementation.

Second Quarter - No action.

Third Quarter - Amendment 4 prepared by the SAFMC for implementing bag limits of spiny lobster off Georgia through North Carolina was submitted to the NMFS for implementation.

Fourth Quarter - Amendment 4 was implemented.

Stone Crab FMP

First Quarter - The SAFMC agreed to allow the Council to continue managing stone crab in the EEZ south of the Florida Keys SAFMC jurisdiction. Amendment 5, which established a 4-year moratorium on registration of vessels by the NMFS and establishes a framework procedure whereby certain rules adopted by Florida can be implemented in the EEZ by the Regional Director, was approved by the NMFS.

Second Quarter - Stone Crab Amendment 5 was implemented.

Third Quarter - The Council considered options that might assist the industry in developing a limited access system for the fishery. The Council submitted a control date to the NMFS for publication. The Florida Legislature implemented a four-year moratorium on issuance of additional permits in the fishery which is compatible with the rule implemented by Amendment 5.

Fourth Quarter - The control date for the commercial fishery was published.

Swordfish FMP*

First Quarter - A Council member served on the official delegation to the ICCAT conference in Spain. The Council reviewed the NMFS scoping document and recommended measures for management of this fishery.

Second Quarter - No action during this period.

Third Quarter - No action during this period.

Fourth Quarter - No action during this period.

Tuna FMP*

First Quarter - Council representatives attended the Bluefin Tuna Stock Assessment review meeting. A Council member served on the official delegation to the ICCAT conference in Spain. The Council reviewed the NMFS scoping document and recommended measures for management of this fishery.

Second Quarter - A Council member served on the ICCAT working group for bluefin tuna.

Third Quarter - No action during this period.

Fourth Quarter - No action during this period.

*FMPs under the regulatory authority of the NMFS. The Council has a consultation role in the development of FMPs, amendments, and rules and may convene SSC, AP, or committees for advice.

HABITAT ACTIONS

First and Second Quarters

Recommended to Corps of Engineers that the Watermark Corporation permit be denied. Requested General Counsel prepare a briefing document defining lobbying and forward to habitat protection advisory panels. Requested the states identify representatives of entities owning wetlands that are involved in managing these lands for consideration by AP Selection Committee for appointment to habitat protection APs. Provided a report to Council on Minerals Management Service (MMS) Information Transfer Meeting session on offshore mariculture. Wrote to the MMS requesting clarification of ramifications of not clean sweeping areas where platforms are removed.

Third Quarter

Based on recommendations by the Texas Habitat Protection Advisory Panel, the Council took the following actions:

- Scheduled a joint meeting of the three Habitat Protection APs to conduct a review of the potential problems occurring in shrimp mariculture that may affect native stocks of shrimp.
- Supported efforts by Texas to monitor the effects on grass carp infestation of estuarine areas and effects on ecosystem.
- Alerted state personnel of potential problems associated with introduction of exotic brown mussels into the Gulf.
- Adopted a policy in opposition to introduction of exotic species.

The Habitat Protection APs for Texas and for Florida/Alabama areas were convened.

Fourth Quarter

Based on recommendation by the Mississippi/Louisiana AP, the Council took the following actions:

- Write to the Governor commending the state of Louisiana in its coastal restoration efforts through matching funds with the Federal Coastal Wetlands Planning, Protection and Restoration Act and the Water Resources Development Act; and urge the state to find adequate and consistent sources of stating funding for continuing this effort.
- Urge the NMFS to allocate funding that would support continuation of scientists participation in the fisheries component of the ongoing National Biological Survey marsh management studies.
- During a future advisory panel meeting invite someone from the maritime industry to discuss possible considerations to prevent importing exotic species in ballast water. Include the USCG and the FDA. Broaden discussion to include pathogen, such as *vibrio*.
- Distribute Council's policy on exotic species to all Gulf states by formal letter with rationale.

Based on recommendations by the Florida/Alabama AP, the Council took the following actions:

- Request from Corps of Engineers headquarters the regulatory authorities allowing consideration of environmental concerns related to permitting activities in federal waters offshore of state boundaries.
- Urge the Corps of Engineers and Environmental Protection Agency to conduct a risk assessment of proposed mariculture operations, with non-indigenous species in or adjacent to the Gulf of Mexico, prior to permitting the activity.
- Reassess current mariculture policy in view of recent developments offshore and adjacent uplands.
- Scheduled presentations concerning Florida seagrass damage by water craft and Florida Bay before full Council.

The Council deferred the joint meeting of the Habitat Protection APs to the January 1996 Council meeting to allow Council members to attend this session dealing with environment problems associated with shrimp mariculture.

This provides time for further assessment of dangers of infecting native shrimp with pathogens from non-native cultured species.

OPERATIONAL AND OTHER ACTIVITIES

Budget

The Council selected Rivero, Gordimer, and Company to conduct the audit for the FY 1993 and FY 1994 cooperative agreements. Council approved and staff prepared an amendment to the FY 1994 budget.

The audit by Rivero, Gordimer, and Company specified no discrepancies in accounts for or compliance with the FY 1993 and FY 1994 cooperative agreements. Council approved and submitted the FY 1996 budget to the NMFS.

Due to delays in implementation of Reef Fish Amendment 8 and completion of Draft Shrimp Amendment 9/SEIS, certain activities scheduled in FY 1995 could not be completed. The costs of these activities and of the joint Habitat AP meeting were deobligated from the FY 1995 cooperative agreement and will be added by grant amendment to the FY 1996 cooperative agreement.

Other Meetings

Council members and/or staff participated in the following meetings:

First Quarter

- Statistical Subcommittee of GSMFC
- G&SAFDF Bycatch Steering Committee
- Scoping meetings on tuna, shark and swordfish
- MMS Information Management Transfer Meeting
- MARFIN Conference
- NMFS Council Member Orientation Session
- Council Executive Directors Meeting
- NMFS/Council FMP Operations Plans Meeting
- Meeting of Select Scientific Committee on SPR Management Strategy
- ICCAT Conference (Madrid, Spain)

Second Quarter

- MARFIN Program Board
- Mackerel Industry Workshops (2)
- Wreckfish Stock Assessment Panel
- NOAA Magnuson Act Meeting
- SAFMC Meeting
- Congressional Staff Briefing
- ICCAT Working Groups
- NOAA Habitat Protection Workshop

Third Quarter

- Global Ocean Conference
- NMFS Shark Operations Team
- Organized Fishermen of Florida
- Audit/Exit Conference
- South Atlantic Council Meetings (2)
- NOAA NEPA Workshop

Fourth Quarter

- Council Chairmen's Meeting
- Program Review of Florida Marine Research Institute
- NMFS Habitat Research Workshop
- South Atlantic Council Meeting (1)
- MEXUS Gulf Meeting
- RecFin Meeting
- ComFin Meeting
- Bycatch Workshop

STATUS OF PLAN DEVELOPMENT - OCTOBER 1, 1994 THROUGH SEPTEMBER 30, 1995

Fishery Management Unit	Completed Implementation as of September 30, 1995	Target Date	Remarks
*Billfish Plan ^{2,4}		1988	Amendment 1 being developed?
Butterfish			Development of Draft FMP deferred indefinitely.
Coastal Herring	Final profile completed.	None	No further action.
Coral ³	Amendments 1 and 2 implemented.	1984	Draft Amendment 3 implemented.
Groundfish	Draft completed, FMP development suspended.	None	
Mackerel ^{1,2,3}	Amendments 1 through 7 implemented.	1983	Draft Amendment 8 being developed.
Reef Fish ^{2,3}	Amendments 1 through 7 and 9 implemented. Amendment 10 withdrawn.	1984	Amendments 11 and 12, submitted for implementation. Amendment 13 being prepared.
Red Drum ^{1,2,3}	Amendments 1, 2, and 3 implemented.	1986	
*Shark		1993	Amendment 1 being prepared?
Shrimp	Amendments 1 through 7 implemented.	1981	Amendment 9 being prepared. Amendment 8 submitted for implementation.
Spiny Lobster ^{1,2,3}	Amendments 1 through 4 implemented.	1982	(**)
Stone Crab ^{1,2,3}	Amendments 1 through 5 implemented.	1979	(**)
*Swordfish ^{2,3}		1986	Amendment 1 proposed.
*Tuna		?	

¹Monitoring report completed.

²Operations plan completed or under development.

³Overfishing procedure approved.

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

** Draft Generic Amendment Defining Traps being revised.

SUMMARY OF MEETINGS HELD
OCTOBER 1, 1994 THROUGH SEPTEMBER 30, 1995

<u>TYPE OF MEETING</u>	<u>NUMBER OF MEETINGS</u>
Council	7 ²
<u>Public Hearings:</u>	
Reef Fish	19
Coral	2
Red Grouper Size Limits	2
Shrimp	1
<u>S&S Committee:</u>	
Standing SSC	4 ²
Reef Fish SSC	4 ²
Socioeconomic Panel	3
Shrimp SSC	1
Mackerel SSC	1
<u>Stock Assessment Panels</u>	
Reef Fish	3 ²
Mackerel	1
<u>Advisory Panels:</u>	
Shrimp	1
Reef Fish	1
Ad Hoc Red Snapper	1
Red Snapper	1
Mackerel	1
MS/LA Habitat	1
FL/AL Habitat	1
TX Habitat	1
<u>Fishery Management Committees*:</u>	
Inter-Council Mackerel	1
Butterfish	0
Coastal Migratory Pelagic (Mackerel)	3
Coral	2
Migratory Species	1
Red Drum	0
Reef Fish	8
Shrimp	6
Spiny Lobster	1
Stone Crab	1

*Meetings usually held in conjunction with Council meetings

² One meeting by telephone conference call.

TYPE OF MEETING

NUMBER OF MEETINGS

Council Committees*

Administrative Policy	2
Advisory Panel Selection	1
Artificial Reef	0
Budget	1
Data Collection	1
Habitat Protection	3
Law Enforcement	0
Personnel	1
SSC Selection	1
Pension Plan Trustees	0

*Meetings usually held in conjunction with Council meetings

COMMITTEE AND PANEL MEMBERS AS OF SEPTEMBER 30, 1995

COMMITTEE/PANEL

AUTHORIZED MEMBERSHIP

Scientific and Statistical Committee

Standing	14
Butterfish	4
Special Coral	4
Special Mackerel	5
Special Oceanic Migratory Species	4
Special Red Drum	4
Special Reef Fish	5
Special Shark	5
Special Shrimp	5
Special Spiny Lobster	3
Special Stone Crab	3
Mackerel Stock Assessment Panel	7
Red Drum Stock Assessment Panel	8
Reef Fish Stock Assessment Panel	7
Shrimp Stock Assessment Panel	6
Socioeconomic Assessment Panel	10

Advisory Panels

Billfish	15
Butterfish	8
Coastal Migratory Pelagics	15
Coral	8
Habitat Protection	
Florida/Alabama	8
Mississippi/Louisiana	10
Texas	10
Law Enforcement	10
Red Drum	15
Red Snapper	15
Reef Fish	15
Shark	8
Shrimp	17
Spiny Lobster	8
Stone Crab	8
Swordfish	8
Tuna	8

Council Committees

Present Membership

Administrative Policy	5
Advisory Panel Selection	5
Artificial Reef	7
Budget	6
Data Collection	7
Habitat Protection	7
Law Enforcement	7
Personnel	5
SSC Selection	5
Butterfish Management	6
Coastal Migratory Pelagic Management	7
Coral Management	5
Migratory Species Management	7
Red Drum Management	7
Reef Fish Management	7
Shrimp Management	7
Spiny Lobster Management	4
Stone Crab Management	5

U.S. FISH AND WILDLIFE SERVICE

ANADROMOUS FISHERIES

Gulf Coast Fisheries Coordinator Doug Frugé served as chairman of the GSMFC Anadromous Fisheries Subcommittee during 1995 and participated in the GSMFC spring and fall meetings.

Apalachicola-Chattahoochee-Flint Rivers Striped Bass Restoration

The Panama City (Florida) Fisheries Resource Office (FRO) continued serving as the Fish and Wildlife Service (FWS) lead office in efforts to restore striped bass to the Apalachicola-Chattahoochee-Flint (ACF) rivers system. This included coordination of the ACF Striped Bass Restoration Committee; committee meetings were held March 7 and July 14. The 12th Annual *Morone* Workshop that has become a traditional part of this committee's efforts was held in Chattahoochee, Florida February 8-9 and was attended by numerous FWS personnel. The Panama City FRO also coordinated efforts to finalize a striped bass restoration plan for the ACF system.

Striped Bass Fry/Fingerling Production and Stocking

The FWS contracted with Dr. Isaac Wirgin of New York University Medical Center (NYUMC) for genetic screening of striped bass broodfish used in producing Gulf race striped bass fry in spring 1995. Personnel of the FWS assisted state agencies in Florida, Georgia, and Louisiana with broodstock collection and transportation for striped bass fry production. Mammoth Springs and Welaka National Fish Hatcheries (NFH) produced and stocked or shipped approximately 5,904,500 fry for fingerling production. Approximately 2,284,600 Phase I and 44,900 Phase II fingerlings were produced by Carbon Hill (Alabama), Inks Dam (Texas), Meridian (Mississippi), Natchitoches (Louisiana), Private John Allen (Mississippi), Warm Springs (Georgia), and Welaka (Florida) NFHs and stocked in various Gulf of Mexico streams and reservoirs as part of the Gulf-wide restoration effort. In January the Panama City FRO conducted post-stocking evaluations on Phase II fingerlings stocked in the lower Apalachicola River.

Other Striped Bass Activities

The Gulf Coast Fisheries Coordination Office (FCO) (Ocean Springs, Mississippi) assisted the GSMFC with developing a proposal for a multi-state project to restore anadromous Gulf striped bass in the Pascagoula River, Mississippi. The proposal was submitted to the FWS under the Federal Aid in Sport Fish Restoration administrative grant program in June.

The Gulf Coast FCO produced two graphical slides for Mr. Larry Nicholson, of the Gulf Coast Research Laboratory (GCRL) (Ocean Springs, Mississippi) in August. The slides show Gulf of Mexico river systems within the historical range of striped bass, and sites where Gulf race striped bass broodfish have been collected and where fingerlings have been stocked. The slides were used by Mr. Nicholson for a presentation at the American Fisheries Society annual meeting in Tampa, Florida during August 28-31.

A cooperative agreement was finalized September 22 between the FWS and GCRL for a joint study to compare growth and survival of Atlantic versus Gulf races of striped bass in a Mississippi coastal river system. The agreement provided for a \$20,000 FWS grant to the GCRL for the study.

The Warm Springs NFH was involved in a cooperative study with the University of Georgia on the influences of temperature on spawning success of captive-reared striped bass broodfish.

Gulf Sturgeon Recovery Activities

Early in 1995 the FWS contracted with the GSMFC for completion of an on-going study of Gulf sturgeon genetics. The GSMFC subcontracted this work to Dr. Isaac Wirgin of NYUMC.

On January 9 the Gulf Coast FCO sent letters to 200 Mississippi commercial fishermen and shrimpers to request that they report any accidental netting of Gulf sturgeon. This was coordinated with the Panama City FRO and state fisheries and marine personnel.

The Panama City FRO set up holding tanks on the bank of the Suwannee River in March to assist Caribbean Conservation Corporation personnel in collecting Gulf sturgeon broodfish for artificial spawning at Welaka NFH and the University of Florida. Welaka NFH produced and provided Gulf sturgeon fingerlings to the University of Mississippi and Warm Springs NFH for culture studies. Welaka NFH also kept a number of fingerlings on station to gather data on growth rates, feed conversion and density influences on growth.

Laura Jenkins, of the Panama City FRO, presented a paper entitled "Age and growth of Gulf sturgeon in the Apalachicola River, Florida" at the Florida Chapter meeting of the American Fisheries Society in March.

A revised biological opinion on an authorized Corps of Engineers (CE) project to re-open the West Pearl River in Louisiana to navigation was issued by the FWS in March. The biological opinion, in part, addressed effects on Gulf sturgeon in the river.

The FWS and National Marine Fisheries Service (NMFS) jointly issued a decision in August that it was not prudent to designate critical habitat for the Gulf sturgeon.

The Panama City FRO, with assistance from the Gulf Coast FCO sampled for Gulf sturgeon in several Gulf rivers during 1995. These included the Pascagoula (MS) and Escambia (AL, FL) rivers. Tissue samples taken from fish collected in these rivers were submitted to Dr. Isaac Wirgin for genetics analyses, completing the samples needed for the Gulf-wide genetics study. Sampling also occurred in the Apalachicola River in May just below Jim Woodruff Lock and Dam to evaluate effects of an altered sand bar. Sixteen Gulf sturgeon were collected in the Apalachicola River, six of which were less than two years old, indicating that natural reproduction is taking place in the river.

Panama City FRO personnel met several times with the CE and other agency personnel in Mobile, Alabama concerning sturgeon sampling and conservation in the Mobile River basin. A meeting was also held with the CE in Vicksburg, Mississippi to discuss monitoring studies in the West Pearl River, Louisiana.

The Panama City FRO continued radio tracking studies to determine habitat use of Gulf sturgeon in the Choctawhatchee River, Florida. Thirty radio-tagged Gulf sturgeon were tracked on a weekly basis.

The Ecological Services Field Office (ESFO) at Daphne, Alabama was consulted by the CE in April concerning potential effects on Gulf sturgeon of explosive removal of a Pascagoula River railroad bridge at Pascagoula, Mississippi. Concerns expressed by the FWS resulted in delay of the operation to a time of year when Gulf sturgeon were unlikely to be present in the area.

Warm Springs NFH began preparing ponds in June for a study to evaluate pond culture as a method to grow out fingerling Gulf sturgeon.

The FRO at Baton Rouge, Louisiana assisted the Louisiana Department of Wildlife and Fisheries with Gulf sturgeon studies in the West Pearl River in July and August.

The Gulf Sturgeon Recovery/Fishery Management Plan was jointly finalized by the FWS and NMFS in September. The plan was approved by the GSMFC at its April meeting in Washington, DC.

OTHER COASTAL FISHERIES

The Corpus Christi (Texas) FRO sampled fish populations on several coastal NWRs, including Aransas, Brazoria, and Laguna Atascosa NWRs in conjunction with developing fishery management plans for those stations and water control structure installation at Brazoria NWR.

The Corpus Christi FRO initiated sampling in 1995 to monitor the spread of the edible brown mussel (*Perna perna*), an exotic species, in Texas coastal waters and bays. By the end of 1995 the mussel had been found on the Texas coast approximately 125 miles north of Aransas Pass. Corpus Christi FRO staff member Michelle McGrath presented information on the monitoring effort at the meeting of the Texas Chapter of the American Fisheries Society in September, and Tom Serota of that office presented similar information to the Habitat Subcommittee of the GSMFC in October.

The Panama City FRO coordinated a meeting during the spring to discuss fisheries issues of the Choctawhatchee River watershed, Florida.

HABITAT PROTECTION/ENHANCEMENT

Ecosystem Approach

Work continued on developing and refining ecosystem management plans and implementation of high priority actions in the FWS' ecosystem units that touch the Gulf of Mexico. These include the Lower Rio Grande River, Texas Coast, Lower Mississippi River, Central Gulf, Northeastern Gulf, North Florida, and South Florida Ecosystem Units.

Gulf of Mexico Program

Involvement by the FWS in Gulf of Mexico Program activities continued during 1995. These included participation on the Policy Review Board, Management Committee, and the following issue and operational committees: Coastal and Shoreline Erosion; Data and Information Transfer; Freshwater Inflow; Habitat Degradation; Living Aquatic Resources; Nutrient Enrichment; Public Education and Outreach, Marine Debris, and Toxics and Pesticides.

Laura Jenkins, of the Panama City FRO, presented a poster on the Gulf of Mexico Patch Program, and Mike Brim, also of that office, presented a paper on chemical contaminant baseline studies in northwest Florida bays at the Gulf of Mexico Symposium in Corpus Christi, Texas in March. The Corpus Christi FRO and Houston ESFO set up an aquarium and information exhibit at the symposium.

Gulf Coast FCO and Panama City FRO personnel participated in the August 22-25 Gulf of Mexico Large Marine Ecosystem Symposium in St. Petersburg, Florida. Doug Frugé made a presentation at the symposium on the FWS's ecosystem approach as it relates to the Gulf of Mexico.

Fish and Wildlife Service personnel attended a conference on December 5-6 in New Orleans, Louisiana sponsored by the GMP to discuss the Louisiana continental shelf hypoxia problem, which is believed to be caused primarily by excess nutrients in the Mississippi River.

Environmental Contaminants

The Panama City ESFO completed reports on metal contamination in juvenile Gulf sturgeon in the Suwannee River, Florida and contaminants in striped bass in the Apalachicola River, Florida. Sediment samples for various contaminants analyses were collected by the Panama City ESFO in St. Andrew Bay, Perdido Bay and Santa Rosa Sound. The Lafayette (Louisiana) ESFO participated in various activities related to contaminants problems in the Calcasieu River and estuary in Louisiana.

Estuarine Conservation Programs

Personnel of the Gulf Coast FCO continued participation on both the Site Evaluation Committee and the Site Selection, Nomination and Advisory Committee to assist the Mississippi Department of Marine Resources take necessary steps to nominate a site for inclusion in the National Estuarine Research Reserve System. The Bang's Lake/Grand Bay estuarine area of Southeast Mississippi was selected late in 1995 as the site to be recommended to the Mississippi governor for nomination. The proposed area includes the Grand Bay NWR.

The Panama City ESFO continued partnership activities on the St. Andrew Bay Environmental Study Team (BEST) (Florida) and assisted in preparing a nomination of St. Andrew Bay to the National Estuary Program (NEP) in

February. However, the system was ultimately not chosen by the Environmental Protection Agency (EPA) for inclusion in the NEP. The Lafayette ESFO continued active participation in the Barataria-Terrebonne NEP in Louisiana.

Other Habitat Protection Activities

The FWS' ESFO, FRO, FCO, and Refuges and Wildlife personnel were involved in various coastal fisheries habitat issues and activities during the year. These included:

- the ACF and Alabama-Coosa-Talapoosa River Basins Comprehensive (Tri-State) Study of water use;
- beachfront development and lighting effects on sea turtle nesting;
- sea turtle nest monitoring;
- project and permit impacts on coastal wetlands of various types;
- Outer Continental Shelf oil and gas permit applications;
- Louisiana coastal wetlands restoration and protection;
- oil spills;
- marsh management conflicts in Louisiana;
- a proposed project to restore estuarine fish/shellfish access to over 3,000 acres of impounded marsh near Bayou Sauvage NWR, Louisiana; and
- National Pollutant Discharge Elimination System (NPDES) permits reviews, including coordination with the State of Florida, which assumed responsibility from the EPA for these permits on May 1, 1995;

PUBLIC OUTREACH/EDUCATION

On February 9-10 Gulf Coast FCO personnel participated in a Mississippi Coastal Environmental Workshop at the Westside Community Center, Gulfport, Mississippi. A total of 375 ninth grade students and 29 teachers from six Mississippi coastal counties participated in the workshop. The 2-day workshop introduced the students and teachers to eight major environmental issues facing the Gulf of Mexico.

An article by Doug Frugé, of the Gulf Coast FCO, on striped bass in the lower Mississippi River was published in the March issue of the *Mississippi Times*, a publication of the Sierra Club's Midwestern Office.

On April 22 Gulf Coast FCO personnel coordinated and participated in an Earth Day Festival at Gulf Islands National Seashore in Ocean Springs, Mississippi. The theme for the festival was "Home is where the habitat is" and was attended by approximately 1,500 people.

The Panama City FRO developed a Gulf of Mexico striped bass restoration public outreach slide program for general audiences. The Gulf Coast FCO presented the program to the Rotary Club of Gautier, Mississippi on April 27.

On April 28 Susan Merrifield, of the Gulf Coast FCO, taught an Aquatic Project WILD teachers' workshop at the J.L. Scott Marine Education Center and Aquarium in Biloxi, Mississippi. The workshop was part of a 3-day mini-camp called "Wetlands and Maritime Forest." Teachers from Mississippi and Alabama attended the workshops and became qualified to use Aquatic Project WILD in the classroom.

The Panama City FRO in April participated in a storm drain stenciling program in the St. Andrew Bay area and sent stenciling information to local schools to encourage similar storm drain stenciling activities.

In May the Panama City FRO assisted National Marine Fisheries Service personnel with a beach seining program for an eighth grade class from Chipola Middle School, Chipola, Florida. The students were told of the importance of seagrass beds as nursery areas for marine life. Panama City FRO personnel also presented a program on Gulf sturgeon life history at Bay High School in Panama City and assisted with a touch pool display in Panama City Beach for the annual Cajun Festival. Personnel also assisted with a touch pool display in Panama City in June and with estuarine animal collection and identification for the Junior Museum of Bay County during summer. During fall the office staffed a sea turtle display at a Kids "Savers" day for a local federal credit union.

Welaka NFH personnel presented a program on striped bass restoration to the Kiwanis Club of Palatka, Florida on October 19.

Staff of the Lafayette ESFO provided videotaped interviews and other information for two Public Broadcasting System documentaries on wetlands and large rivers.

FEDERAL AID FUNDING

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

GULF STATES MARINE FISHERIES COMMISSION
Ocean Springs, Mississippi

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

for the year ended
December 31, 1995

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

GULF STATES MARINE FISHERIES COMMISSION
DECEMBER 31, 1995

TABLE OF CONTENTS	PAGE NO.
AUDITOR'S REPORT	
Independent Auditor's Report on Financial Statements....	1
FINANCIAL STATEMENTS	
Balance Sheet.....	2
Statement of Revenues, Expenditures and Changes in Fund Balance.....	3
Statement of Cash Flows.....	5
NOTES TO FINANCIAL STATEMENTS.....	6
SUPPLEMENTAL DATA	
Independent Auditor's Report on Schedule of Federal Awards.....	9
Schedule of Federal Awards.....	11
Independent Auditor's Report on Schedule of Expenses on Restricted Funds.....	12
Schedule of Expenses - Restricted Funds.....	13
AUDITOR'S REPORTS ON INTERNAL CONTROLS	
Independent Auditor's Report on Internal Control Structure Required by OMB Circular A-133.....	14
Independent Auditor's Report on Internal Control Structure in Accordance with Government Auditing Standards.....	17
AUDITOR'S REPORT ON COMPLIANCE	
Independent Auditor's Report on Compliance with Laws and Regulations Based on an Audit of Financial Statements Performed in Accordance with Government Auditing Standards.....	20
Independent Auditor's Report on Compliance with General Requirements Applicable to Federal Financial Assistance Programs and Specific Requirements Applicable to Major and Non-Major Program Transactions.....	22

Fountain, Seymour, Mosher & Associates, P.A.

ACCOUNTANTS & AUDITORS
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INDEPENDENT AUDITOR'S REPORT

To the Board of Commissioners of
Gulf States Marine Fisheries Commission

We have audited the accompanying balance sheet of Gulf States Marine Fisheries Commission (a non-profit organization) as of December 31, 1995, and the related statement of revenue, expenditures and changes in fund balance and cash flows for the year then ended. These financial statements are the responsibility of Gulf States Marine Fisheries Commission's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards, Government Auditing Standards, issued by the Comptroller General of the United States, and the provisions of Office of Management and Budget Circular A-133, "Audits of Institutions of Higher Education and Other Non-profit Institutions". Those standards and OMB Circular A-133 require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit, in accordance with these standards, includes examining on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Gulf States Marine Fisheries Commission as of December 31, 1995, and the results of its operations and cash flows for the year then ended in conformity with generally accepted accounting principles.

David W. Rugh, C.P.A.

D'Iberville, Mississippi
June 25, 1996

GULF STATES MARINE FISHERIES COMMISSION
BALANCE SHEET
DECEMBER 31, 1995

	Un- Restricted Fund	Restricted Funds	Total All Funds
ASSETS			
CURRENT ASSETS:			
Cash	\$ 163,755	\$	\$ 163,755
Certificate of Deposit	25,405		25,405
Grants Receivable		<u>27,723</u>	<u>27,723</u>
	<u>189,160</u>	<u>27,723</u>	<u>216,883</u>
PROPERTY AND EQUIPMENT			
Fixed Assets	97,450	64,539	161,989
Less Accumulated Depreciation	(67,023)		(67,023)
Less Contra Account		<u>(63,890)</u>	<u>(63,890)</u>
	<u>30,427</u>	<u>649</u>	<u>31,076</u>
TOTAL ASSETS	<u><u>219,587</u></u>	<u><u>28,372</u></u>	<u><u>247,959</u></u>
LIABILITIES AND FUND BALANCE			
CURRENT LIABILITIES:			
Note Payable	17,612		17,612
TOTAL CURRENT LIABILITIES	17,612	-0-	17,612
FUND EQUITY			
Fund Balance Unrestricted	201,975		201,975
Fund Balance Restricted		<u>28,372</u>	<u>28,372</u>
TOTAL FUND EQUITY	<u><u>201,975</u></u>	<u><u>28,372</u></u>	<u><u>230,347</u></u>
TOTAL LIABILITIES AND FUND EQUITY	<u><u>\$ 219,587</u></u>	<u><u>\$ 28,372</u></u>	<u><u>\$ 247,959</u></u>

The notes to Financial Statements are an integral part of this Statement.

**GULF STATES MARINE FISHERIES COMMISSION
STATEMENT OF REVENUES, EXPENDITURES AND
CHANGES IN FUND BALANCE
For The Year Ended December 31, 1995**

	Un- Restricted Fund	Restricted Funds	Total All Funds
<u>REVENUES</u>			
Member State Appropriations	\$ 112,500	\$	\$ 112,500
Grants and Agreements		626,881	626,881
Interest Earned	4,380		4,380
Miscellaneous Income	<u>4,255</u>		<u>4,255</u>
Total Revenue	121,135	626,881	748,016
<u>EXPENDITURES</u>			
Salaries	47,982	203,560	251,542
Health Insurance	8,823	38,853	47,676
Retirement	3,391	13,832	17,223
Office Rental	3,331	17,728	21,059
Equipment Rental	124	531	655
Office Supplies	4,892	7,006	11,898
Postage	539	9,553	10,092
Travel	9,599	104,100	113,699
Telephone	2,535	9,780	12,315
Copying Expense	1,892	5,632	7,524
Printing	615	13,584	14,199
Meeting Cost	6,811	14,193	21,004
Dues and Subscription	1,410	1,555	2,965
Auto Expense	2,354	647	3,001
Insurance	1,341	4,432	5,773
Maintenance and Repairs	1,580	5,640	7,220
Courtesies	578		578
Professional Services	1,334	5,366	6,700
Depreciation	13,128		13,128
Taxes-Payroll	3,671	15,572	19,243
Other Taxes	275	887	1,162
Contractual		74,105	74,105
Interest	1,718		1,718
Capital Expenditures	<u> </u>	<u>28,840</u>	<u>28,840</u>
Total Expenditures	<u>\$ 117,923</u>	<u>\$ 575,396</u>	<u>\$ 693,319</u>

The Notes to Financial Statements are an integral part of this statement.

GULF STATES MARINE FISHERIES COMMISSION
STATEMENT OF REVENUES, EXPENDITURES AND
CHANGES IN FUND BALANCE
For The Year Ended December 31, 1995

	Un- Restricted <u>Fund</u>	Restricted <u>Funds</u>	Total All <u>Funds</u>
Excess of Revenue over Expenditures	\$ 3,212	\$ 51,485	\$ 54,697
Fund Balance, January 1, 1995	<u>192,744</u>	<u>(20,705)</u>	<u>172,039</u>
Transfers In (Out)	2,408	(2,408)	
Prior Period Adjustment Gain (Loss) or Disposal	3,779 (168)		3,779 (168)
	<hr/>	<hr/>	<hr/>
Fund Balance, December 31, 1995	<u>\$ 201,975</u>	<u>\$ 28,372</u>	<u>\$ 230,347</u>

The Notes of Financial Statements are an integral part of this Statement.

GULF STATES MARINE FISHERIES COMMISSION
 STATEMENTS OF CASH FLOWS - ALL FUND TYPES
 For The Year Ended December 31, 1995

CASH FLOWS FROM OPERATING ACTIVITIES:	
Net Decrease in Fund Balance	\$ 58,308
Adjustments to Reconcile Net Decrease in Fund Balance to Net Cash Used By Operating Activities -	
Depreciation	13,128
Loss or Sale	168
Changes in Operating Assets and Liabilities -	
Decrease in Accrued Payroll Withholding	<u>(3,779)</u>
Net Cash Used by Operating Activities	40,102
 CASH FLOWS FROM FINANCING ACTIVITIES:	
Principal payments on loan	<u>(7,793)</u>
Net Cash Provided by Financing Activities	<u>(7,793)</u>
 CASH FLOWS FROM INVESTING ACTIVITIES:	
Purchase Fixed Assets (unrestricted)	<u>(5,486)</u>
Net Cash Used by Investing Activities	<u>(5,486)</u>
Net Decrease in Cash	26,823
Cash at Beginning of Year	<u>162,337</u>
Cash at End of Year	<u>\$ 189,160</u>

The Notes to Financial Statements are an integral part of this Statement.

GULF STATES MARINE FISHERIES COMMISSION
NOTES TO FINANCIAL STATEMENTS
December 31, 1995

NOTE 1 - ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(a) Organization - The Gulf States Marine Fisheries Commission, a non profit organization, was formally created, with the consent of the 81st Congress of the United States, granted by Public Law 66 and approved May 19, 1949. Congress authorized an interstate compact relating to the better utilization of the fisheries of the Gulf of Mexico. Parties to the agreement are the states of Alabama, Florida, Louisiana, Mississippi and Texas. The Commission's office is centrally located in Ocean Springs, Mississippi.

The Commission receives and expends such sums of money as shall from time to time be appropriated for its use by the participating governing authorities, and makes application for and receives and expends funds available under appropriate Federal Programs. The Commission may also receive and expend funds from any other sources not "prohibited by law".

(b) Basis of Accounting - Basis of accounting refers to when revenues and expenditures are recognized in the accounts and reported in the financial statements. Basis of accounting relates to the timing of the measurements made, regardless of the measurement focus applied.

The financial statements have been prepared on the accrual basis in accordance with principles of fund accounting. Under the accrual method, revenues and expenditures are recognized when incurred without regard to actual receipt or disbursement of cash. Funds are established according to their nature and purpose. Separate accounts are maintained for each fund. However, in the accompanying financial statements, funds that have similar characteristics have been combined into fund groups. Accordingly, all financial transactions have been recorded and reported by fund groups as follows:

Restricted Fund
Unrestricted Fund

(c) Fund Accounting - In order to assure observance of limitations and restrictions placed on the use of the resources available to the Commission, the accounts are maintained in accordance with the principles of "fund accounting". This is the procedure by which resources for various purposes are classified for accounting and

reporting objectives specified. Separate accounts are maintained for each fund; however, in the accompanying financial statements, funds that have similar characteristics have been combined into fund groups. Accordingly, all financial transactions have been recorded and reported by fund group.

Within each fund group, funds restricted by outside sources are so indicated and are distinguished from unrestricted funds designated for specific purposes by action of the Board of Commissioners. Externally restricted funds may only be utilized in accordance with the purposes established by the funds over which the Board retains full control to use in achieving any of its purposes.

(d) **Grants Receivable** - In accordance with the accrual basis of accounting, revenues are recognized when earned. In the case of grant revenue, amounts are earned when the related expenditures are incurred.

(e) **Fixed Assets** - Fixed assets purchased from unrestricted funds are properly capitalized and set up as fixed assets on the books. Fixed assets purchased from (restricted funds) are expensed at the time of payment, and additionally are capitalized on the books with an offsetting Contra Account. Depreciation recorded in the operating fund is recorded using the straight-line method. Lives used are summarized below:

<u>TYPE OF ASSET</u>	<u>LIFE (years)</u>
Office Equipment and Furniture	5 & 10
Automotive	5

Depreciation recorded for the year ended December 31, 1995, was \$13,128.

NOTE 2 - LEASE COMMITMENTS

The Commission occupies space under long-term lease agreements which expires in the year 2002. The monthly lease payment is \$925.00. The monthly lease payment will be adjusted every three (3) years using the consumer price index as a guide.

The approximate minimum future annual rental commitments under such lease as of December 31, 1995 are as follows:

1996	\$ 15,720
1997	15,720
1998	15,720
1999	15,720
2000-2002	<u>47,160</u>
TOTAL	\$ 110,040

NOTE 3 - RETIREMENT PLAN

The Commission has a tax sheltered annuity plan for all employees that have been employed for at least six (6) months. The Commission contributes seven (7) percent of each eligible employee's base pay with the amounts being fully vested upon payment by the Commission. The total expense for the year ended December 31, 1995 was \$17,223.

NOTE 4 - ALLOCATION OF EXPENSES

The expense of providing the various grants and agreement programs and activities are summarized in the Combined Statement of Revenue, Expenditures and Changes in Fund Balances. Accordingly, certain expenses have been allocated among the grants, agreements, and the Commission activities based upon the benefited program. In some instances, the expenses were allocated based upon an equitable and equal distribution.

NOTE 5 - INCOME TAXES

The Commission has filed for a tax-exempt status, and will be exempt under Section 501 (c) of the Internal Revenue Code. Their revenue comes from federal grants and agreements and member states appropriations.

SUPPLEMENTARY INFORMATION

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**INDEPENDENT AUDITOR'S REPORT ON
SCHEDULE OF FEDERAL AWARDS**

**To the Board of Commissioners
Gulf States Marine Fisheries Commission**

We have audited the financial statements of **Gulf States Marine Fisheries Commission** (a non-profit organization) for the year ended December 31, 1995, and have issued our report thereon dated June 15, 1996. These financial statements are the responsibility of **Gulf States Marine Fisheries Commission's** management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards and Government Auditing Standards, issued by the Comptroller General of the United States, and the provisions of Office of Management and Budget Circular A-133, "Audits of Institutions of Higher Education and Other Non-Profit Institutions". Those standards and OMB Circular A-133 require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit in accordance with these standards includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

Our audit was made for the purpose of forming an opinion on the financial statements of Gulf States Marine Fisheries Commission taken as a whole. The accompanying schedule of federal awards is presented for the purpose of additional analysis and is not a required part of the financial statements. The information in that schedule has been subjected to the auditing procedures applied in the audit of the financial statements and, in our opinion, is fairly presented in all material respects in relation to the basic financial statements taken as a whole.

Donald W. Rugh, C.P.A.

D'Iberville, Mississippi
June 25, 1996

GULF STATES MARINE FISHERIES COMMISSION
 SCHEDULE OF FEDERAL AWARDS
 For The Year Ended December 31, 1995

<u>Federal Grantor/Program Title</u>	<u>Award #</u>	<u>Federal CFDA Number</u>	<u>Award Amount Federal Share</u>	<u>Accumulated Revenue at Jan. 1, 1995 Federal Share</u>	<u>Current Federal Revenue Received</u>	<u>Accumulated Disbursements/ Expenditures at Jan. 1, 1995 Federal Share</u>	<u>Current Disbursements/ Expenditures Federal Share</u>
MAJOR PROGRAMS							
Department of Commerce							
Southeast Area Monitoring and Assessment Program	NA47FS0038	11.300	\$ 189,562	\$ 83,439	\$ 106,123	\$ 83,439	\$ 96,290
Inter Jurisdictional Fisheries Management Plans	NA26F10026-03	11.300	98,333	79,670	18,663	90,209	8,124
Recreational Fisheries Information Network	NA56F10085-03	11.407	166,666	-0-	166,666	-0-	159,397
	NA57FT0457	11.434	<u>128,700</u>	<u>-0-</u>	<u>55,800</u>	<u>-0-</u>	<u>55,784</u>
TOTAL DEPARTMENT OF COMMERCE			583,261	163,109	347,332	173,648	319,603
Department of Interior							
Sports Fish Restoration Program	14-48-0009-94-1223	15.605	<u>400,000</u>	<u>-0-</u>	<u>190,458</u>	<u>-0-</u>	<u>101,901</u>
TOTAL DEPARTMENT OF INTERIOR			400,000	-0-	190,458	-0-	101,901
TOTAL MAJOR PROGRAMS			<u>983,261</u>	<u>163,109</u>	<u>537,790</u>	<u>173,648</u>	<u>501,504</u>
NON-MAJOR PROGRAMS							
Department of Commerce							
Gulf of Mexico Fishery Management Council	95-GS-70600	11.300	25,000	6,250	18,750	4,392	27,254
Department of Interior							
The Development and use of Restriction Fragment Length DNA Polymorphism Probes for Striped Bass Identification	14-16-0004-91-920	15.605	65,000	<u>47,000</u>	<u>16,000</u>	<u>57,624</u>	<u>7,211</u>
TOTAL NON-MAJOR PROGRAMS			<u>\$ 90,000</u>	<u>\$ 53,250</u>	<u>\$ 34,750</u>	<u>\$ 60,016</u>	<u>\$ 34,465</u>

See accompanying Independent Auditor's Report on Federal Awards.

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**INDEPENDENT AUDITOR'S REPORT
ON SCHEDULE OF REVENUE AND EXPENSES
ON RESTRICTED FUNDS**

To the Board of Commissioners
Gulf States Marine Fisheries Commission

Our report on our audit of the basic financial statements of Gulf States Marine Fisheries Commission (a non-profit organization) for 1995 appears on page 1. We conducted our audit in accordance with generally accepted auditing standards, Government Auditing Standards issued by the Comptroller General of the United States, and the provisions of Office of Management and Budget Circular A-133, "Audits of Institutions of Higher Education and Other Non-Profit Institutions", for the purpose of forming an opinion on the basic financial statements taken as a whole. The schedule of expenses on restricted funds is presented for the purposes of additional analysis and is not a required part of the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

Gerald W. Rgly, C.P.A.

D'Iberville, Mississippi
June 25, 1996

GULF STATES MARINE FISHERIES COMMISSION
 SCHEDULE OF REVENUE AND EXPENSES - RESTRICTED FUNDS
 For The Year Ended December 31, 1995

	Council Funds	Port Samplers	DNA	Fish and Wildlife	Inter Juris- dictional	SEAMAP Funds	RECFIN	Chevron	Sportfish Restoration	Total All Funds
REVENUES										
Grants & Agreements	\$ 18,750	\$ 31,841	\$ 16,000	\$ 18,300	185,329	\$ 106,123	\$ 55,880	\$ 4,200	\$ 190,458	\$ 626,881
Total Revenue	18,750	31,841	16,000	18,300						
EXPENDITURES										
Salaries	17,913	0	0	5,686	59,855	37,823	13,819	0	68,464	203,560
Payroll Taxes	1,369	0	0	435	4,579	2,894	1,057	0	5,238	15,572
Health Insurance	3,401	0	0	1,150	11,600	7,207	2,392	0	13,103	38,853
Retirement	1,095	0	0	370	4,211	2,701	646	0	4,809	13,832
Office Rent	1,242	0	0	4,166	4,147	2,629	798	0	4,746	17,728
Equipment Rental	16	0	0	9	159	93	58	0	196	531
Office Supplies	139	0	0	249	2,620	1,456	385	0	2,157	7,006
Postage	18	0	0	16	2,601	4,126	935	0	1,857	9,553
Travel - Committee	1,006	0	0	0	31,189	15,867	16,158	1,025	38,856	104,100
Telephone	248	0	0	389	2,960	1,664	1,538	0	2,982	9,780
Copy Expense	260	0	0	172	1,673	1,421	449	0	1,658	5,632
Printing	69	0	0	57	7,137	5,082	247	0	993	13,584
Meeting Costs	0	0	0	0	4,248	3,005	1,750	0	5,191	14,193
Subscriptions & Dues	0	0	0	9	182	490	0	0	875	1,555
Auto Expense	0	0	0	1	370	111	0	0	166	647
Maintenance	164	0	0	81	1,713	1,224	55	0	2,404	5,640
Professional Services	163	0	0	103	1,698	1,041	263	0	2,099	5,366
Other Taxes	54	0	0	19	276	210	5	0	324	887
Contractual	0	24,039	7,211	0	14,856	0	13,500	0	14,500	74,105
Insurance	97	0	0	79	1,252	788	347	0	1,870	4,432
Capital Expenditures	0	0	0	1,382	10,195	6,466	1,382	0	2,415	28,840
TOTAL EXPENDITURES	27,254	24,039	7,211	14,363	167,521	96,298	55,784	1,025	181,901	575,396
Excess of Revenue over Expenditures	(8,504)	7,802	8,789	3,937	17,808	9,825	96	3,175	8,557	51,485
Fund Balance, Jan. 1, 1995	8,108	0	5,202	(3,119)	(10,539)	(5,940)	0	0	(14,417)	(20,705)
Transfers In (Out)	0	0	0	0	0	0	0	(2,408)	0	(2,408)
Fund Balance, Dec. 31, 1995	\$ (396)	\$ 7,802	\$ 13,991	\$ 818	\$ 7,269	\$ 3,885	\$ 96	\$ 767	\$ (5,862)	\$ (28,372)

See accompanying Independent Auditor's Report on Additional Statements

AUDITOR'S REPORTS ON INTERNAL CONTROLS

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**INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL
STRUCTURE REQUIRED BY OMB CIRCULAR A-133**

To the Board of Commissioners
Gulf States Marine Fisheries Commission

We have audited the financial statements of Gulf States Marine Fisheries Commission (a non-profit organization) for the year ended December 31, 1995, and have issued our report thereon dated June 15, 1996. We have also audited the Organization's compliance with requirements applicable to major federal financial assistance programs and have issued our reports thereon dated May 12, 1995.

We conducted our audit in accordance with generally accepted auditing standards, Government Auditing Standards, issued by the Comptroller General of the United States, and Office of Management and Budget (OMB) Circular A-133, "Audits of Institutions of Higher Education and Other Non-Profit Institutions." Those standards and OMB Circular A-133 require that we plan and perform the audit to obtain reasonable assurance about whether the misstatement and about whether the Organization complied with laws and regulations, noncompliance with which would be material to a major federal financial assistance program.

In planning and performing our audit of the financial statements of Gulf States Marine Fisheries Commission for the year ended December 31, 1995, we considered its internal control structure in order to determine our auditing procedures for the purpose of expressing opinions on the financial statements and on its compliance with requirements applicable to major federal financial assistance programs and not to provide assurance on the internal control structure.

The management of Gulf States Marine Fisheries Commission is responsible for establishing and maintaining an internal control structure. In fulfilling this responsibility, estimates and

judgements by management are required to assess the expected benefits and related costs of internal control structure policies and procedures. The objectives of an internal control structure are to provide management with reasonable, but not absolute, assurance that assets, are safeguarded against loss from unauthorized use or disposition, that transactions are executed in accordance with managements authorization and recorded properly to permit the preparation of financial statements in accordance with generally accepted accounting principles, and that federal assistance programs are managed in compliance with applicable laws and regulations. Because of inherent limitations in any internal control structure, errors, irregularities, or instances of noncompliance may nevertheless occur and not be detected. Also, projection of any evaluation of the structure to future periods is subject to the risk that procedures may be inadequate because of changes in conditions or that the effectiveness of the design and operation of policies and procedures may deteriorate.

For the purpose of this report, we have classified the significant internal control structure policies and procedures in the following categories:

Cycles of Activity

- Treasury or Financing
- Revenue/Receipts
- Purchases/Disbursements
- Payroll
- External Financial Reporting

General Requirements

- Political Activity
- Allowable Costs/Cost Principles
- Civil Rights
- Cash Management
- Federal Financial Reports
- Drug Free Workplace Act
- Administrative Requirements

Specific Requirements

- Types of Services Allowed or not Allowed
- Eligibility
- Federal Financial Reports and Claims for Advances and Reports
- Cost Allocation

For all of the internal control structure categories listed above, we obtained an understanding of the design of relevant policies and procedures and determined whether they have been placed in operation, and we assessed control risk.

During the year ended December 31, 1995, Gulf States Marine Fisheries Commission expended 94 percent of its total federal financial assistance under major federal financial assistance programs. We performed tests of control, as required by OMB Circular A-133, to evaluate the effectiveness of the design and operation of internal control structure policies and procedures that we considered relevant to preventing or detecting material noncompliance with specific requirements, general requirements, and requirements governing claims for advances and reimbursements and amounts claimed for advances and reimbursements and amounts claimed or used for matching that are applicable to each of the Organizations major federal financial assistance programs, which are identified in the accompanying schedules of federal awards. Our procedures were less in scope than would be necessary to render an opinion on these internal control structure policies and procedures. Accordingly, we do not express such as opinion.

The report is intended for the information of the Board of Commissioners, Management and relevant federal agencies. This restriction is not intended to limit the distribution of this report, which is a matter of public record.

Herald W. Riggly, C.P.A.

D'Iberville, Mississippi

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**INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL
STRUCTURE IN ACCORDANCE WITH GOVERNMENT AUDITING
STANDARDS**

To the Board of Commissioners
Gulf States Marine Fisheries Commission

We have audited the financial statements of **Gulf States Marine Fisheries Commission** (a non-profit organization) for the year ended December 31, 1995, and have issued our report thereon dated June 15, 1996.

We conducted our audit in accordance with generally accepted auditing standards and Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

In planning and performing our audit of the financial statements of **Gulf States Marine Fisheries Commission** for the year ended December 31, 1995, we considered its internal control structure in order to determine our auditing procedures for the purpose of expressing an opinion on the financial statements and not to provide assurance on the internal control structure.

The management of **Gulf States Marine Fisheries Commission** is responsible for establishing and maintaining an internal control structure. In fulfilling this responsibility, estimates and judgments by management are required to assess the expected benefits and related costs of internal control structure policies and procedures. The objectives of an internal control structure are to provide management with reasonable, but not absolute, assurance that assets are safeguarded against loss from

unauthorized use or disposition, and that transactions are executed in accordance with management's authorization and recorded properly to permit the preparation of financial statements in accordance with generally accepted accounting principles. Because of inherent limitation in any internal control structure, errors or irregularities may nevertheless occur and not be detected. Also, projection of any evaluation of the structure to future periods is subject to the risk that procedures may become inadequate because of changes in conditions or that the effectiveness of the design and operation of policies and procedures may deteriorate.

For the purpose of this report, we have classified the significant internal control structure policies in the following categories:

Cycles of Activity

- Treasury or Financing
- Revenue/Receipts
- Purchases/Disbursements
- Payroll
- External Financial Reporting

General Requirement

- Political Activity
- Allowable Costs/Cost Principles
- Civil Rights
- Cash Management
- Federal Financial Reports
- Drug-Free Workplace Act
- Administrative Requirements

Specific Requirements

- Types of Services Allowed or Not Allowed
- Eligibility
- Federal Financial Reports and Claims for Advances and Reports
- Cost Allocation

For all of the control categories listed above, we obtained an understanding of the design of relevant policies and procedures and whether they have been placed in operation, and we assessed control risk.

Our consideration of the internal control structure would not necessarily disclose all matters in the internal control structure that might be material weakness under standards established by the American Institute of Certified Public Accountants. A material weakness is a reportable condition in which the design or operation

of the specific internal control structure elements does not reduce to a relatively low level the risk that errors or irregularities in amount that would be material in relation to the financial statements being audited may occur and not be detected within a timely period by employees in the normal course of performing their assigned functions. We noted no matters involving the internal control structure and its operations that we considered to be a material weakness as defined above.

This report is intended for the information of the Board of Commissioners, Management and the relevant federal agencies. This restriction is not intended to limit the distribution of this report, which is a matter of public record.

Herald W. Rgby, C.P.A.

D'Iberville, Mississippi
June 25, 1996

AUDITOR'S REPORTS ON COMPLIANCE

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**INDEPENDENT AUDITOR'S REPORT ON COMPLIANCE WITH
LAWS AND REGULATIONS BASED ON AN AUDIT OF
FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH
GOVERNMENT AUDITING STANDARDS**

To the Board of Commissioners
Gulf States Marine Fisheries Commission

We have audited the financial statements of **Gulf States Marine Fisheries Commission**, a non-profit organization, as of and for the year ended December 31, 1995, and have issued our report thereon dated June 15, 1996.

We conducted our audit in accordance with generally accepted auditing standards and Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

Compliance with laws, regulations, contracts, and grants applicable to **Gulf States Marine Fisheries Commission**, is the responsibility of **Gulf States Marine Fisheries Commission's** management. As part of obtaining reasonable assurance about whether the financial statements are free of material misstatements, we performed tests of the **Gulf States Marine Fisheries Commission's** compliance with certain provisions of laws, regulations, contracts, and grants. However, our objective was not to provide an opinion on overall compliance with such provisions.

The results of our tests indicate that, with respect to the items tested, **Gulf States Marine Fisheries Commission** complied, in all material respects, with the provisions referred to in the preceding paragraph. With respect to items not tested, nothing came to our attention that caused us to believe that the Commission had not complied, in all material respects, with those provisions.

This report is intended for the information of the Board of Commissioners, Management and relevant federal agencies. This restriction is not intended to limit the distribution of this report, which is a matter of public record.

Gerald W. Righy, C.P.A.

D'Iberville, Mississippi
June 25, 1996

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**INDEPENDENT AUDITOR'S COMBINED REPORT ON COMPLIANCE
WITH GENERAL REQUIREMENTS APPLICABLE TO FEDERAL
FINANCIAL ASSISTANCE PROGRAMS AND SPECIFIC
REQUIREMENTS APPLICABLE TO MAJOR AND NONMAJOR
PROGRAM TRANSACTIONS**

To the Board of Commissioners
Gulf States Marine Fisheries Commission

We have audited Gulf States Marine Fisheries Commission's (a non-profit organization) compliance with the requirements governing types of services allowed or unallowed; eligibility; matching, level of effort or earmarking; reporting; claims for advances and reimbursements; and amounts claimed or used for matching that are applicable to each of its major federal financial assistance programs, which are identified in the accompanying schedule of federal awards, for the year then ended December 31, 1995. The management of Gulf States Marine Fisheries Commission is responsible for the Organization's compliance with those requirements. Our responsibility is to express an opinion on compliance with those requirements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards, Government Auditing Standards, issued by the Comptroller General of the United States, and the provisions of Office of Management and Budget Circular A-133, "Audits of Institutions of Higher Education and other Non-Profit Institutions". Those standards and OMB Circular A-133 require that we plan and perform the audit to obtain reasonable assurance about whether material noncompliance with the requirements referred to above occurred. An audit includes examining, on a test basis, evidence about the organization's compliance with those requirements. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, Gulf States Marine Fisheries Commission complied, in all material respects, with the requirements governing types of services allowed or unallowed; eligibility; matching, level of effort, or earmarking; reporting; claims for advances and reimbursements; and amounts claimed or used for matching that are applicable to each of its major federal financial assistance programs for the year ended December 31, 1995.

In connection with our audit of the December 31, 1995 financial statements of Gulf States Marine Fisheries Commission, and with our obtaining an understanding of the Organization's internal control structure elements related to administering federal financial assistance programs, as required by OMB Circular A-133, we selected certain transactions applicable to certain non-major federal financial assistance programs for the year ended December 31, 1993. As required by OMB Circular A-133, we have performed auditing procedures to test compliance with the requirements governing types of services allowed or unallowed; and eligibility that are applicable to those transactions. Also, we have applied procedures to test Gulf States Marine Fisheries Commission's compliance with the following requirements applicable to each of its federal financial assistance programs, the major programs of which are identified in the accompanying schedule of federal awards, for the year ended December 31, 1995.

Our procedures for testing the requirements that are listed in the preceding paragraph were limited to the applicable procedures described in the Office of Management and Budget's "Compliance Supplement for Audits of Educational Institutions and Other Non-Profit Institutions." Our procedures for testing compliance with the general requirements and the specific requirements applicable to the non-major programs which are listed in the schedule of federal awards were substantially less in scope than an audit, the objective of which is the expression of an opinion on Gulf States Marine Fisheries Commission's compliance with the requirements. Accordingly, we do not express such an opinion.

With respect to the items tested, the results of those procedures disclosed no material instances of noncompliance with the requirements listed in the fifth paragraph of this report. With respect to items not tested, nothing came to our attention that caused us to believe that Gulf States Marine Fisheries Commission had not complied, in all material respects, with those requirements.